

Defined Contribution Plans Advisory Committee (DCPAC) Meeting Virginia Retirement System, Pavilion Building, 3rd Floor Board Room 1111 E. Main Street, Richmond, VA 23219

Thursday, 8/27/2020 1:00 - 4:00 PM ET

I. Welcome

II. Public Comment

III. Meeting Minutes

— Adoption of the Minutes from the June 4, 2020 Meeting DCPAC Minutes 06042020 - Page 2

IV. Investments

— Annual Investments Review

Final PP DC Investments 8-27-20 slide deck - Page 8

V. Administration

Administrative Reports & Communications
 2020Q2 Administrative Summary FINAL - Page 20

- DC Plans and Hybrid Plan Update
- ORPHE

VI. Governing Document Update

Governing Document Update 08-27-2020 - Page 51

- Overview of Governing Documents
- Introduction to Plan Documents Updates
 - Review of expected changes to the Plan Documents to be considered at a future meeting

VII. Discussion of New Ideas

VIII. 2020 Meetings

- 2020 Meetings--November 19, 2020 at 1:00 p.m.
- ORPHE Annual Employer Update (not a meeting of the DCPAC) September 24, 2020
- Upcoming poll for 2020 meetings

IX. Adjournment

X. Appendix

(for informational purposes only, will not be reviewed in detail during meeting)

Final DCPAC annual review - 2020 - Page 61

Q2 2020 Quarterly Review - Page 102



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Minutes

An electronic meeting, held in accordance with § 2.2-3708.2(A)(3) of the *Code of Virginia* and Chapter 1283 of the 2020 Acts of Assembly, the Defined Contribution Plans Advisory Committee (DCPAC) of the VRS Board of Trustees convened electronically on June 4, 2020, with the following members present:

Committee Members:

Brett Hayes, Chair
The Honorable J. Brandon Bell, II
Shannon Irvin
Rick Larson
Brenda Madden
Kathy Seay
David Winter

Members of the Board of Trustees:

O'Kelly McWilliams, III William Leighty

VRS staff members participating:

Trish Bishop, Dorothy Camp, Steve Cerreto, Jeanne Chenault, Michael Cooper, Valerie Disanto, Josh Fox, Kelly Hiers, KC Howell, Robert Irving, Ciara Lawson, Rebecca Nicholas, Teresa Nguyen, Caitlin Pelletier, Laura Pugliese, Joseph Roman, Karen Solarte, Kristy Scott, Michael Scott, Jillian Sherman, Jennifer Schreck, Ashley Spradley, Peter Thompson, Bridgette Watkins, Rachel Webb and Cindy Wilkinson.

Also participating were Michael Jay, House Appropriations Committee; Adam Rosatelli, Virginia Senate Finance & Appropriations Committee; Ronan Burke, Capital Group; Denise Fortune, Voya; and Brad Couture, Wellington

The meeting convened at 10:32 a.m.

Ms. Sherman served as facilitator and walked participants through the logistics of an electronic meeting. Mr. Hayes then called the meeting to order.

Mr. Hayes welcomed Committee members, Board members, VRS staff, representatives from other stakeholder groups and members of the public. Mr. Hayes also welcomed and introduced two new Committee members, Brenda Madden, Director of Human Resources with Davenport & Company, LLC, and Kathy Seay, Deputy County Administrator for Hanover County, to the DCPAC.

Mr. Hayes noted that given the current circumstances related to COVID-19, the DCPAC was unable to meet in person. However, utilizing electronic means, the DCPAC could hold this meeting in accordance with §2.2-3708.2(A)(3) of the *Code of Virginia* and Chapter 1283 of the 2020 Acts of Assembly as it relates to conducting business during the pandemic.



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Mr. Hayes took a roll call of each DCPAC member for attendance purposes:

Senator Bell – Present

Mr. Deo – Absent

Ms. Irvin – Present

Mr. Larson - Present

Ms. Madden – Present

Ms. Seay – Present

Mr. Winter – Present

Mr. Hayes – Present

There was no public comment.

APPROVAL OF MINUTES

Upon a motion by Mr. Winter, with a second by Mr. Bell, the minutes of the November 7, 2019 meeting were approved.

Mr. Hayes asked each Committee member to vote on the motion:

Senator Bell – Aye

Ms. Irvin – Aye

Mr. Larson - Aye

Ms. Madden – Aye

Ms. Seay – Aye

Mr. Winter – Aye

Mr. Hayes - Aye

DC PLANS INVESTMENTS UPDATE

Laura Pugliese, Portfolio Manager, Defined Contribution Plans, provided an overview of the April 30, 2020, performance reports.

Ms. Pugliese informed the DCPAC of participant trading activity in the unbundled DC plans in response to the increased market volatility from COVID-19, noting that activity was consistent with other plan sponsors. She also noted the unprecedented economic stimulus and monetary policy response to COVID 19 seemed to stem the recent increased market volatility.

Ms. Pugliese shared with the Committee a benchmark change effective January 2020 for the Money Market Fund from the Bloomberg Barclay's U.S. 3 Month Treasury Bill Index to the FTSE 3 Month Treasury Bill Index on the unbundled DC Plans. She noted the change was to ensure the same benchmark is used across the bundled TIAA ORPHE and unbundled DC Plans platforms and that index returns between the two benchmarks were immaterial. She informed the Committee the VRS Investment Department no longer monitors the deselected TIAA proprietary funds in the TIAA GRA and RA contracts. Ms. Pugliese also shared that Fidelity was deselected as an ORPHE provider as of February



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2020. As such, both Fidelity and deselected TIAA proprietary funds would no longer be included in performance reports and total assets reported out by the VRS Investment department.

Ms. Pugliese provided an overview of the performance on the unbundled DC Plans platform as of April 30, 2020. She highlighted the change in the Money Market Fund benchmark index and the near- and long-term historical performance of various market indices across asset classes.

Ms. Pugliese provided an update on the investment changes in the TIAA ORPHE noting the goal of providing the same low cost, passively-managed BlackRock fund options on the bundled TIAA ORPHE platform that are available in the unbundled DC Plans, where possible. She reminded the Committee that TIAA currently does not have the ability to use white label names and reviewed with the Committee the white label BlackRock fund names in the DCP (ICMA-RC) investment lineup that correspond to the formal BlackRock fund names in the TIAA investment lineup. She noted the need to use different BlackRock fund share classes in some instances due to constraints on the TIAA investment platform.

Ms. Pugliese provided an overview of total market values across the TIAA ORPHE proprietary investment fund options as of December 31, 2019, including the new TIAA RC contract and legacy GRA and RA contracts. She informed the Committee that assets in the RC contract represented about 10% of total TIAA propriety assets while assets in the GRA and RA legacy contracts represented roughly 90% of total proprietary assets across all TIAA contracts. She also noted the difference in asset figures reported out to the DCPAC going forward as it relates to investment assets monitored by the VRS Investment Department versus total plan assets reported by the DC Plans Administration Department.

Ms. Pugliese shared with the Committee the TIAA ORPHE performance report as of April 30, 2020, which reflects the new investment menu effective January 2020 and is based solely on investments offered in the TIAA RC contract.

Due to the remote meeting format, Ms. Pugliese noted that the 2020 Callan Defined Contribution Trends Survey was included in the appendix.

ADMINISTRATIVE REPORTS AND COMMUNICATIONS UPDATE

Kelly Hiers, DC Plans Administrator, provided an update on the VRS Defined Contribution Plans for the first quarter ending March 31, 2020. Ms. Hiers shared the total assets under management across all DC plans, as well as an overview of unique participant counts for the unbundled plans and recent plan adoptions.

DC Plans and Hybrid Plan Update

Ms. Hiers shared with the Committee recent plan adoptions and the COV 457 Plan annual outreach initiative to employers. She noted the goal of the outreach initiative and efforts to communicate to local employers the role of the supplemental retirement plan, available resources and points of contact.

Ms. Hiers also informed the Committee of other initiatives, including the new online withdrawal feature in Account Access for eligible plan participants and market volatility educational resources available on the DC Plans websites for participants. She shared the benefits and security features available to



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participants with online distributions, including faster processing times, confirmations and status updates, and a higher level of security. Ms. Hiers informed the Committee that educational resources related to volatile markets were refreshed and updated in response to COVID-19, including a recorded webinar, brochures and individual account reviews conducted by ICMA-RC field representatives.

Ms. Hiers provided an update on total assets and accounts in the COV 457 and Virginia Cash Match plans through March 31, 2020, as well as an overview of cash flow from the COV 457 and Virginia Cash Match plans. Ms. Hiers provided a review of total assets and accounts in the Hybrid Retirement Plan for the first quarter of 2020. She also presented an overview of the cash flow from the defined contribution component of the Hybrid Retirement Plan, including contributions, withdrawals and net cash flow. Ms. Hiers updated the Committee on the Hybrid 457 voluntary participation and contribution election rates for the first quarter of 2020, noting a voluntary participation rate of 87.1% as of March 31, 2020. She also shared that a large portion of hybrid plan members with a 1% voluntary contribution election on file as of March 16, 2020, were auto-escalated in 2017 and 2020. Ms. Hiers noted that auto-escalation occurs every three years, with the first auto-escalation in 2017.

Ms. Bishop shared the Virginia legislature has considered acceleration of the auto-escalation frequency based on analyses of the costs and impact to employers, members and the Commonwealth, but no action has been taken at this time. The Committee inquired if the desired goal was for auto-escalation to be more aggressive in terms of its frequency of occurrence or voluntary contribution amount. Ms. Bishop informed the Committee of discussions with key decision-makers that explained best practices such as automatic voluntary contribution enrollment, which is intended to help improve outcomes for members, but noted the resource constraints among employers as it relates to matching contributions as well as competing legislative priorities as factors that make changes to the auto-escalation frequency or amount more difficult at this time.

Ms. Hiers provided an overview of Auto Escalation 2020 statistics, highlighting that 93% of eligible members were auto-escalated by 0.5% on January 1, 2020, with only 1% of hybrid plan members choosing to opt-out of auto-escalation. She noted that as of April 1, 2020, 92% of the 79,751 hybrid plan members auto-escalated by 0.5% on January 1, 2020, remained at their auto-escalated voluntary contribution percentage.

Ms. Hiers shared that VRS was the recipient of the 2020 Communicator Award of Distinction for the Auto Escalation Campaign.

Ms. Hiers provided an overview of the 2019 ICMA-RC Annual Service Review Meeting held electronically on April 30 and May 11, 2020. She shared with the Committee that all 2019 performance standards were met and highlighted several topics, including participant contact, adoptions and conversions, participant education, technology and future initiatives.

Ms. Hiers informed the DCPAC of VRS DC Plans' participation with the Public Retirement Research Lab (PRRL), a collaboration between the National Association of Government Defined Contribution Administrators (NAGDCA) and the Employee Benefit Research Institute (EBRI) to create a national database for public sector defined contribution plan information.



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ORPHE Update

Ms. Hiers provided an overview by provider of total ORPHE assets, participants and average balances for the first quarter of 2020. She also gave an update on ORPHE provider selections and provider initiatives for the first quarter of 2020.

Ms. Hiers shared a timeline overview of changes to the ORPHE over the past six years, concluding with the recent ORPHE 2020 initiative.

Mr. Hayes thanked Ms. Hiers for her presentation.

OTHER BUSINESS

Legislative Update

Cindy Wilkinson, VRS Policy and Planning Director, provided an overview of key provisions of recently enacted federal legislation such as the SECURE Act and CARES Act, and their impact on VRS members, employers and retirees, and efforts underway to implement the various provisions. Ms. Wilkinson also provided an overview of the VRS-related bills approved during the 2020 legislative session of the General Assembly. She shared the approved 2020 budget changes and amendments with an impact to VRS. Ms. Wilkinson also informed the Committee of VRS-related bills that failed, were carried over or amended.

Mr. Hayes thanked Ms. Wilkinson for her presentation.

Ms. Seay exited the meeting prior to the next order of business.

DCPAC Appointment

Trish Bishop, VRS Director, informed the Committee of the request for reappointment of Ravindra Deo to a two-year term, ending June 20, 2022. His current term expires June 20, 2020.

Upon a motion by Ms. Irvin, with a second by Mr. Larson, the Committee unanimously concurs in the request for reappointment of Mr. Deo and moved to present the request to the Administration and Personnel Committee.

Mr. Hayes asked for each Committee member to vote on the motion:

Senator Bell - Aye

Ms. Irvin – Aye

Mr. Larson – Aye

Ms. Madden - Aye

Mr. Winter - Aye

Mr. Hayes – Aye



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RBA: REAPPOINTMENT OF DCPAC MEMBER

The Committee recommends approval of the following action to the Administration and Personnel Committee and the full Board:

Request for Board Action: The Board reappoints Ravindra Deo to the Defined Contribution Plans Advisory Committee (DCPAC) for a two-year term ending June 20, 2022.

UPCOMING DEFINED CONTRIBUTION PLANS ADVISORY COMMITTEE MEETINGS

Mr. Hayes confirmed the DCPAC meeting dates for 2020 following the polling of the Committee.

The next meeting of the DCPAC will take place August 27, 2020, from 1:00 p.m. to 4:00 p.m., with the remaining meeting on November 17th from 1:00 p.m. to 4:00 p.m. Also, for those Committee members who are interested, the ORPHE Annual Employer Update is scheduled for September 24th, as required by the DCPAC Charter, but is not a meeting of the Committee.

ADJOURNMENT

Mr. Bell made a motion to adjourn the meeting. Ms. Madden seconded the motion. Mr. Hayes asked for each Committee member to vote on the motion:

Senator Bell – Aye Ms. Irvin – Aye Mr. Larson – Aye Ms. Madden – Aye Mr. Winter – Aye Mr. Hayes – Aye

There being no further business, Mr. Hayes adjourned the meeting at 12:01 p.m.

Brett Hayes, Chair
Defined Contribution Plans Advisory Committee



DC Plans Investments
August 27, 2020



DCPAC Investment Duties and Responsibilities



- Review trends and identify best practices
- Assist staff in identifying potential asset classes and investment strategies
- Perform annual comprehensive review of investment program with emphasis on three and five year periods
- Review VRS DC Investment Belief Statements
- Review DC Plans Investment Policy Statements
- Provide recommendations to the Board as needed



Annual Investments Review Highlights



Annual Investments Review Highlights



- The complete annual investments review package is found in the Appendix
- Staff reviewed the VRS DC Plans Investment Belief Statements and does not have any recommended changes
- The two DC investment policy statements (unbundled & bundled) were updated January 2, 2020
- As of June 30, 2020 DC plans assets overseen by investment staff totaled \$4.9 billion (\$4.7 billion unbundled DC plans; \$239.3 million TIAA ORPHE

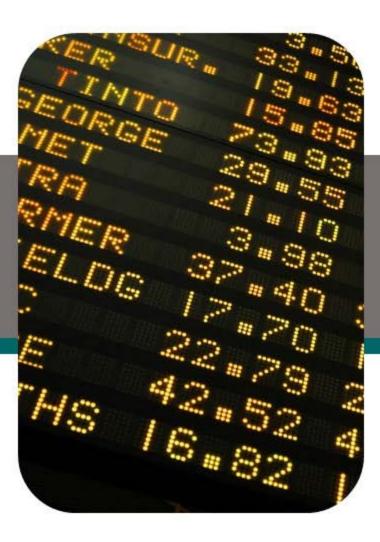
Annual Investments Review Highlights



- An unbundled DC plan structure provides investment staff with maximum flexibility whereas a bundled plan structure does not provide the same flexibility
 - TIAA operates as a bundled plan provider for the ORPHE
- No changes were made to the unbundled DC plans investment platform
- Staff successfully implemented material investment changes to the ORPHE
 - Completely revamped the TIAA investment program
 - Transitioned assets from Fidelity to ICMA-RC and TIAA investment platforms



Unbundled DC Plans



Unbundled DC Plans

Data for period ending June 30, 2020

				Returns			3 Year St	atistics			5 Year Stat	tistics	
		Fund Expense					Sharpe Ratio		Information Ratio	Standard Deviation		Tracking Error	Information Ratio
Fund	Туре	Ratio	1 Year	3 Years*	5 Years*								
		%	%	%	%	%		%		%		%	
Money Market Fund	Capital	0.08	1.64	1.93	1.36	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
FTSE 3 Month Treasury Bill Index	Preservation	_	1.56	1.72	1.15	n/a	n/a	n/a		n/a	n/a	n/a	
Excess Return			0.08	0.21	0.21								
Stable Value Fund 1	Capital	0.25	2.44	2.27	2.03	n/a			n/a	n/a	n/a	n/a	n/a
Custom Benchmark	Preservation	_	1.39	2.14	1.88	n/a	n/a	n/a		n/a	n/a	n/a	
Excess Return	(Book Value)		1.05	0.13	0.15								
eVestment Alliance Stable Value Fixed Income Universe ²			2.42	2.25	2.06								
Bond Fund	Passive	0.03	8.78	5.36	4.35	3.28		0.04	n/a			0.06	n/a
Bloomberg Barclays U.S. Aggregate Bond Index		<u> </u>	8.74	5.32	4.30	3.27	1.10			3.08	1.02		
Excess Return			0.04	0.04	0.05								
MSTAR Ave: IntermediateTerm Bond			7.89	4.84	3.90				,				,
Inflation-Protected Bond Fund	Passive	0.03	8.42	5.17	3.87	3.69		0.07	n/a			0.08	n/a
Bloomberg Barclays U.S. TIPS Index Excess Return			8.28 0.14	5.05 0.12	3.75 0.12	3.66	0.91			3.50	0.74		
MSTAR Ave: Inflation-Protected Bond			6.78	4.27	3.09								
High-Yield Bond Fund	Active	0.40	-1.48	3.16	4.64	8.66	0.17	1.09	-0.40	7.55	0.46	1.04	-0.12
ICE BofA U.S. HY BB-B Constrained Index	Active	0.40	0.52	3.10	4.77	8.26	_		-0.40	7.33		_	-0.12
Excess Return			-2.00	-0.45	-0.13	0.20	0.20			7.00	0.43		
MSTAR Ave: High-Yield Bond			-1.89	2.04	3.38								
Stock Fund	Passive	0.01	7.56	10.78	10.76	16.96	0.53	0.03	n/a	14.76	0.65	0.02	n/a
S&P 500 Index			7.51	10.73	10.73	16.95	0.53			14.76	0.65		
Excess Return			0.05	0.05	0.03								
MSTAR Ave: Large Blend			3.74	8.15	8.35								
Small/Mid-Cap Stock Fund	Passive	0.02	-4.66	4.11	5.51	22.39			n/a		0.23		n/a
Russell 2500 Index			-4.70	4.08	5.41	22.38	0.11			19.31	0.22		
Excess Return			0.04	0.03	0.10								
MSTAR Ave: Mid-Cap Blend	<u>.</u>		-6.19	2.41	3.86				,				,
International Stock Fund	Passive	0.06	-4.46	1.25	2.51	16.25	-0.03	1.21	n/a	14.80	0.09	1.46	n/a
MSCI ACWI ex-U.S. IMI Index (linked to MSCI World ex-U.S. Index prior to August 2016)			-4.74	0.96	2.22	16.27	-0.05			15.00	0.07		
Excess Return			0.28	0.29	0.29	10.27	-0.03			13.00	0.07		
MSTAR Ave: Foreign Large Blend			-4.66	0.30	1.79								
Global Real Estate Fund	Passive	0.09	-15.56	-0.86	2.19	17.77	-0.14	0.39	n/a	15.73	0.07	0.57	n/a
FTSE EPRA/NAREIT Developed Index		0.00	-16.25	-1.60	1.27	17.87	-		.,,	15.83		0.07	.,,
Excess Return			0.69	0.74	0.92								
MSTAR Ave: Global Real Estate			-12.52	0.18	2.05								

¹ Stable value funds typically track the general movements of interest rates with a lag. It is expected that when interest rates are falling, stable value yields do not fall as quickly and when interest rates are rising stable value yields do not rise as quickly.

² eVestment Alliance universe returns are gross of investment management fees and net of wrap fees. The Stable Value Fund returns are net of all fees.

Unbundled DC Plans

Data for period ending June 30, 2020

Data for period ending Julie 30, 2020				Returns			3 Year	Statistics			5 Year S	Statistics	
Fund	Туре	Fund Expense Ratio	1 Year	3 Years*	5 Years*		Sharpe Ratio	Tracking Error	Information Ratio	Standard Deviation	Sharpe Ratio	Tracking Error	Information Ratio
	•	%	%	%	%	%		%		%		%	
Retirement Portfolio Custom Benchmark Excess Return	Passive	0.08	6.15 6.00 0.15	5.84 5.78 0.06	5.23 5.18 0.05	7.00 6.99			n/a	6.10 6.11	0.67 0.66	0.18	n/a
Target Date 2025 Portfolio	Passive	0.08	4.88	6.07	5.77	9.29	0.47	0.23	n/a	8.34	0.55	0.28	n/a
Custom Benchmark Excess Return	Passive	0.08	4.88 4.74 0.14	5.99 0.08	5.69 0.08	9.29			n/a	8.34			n/a
Target Date 2030 Portfolio Custom Benchmark Excess Return	Passive	0.08	3.88 3.73 0.15	6.10 5.99 0.11	5.98 5.88 0.10	11.07 11.08			n/a	9.88 9.93			n/a
Target Date 2035 Portfolio Custom Benchmark Excess Return	Passive	0.08	2.93 2.80 0.13	6.11 5.99 0.12	6.18 6.05 0.13	12.78 12.79			n/a	11.36 11.41	0.44 0.43		n/a
Target Date 2040 Portfolio Custom Benchmark Excess Return	Passive	0.08	2.03 1.92 0.11	6.09 5.96 0.13	6.32 6.18 0.14	14.34 14.36			n/a	12.70 12.76		0.44	n/a
Target Date 2045 Portfolio Custom Benchmark Excess Return	Passive	0.08	1.49 1.37 0.12	6.06 5.91 0.15	6.40 6.23 0.17	15.46 15.50		0.43	n/a	13.62 13.69			n/a
Target Date 2050 Portfolio Custom Benchmark Excess Return	Passive	0.08	1.22 1.12 0.10	6.02 5.88 0.14	6.41 6.24 0.17	15.97 16.00		0.45	n/a	13.99 14.07			n/a
Target Date 2055 Portfolio Custom Benchmark Excess Return	Passive	0.08	1.24 1.11 0.13	6.02 5.87 0.15	6.41 6.24 0.17	16.01 16.06		0.45	n/a	14.02 14.11	0.37 0.36	0.50	n/a
Target Date 2060 Portfolio Custom Benchmark Excess Return	Passive	0.08	1.23 1.11 0.12	6.00 5.87 0.13	6.41 6.24 0.17	16.02 16.06	_	0.45	n/a	14.02 14.11	0.38 0.36		n/a

^{*}Annualized.

Data provided by BlackRock, Galliard, ICMA-RC, and Zephyr StyleADVISOR.

Unbundled DC Plans - Investment Option Costs Information as of June 30, 2020

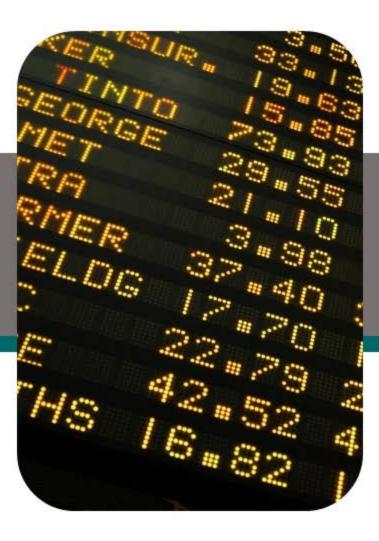
Investment Option ¹	Investment Manager	Туре	Investment Management Costs	Wrap & Acquired Fund ² Costs	Fund Embedded Costs ²	State Street Cost to Strike Net NAV	Investment Option Expense Ratio	Investment Option Expense Ratio YOY Change
Money Market Fund	BlackRock	Capital Preservation	0.080000%	n/a	0.000400%	n/a	0.08%	0.00%
Stable Value Fund Bond Fund	Galliard BlackRock	Capital Preservation (Book Value) Passive	0.066000% 0.030000%	0.179000% n/a	n/a 0.004000%			
Inflation-Protected Bond Fund	BlackRock	Passive	0.020000%		0.004000%			
High-Yield Bond Fund	JPMorgan	Active	0.380000%		0.010000%			
Stock Fund	BlackRock	Passive	0.007500%		0.001200%			
Small/Mid-Cap Stock Fund	BlackRock	Passive	0.015000%		0.003900%			
International Stock Fund	BlackRock	Passive	0.040000%		0.019500%			
Global Real Estate Fund	BlackRock	Passive	0.070000%		0.010000%			
Retirement Portfolio	BlackRock	Passive	0.070000%		0.006300%			
Target Date 2025 Portfolio	BlackRock	Passive	0.070000%		0.006700%	n/a		
Target Date 2030 Portfolio	BlackRock	Passive	0.070000%	n/a	0.007400%	n/a	0.08%	
Target Date 2035 Portfolio	BlackRock	Passive	0.070000%	n/a	0.008400%	n/a	0.08%	0.00%
Target Date 2040 Portfolio	BlackRock	Passive	0.070000%	n/a	0.009100%	n/a	0.08%	0.00%
Target Date 2045 Portfolio	BlackRock	Passive	0.070000%	n/a	0.009900%	n/a	0.08%	0.00%
Target Date 2050 Portfolio	BlackRock	Passive	0.070000%	n/a	0.010000%	n/a	0.08%	0.00%
Target Date 2055 Portfolio	BlackRock	Passive	0.070000%	n/a	0.010000%	n/a	0.08%	0.00%
Target Date 2060 Portfolio	BlackRock	Passive	0.070000%	n/a	0.010000%	n/a	0.08%	0.00%
Target Date 2065 Portfolio	BlackRock	Passive	0.070000%	n/a	0.010000%	n/a	0.08%	n/a
VRSIP	VRS	Active	n/a	n/a	n/a	n/a	0.59%	0.01%

¹ There are no short-term trading redemption costs associated with any of the investment options.

 $^{^{\}rm 2}$ Includes custody, audit and other specific investment option related administrative costs.



Bundled TIAA ORPHE



Bundled ORP for Higher Education - TIAA RC Contract¹

Data for period ending June 30, 2020

				Returns			3 Year St	atistics			5 Year Sta	tistics	
		Fund				Standard	Sharpe	Tracking	Information	Standard	Sharpe	Tracking	Information
		Expense				Deviation	Ratio	Error	Ratio	Deviation	Ratio	Error	Ratio
Fund	Туре	Ratio	1 Year	3 Years*	5 Years*	(%)				(%)			
		%						%		%		%	
BlackRock Equity Index Fund J	Passive	0.01	7.56	10.78	10.76	16.96			n/a	14.76	0.65	0.02	n/a
S&P 500 Index			7.51	10.73	10.73	16.95	0.53			14.76	0.65		
Excess Return			0.05	0.05	0.03								
MSTAR Ave: Large Blend			3.74	8.15	8.35								
BlackRock Russell 2500 Index Fund M	Passive	0.04	-4.67	4.11	5.51	22.39			n/a	19.31	0.23	0.08	n/a
Russell 2500 Index			-4.70	4.08	5.41	22.38	0.11			19.31	0.22		
Excess Return			0.03	0.03	0.10								
MSTAR Ave: Mid-Cap Blend			-6.19	2.41	3.86								
BlackRock MSCI ACWI ex-U.S. IMI Index Fund M	Passive	0.11	-4.52	1.21	2.54	16.25	-0.03	1.20	n/a	14.84	0.09	1.34	n/a
MSCI ACWI ex-U.S. IMI Index			-4.74	0.96	2.30	16.27	-0.05			15.02	0.08		
Excess Return			0.22	0.25	0.24								
MSTAR Ave: Foreign Large Blend			-4.66	0.30	1.79								
BlackRock MSCI ACWI IMI Index Non-Lendable Fund M	Passive	0.05	1.42	5.91	6.51	16.66	0.25	0.56	n/a	14.70	0.36	0.63	n/a
MSCI ACWI IMI Index			1.17	5.55	6.11	16.72				14.82	0.33		
Excess Return			0.25	0.36	0.40								
MSTAR Ave: World Stock			1.83	5.55	6.04								
TIAA Real Estate Account	Active	0.78	0.99	3.75	4.42	1.71	1.17	1.86	0.06	1.48	2.19	1.60	-0.40
Custom Composite Benchmark	1		-0.35	3.62	5.05	2.58	0.73			2.33	1.66		
Excess Return			1.34	0.13	-0.63								

^{*}Annualized

Funds with revenue sharing within the RC contract.

Jnderperformance

Data provided by TIAA, BlackRock, ICMA-RC, VRS and Zephyr StyleADVISOR.

¹ Refer to the unbunded DC plans for information regarding BlackRock's LifePath Index Funds O, Short-Term Investment Fund W, U.S. Debt Index Fund M and U.S. TIPs Fund M. Although the unbundled DC plans use white label fund names and TIAA does not these funds are the same exact funds.

Bundled ORP for Higher Education - TIAA RC Contract Investment Option Costs^{1,2} Information as of June 30, 2020

	Investment Manager	Туре	Investment Management	Administration	Distribution	•	Acquired Fund Costs	Other	Option Expense	Investment Option Expense Ratio YOY Change
TIAA Traditional Annuity	TIAA	Fixed Annuity	n/a	0.150000%	n/a	n/a	n/a	0.340000%	0.49%	0.00%
TIAA Real Estate Account	TIAA	Active	0.250000%	0.180000%	0.105000%	0.005000%	n/a	0.240000%	0.78%	-0.05%
BlackRock Equity Index Fund J	BlackRock	Passive	0.010000%	n/a	n/a	n/a	n/a	0.002100%	0.01%	n/a
BlackRock Russell 2500 Index Fund M	BlackRock	Passive	0.030000%	n/a	n/a	n/a	n/a	0.005600%	0.04%	n/a
BlackRock MSCI ACWI ex-U.S. IMI Index Fund M	BlackRock	Passive	0.090000%	n/a	n/a	n/a	n/a	0.020000%	0.11%	n/a
BlackRock MSCI ACWI IMI Index Non-Lendable Fund M	BlackRock	Passive	0.040000%	n/a	n/a	n/a	n/a	0.010000%	0.05%	n/a

¹ There are no short-term trading redemption costs associated with any of the investment options.

Funds with revenue sharing within the TIAA RC contract.

Percentage of Embedded Record-Keeping and Plan Administration Costs

Investment Option		Administration	Investment	% of Record- Keeping & Plan Administration Costs
TIAA Traditional Annuity	Fixed Annuity	0.150000%	0.49%	31%
TIAA Real Estate Account	Active	0.180000%		23%

TIAA Plan Services Expense Amounts Returned to Participants (7/1/2019 - 6/30/2020)

Investment Option	Dollar Amounts
TIAA Traditional Annuity	\$20,959
TIAA Real Estate Account	\$14,370

² Refer to the unbunded DC plans for information regarding BlackRock's LifePath Index Funds O, Short-Term Investment Fund W, U.S. Debt Index Fund M and U.S. TIPs Fund M. Although the unbundled DC plans use white label fund names and TIAA does not these funds are the same exact funds.



VRS Defined Contribution Plans

2nd Quarter 2020
(April - June)
Administrative Summary
August 27, 2020



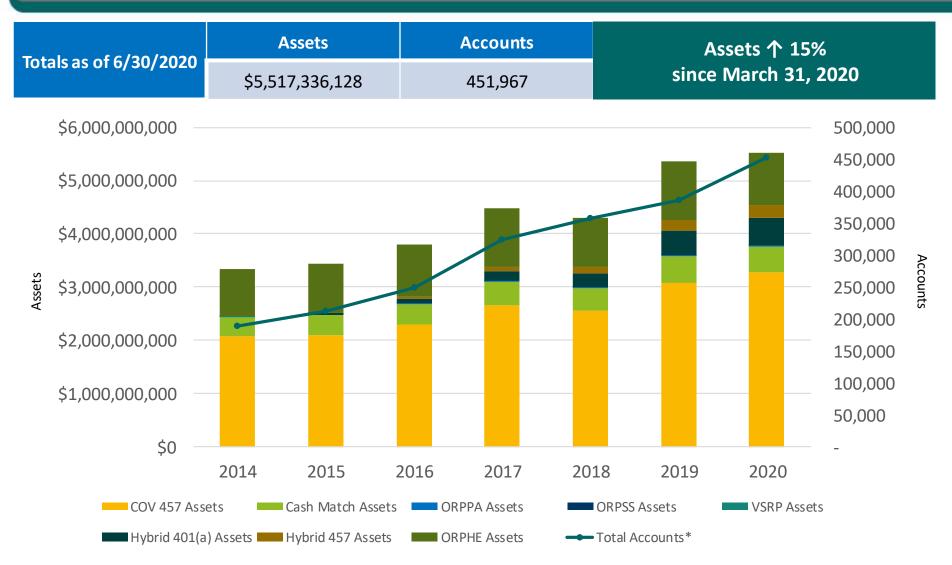
Agenda



Topic	Slide Number(s)
Total Assets & Accounts	3-4
Unbundled Plans Overview	5-7
COV 457 & Cash Match Plans	8-9
Hybrid Retirement Plan	10-14
Focus: Asset Retention	15-26
ORPHE Overview	27-29

Total Assets and Accounts Over Time





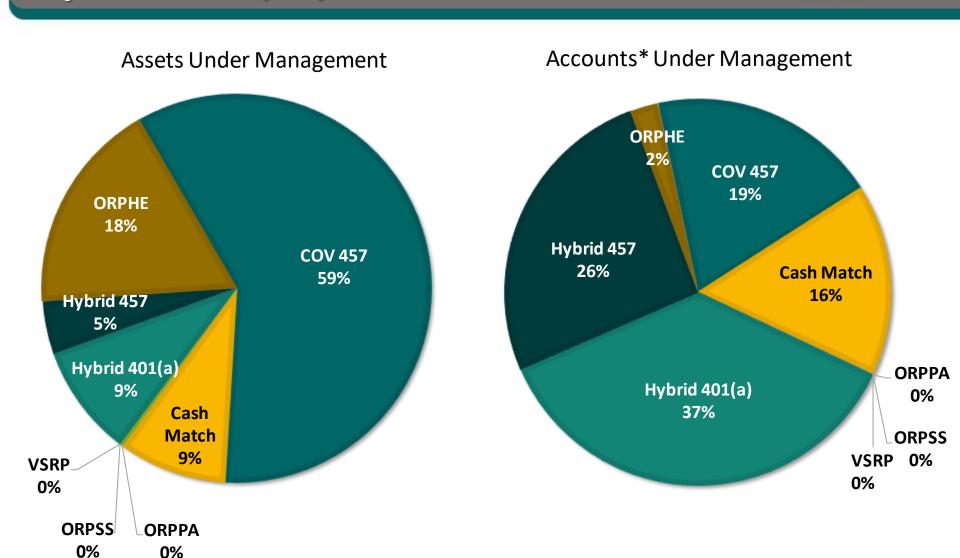
Note: Data reflects totals as of calendar year end and includes ORPHE selected providers and ICMA-RC participant, beneficiary, forfeiture & reserve accounts.

2020 data is thypush lupe 30 # 020 of 182 - Defined Contribution Plans Advisory Committee (DCPAC) Meeting 8/27/2020

*Does not indicate unique participants.

Total Assets and Accounts Under Management by Plan as of 6/30/2020



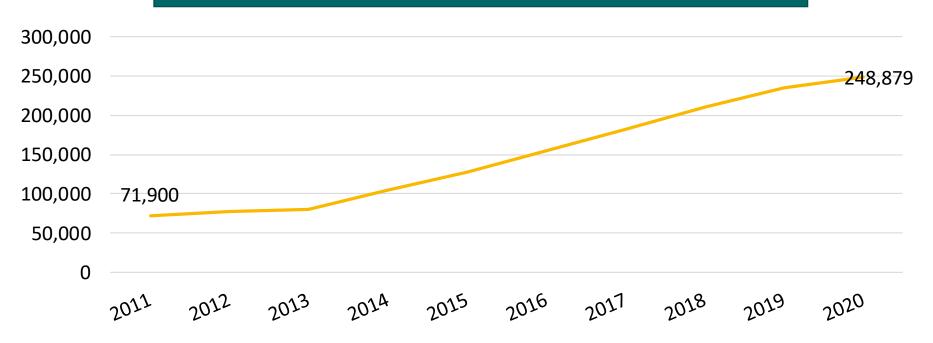


Master Page # 23 of 182 - Defined Contribution Plans Advisory Committee (DCPAC) Meeting 8/27/2020 *Does not indicate unique participants.

Unbundled Plans - Unique Participants as of 6/30/2020



Significant growth continues in the unbundled plans, primarily due to new hires into the Hybrid Retirement Plan.



Plans Included:

- COV 457 Plan
- VA Cash Match Plan
- Hybrid 401(a) Cash Match Plan
- Hybrid 457 Deferred Compensation Plan
- ORP for Political Appointees
- ORP for School Superintendents
- VA Supplemental Retirement Plan
- ORP for Higher Education (DCP option ONLY)



Unbundled Plans – Plan Adoptions



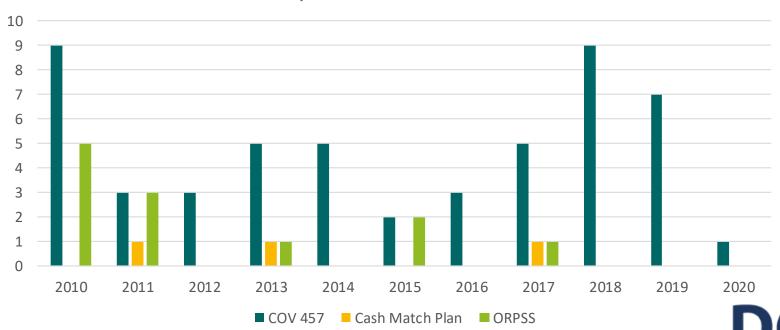
Adoption Agreements Requested

Orange County (COV 457)

New VRS Employers (Hybrid Plan only)

- Town of West Point Public Schools (administrative employees) 5/1/2020
- Town of Occoguan 6/01/2020
- Peanut Soil and Water Conservation District- 6/01/2020

Adoption Totals Over Time



Unbundled Plans – Plan Adoptions



Plan Adoption webpage is now live.

- Designed to answer questions about the COV 457 adoption process.
- Provides a one-stop shop for resource materials showing the employer benefits of adopting the COV 457 Plan.
- Can be shared easily in employer facing communications
- Materials include:
 - Plan benefits infographic
 - FAQ
 - Participating employers
 - Plan materials



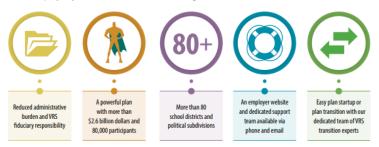
Adopt the Commonwealth of Virginia 457 (COV 457) Deferred Compensation Plan

The COV 457 Plan offers best in class features.

Here are some of the features your employees will enjoy.



As an employer, you'll benefit from the following:

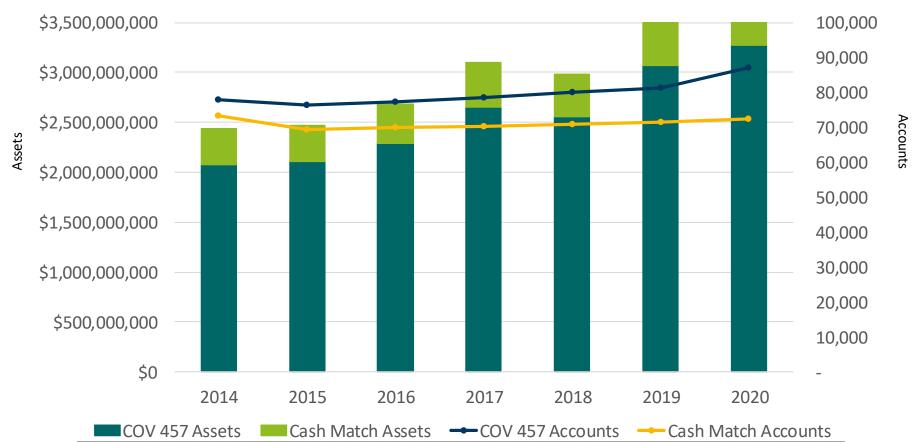


COV 457/Cash Match Plan Assets and Accounts



Totals as of 6/30/2020	Assets	Accounts
COV 457	\$3,271,494,038	87,033
Cash Match	\$493,196,551	72,351

Assets ↑ 13% since March 31, 2020

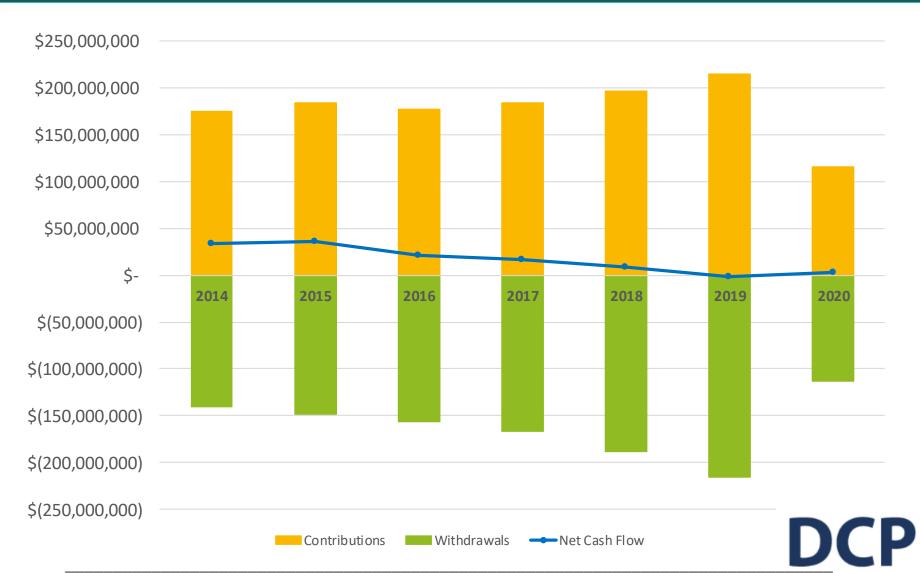


Master Page # 27 of 182 - Defined Contribution Plans Advisory Committee (DCPAC) Meeting 8/27/2020

Note: Data reflects totals as of calendar year end and includes ICMARC participant, beneficiary, & reserve accounts. 2020 data is through June 30, 2020.

COV 457/Cash Match Plan Cash Flow



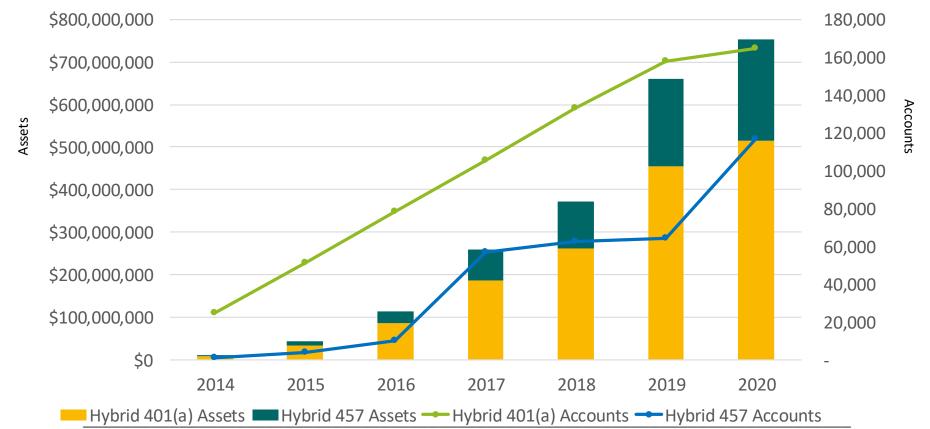


Hybrid Retirement Plan Assets and Accounts (DC only)



Totals as of 6/30/2020	Assets	Accounts
Hybrid 401(a)	\$514,439,428	164,834
Hybrid 457	\$239,688,933	116,758

Assets 个 28% Accounts 个 1% since March 31, 2020

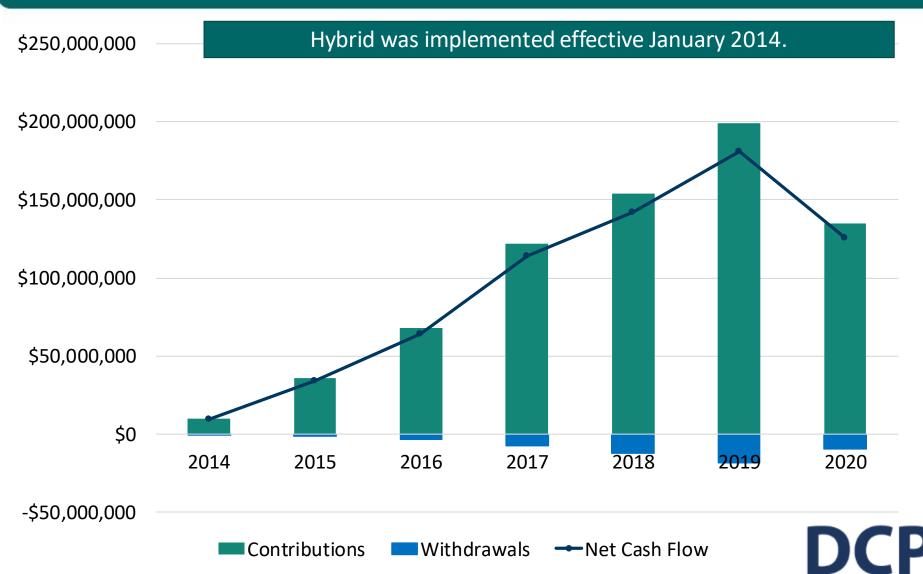


Master Page # 29 of 182 - Defined Contribution Plans Advisory Committee (DCPAC) Meeting 8/27/2020

Note: Data reflects totals as of calendar year end and includes ICMA-RC participant, beneficiary & forfeiture accounts. 2020 data is through June 30, 2020.

Hybrid Retirement Plan Cash Flow (DC only)

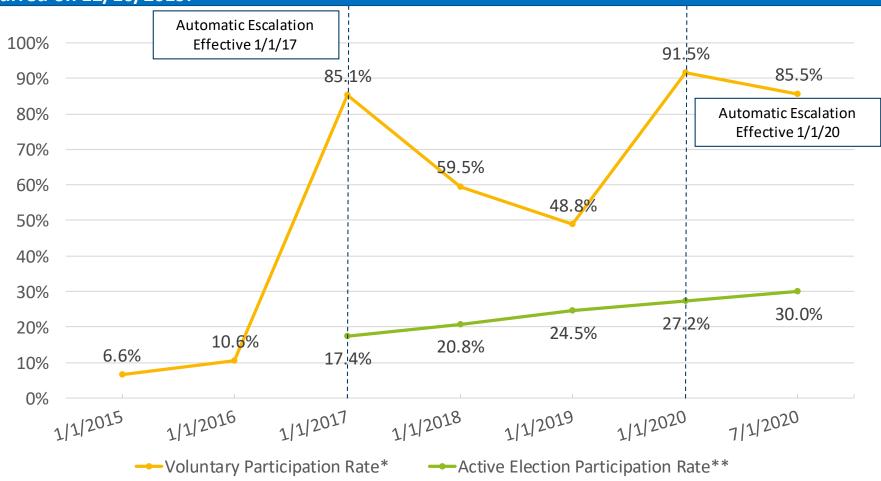




Hybrid 457 Plan – Voluntary Participation Rate*



As of 6/30/2020, 86% of hybrid plan members (101,145 out of 118,288) have a voluntary contribution percentage with ICMA-RC. 30% made an 'Active Election' outside of the automatic escalation that occurred on 12/16/2019.

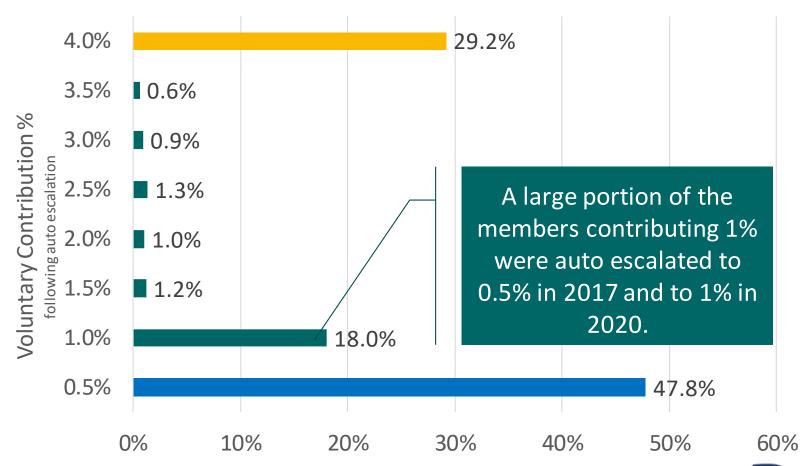


^{*}Except for quasticularities of the state of

Hybrid 457 Plan - Voluntary Contribution Elections



Active members with a voluntary contribution election on file as of June 15, 2020.



2020 Auto-Escalation Status



86%

(68,738)*

People <u>remained</u> at their auto-escalated voluntary %

79,751

People auto-escalated by 0.5% effective 1/1/2020

6%

(4,425)*

People <u>increased</u> their voluntary %

4% of total (3,040)*

People <u>increased to 4%</u>

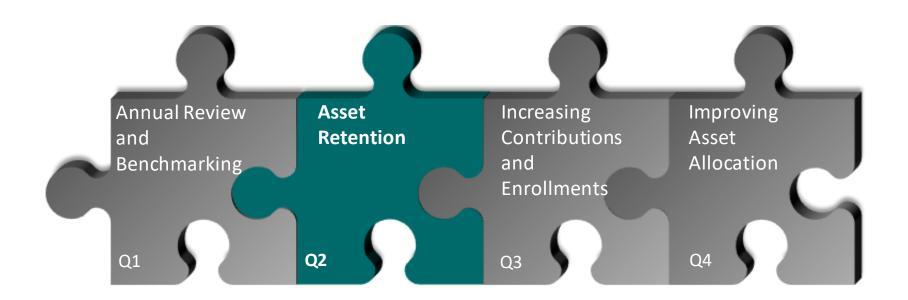
1%

(951)*

People who <u>decreased</u> their voluntary %

Asset Retention





Asset Retention

- Asset retention metrics
- Assets by employment status
- Distribution types
- Unforeseen Emergency Withdrawals
- Coronavirus-Related Distributions

Asset Retention Metrics



What is plan leakage?

- Considered leakage:
 - Rolled out to a competitor
 - 100% lump sum distribution

- Not considered leakage:
 - Any in-service distributions
 - De Minimis distributions
 - UEW that depleted assets
 - Auto-enroll opt-outs
 - Service credit purchases typically active employees purchase service credits so they would not be captured in the leakage number.
 - Installment payments this is how you want to see participants take their money

January 1

- Include participants who:
 - Terminated employment in the previous year
 - Had at least \$1K in assets at

December 31

- Look at participants who:
 - Took a 100% lump distribution or rolled out assets that depleted their

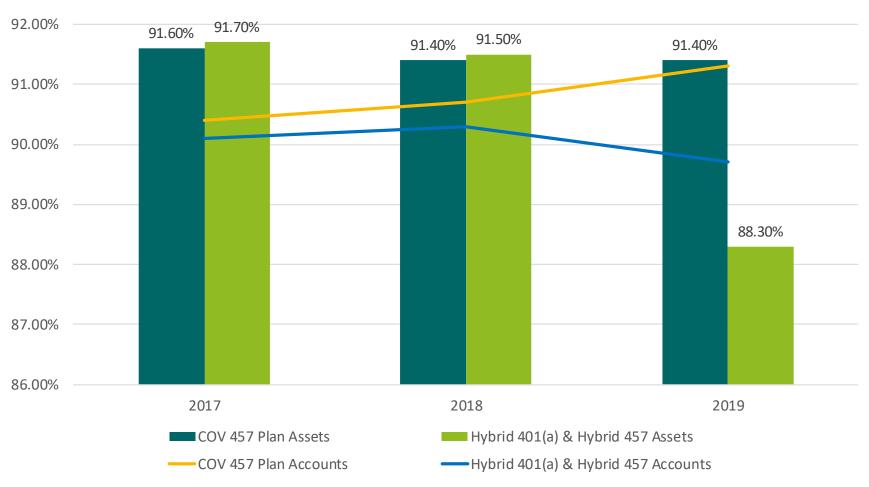
the beginning of the year account balance
Master Page # 35 of 182 - Defined Contribution Plans Advisory Committee (DCPAC) Meeting 8/27/2020

Asset Retention Metrics (unbundled plans only)





Retention Results

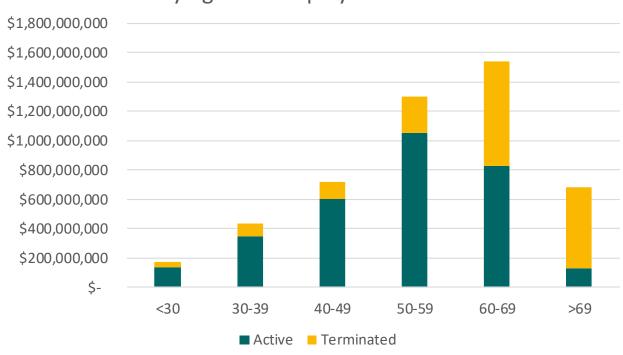


Assets by Employment Status



Assets belonging to participants that have terminated are more likely to leave the plan.

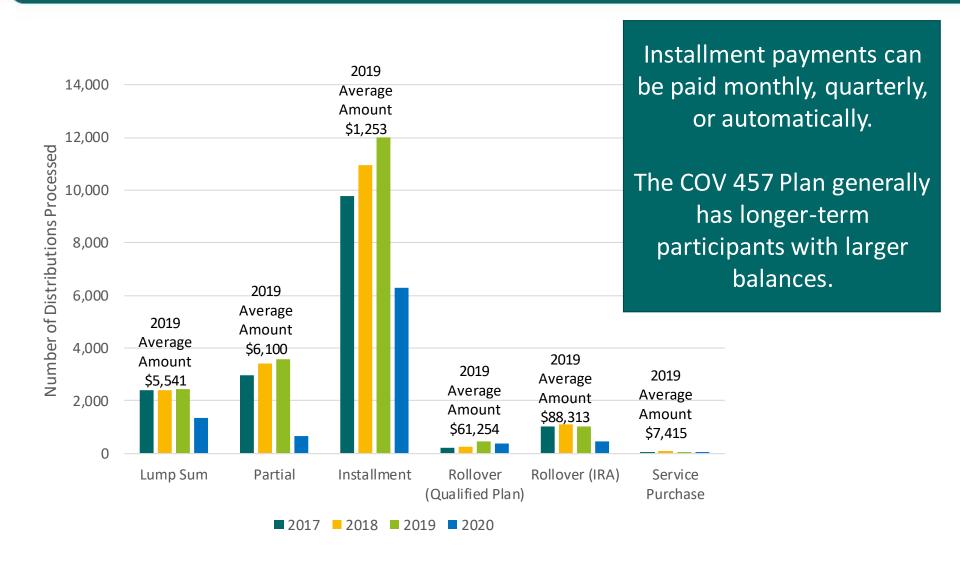
Assets Across All Unbundled Plans By Age and Employment Status



	Assets
Active Participants	64%
Terminated Participants	36%

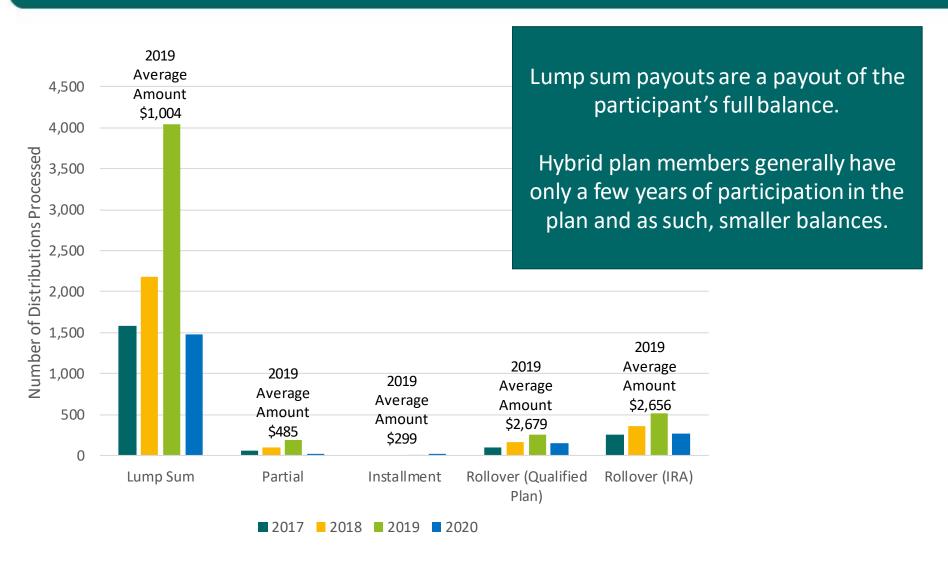
Asset Retention Distribution Types – COV 457 Plan





Asset Retention Distribution Types – Hybrid 401(a) Plan





Asset Retention – Incoming and Outgoing Rollovers (1/1/15-7/31/2020)



Incoming Rollovers Total-\$159,142,154

Up 11% from 2019

Outgoing Rollovers – Total (\$572,097,086) Up 5% from 2019

COV 457 -**\$78,566,015**

Cash Match -**\$45,023,921**

Hybrid 457 - \$35,552,217

COV 457 – (**\$494,976,861**)

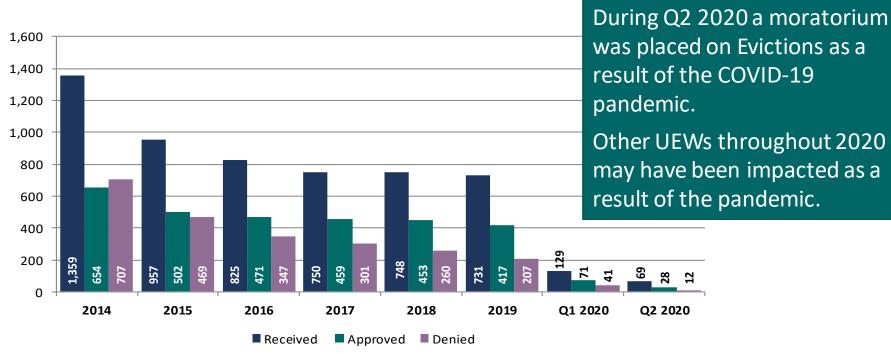
Cash Match – (**\$67,325,266**)

Hybrid 457 – (**\$4,964,023**)

Hybrid 401(a) – (**\$4,830,935)** Since 2015, over 70% of COV 457 outgoing rollovers have gone to an Individual Retirement Account.

Unforeseeable Emergency Withdrawals





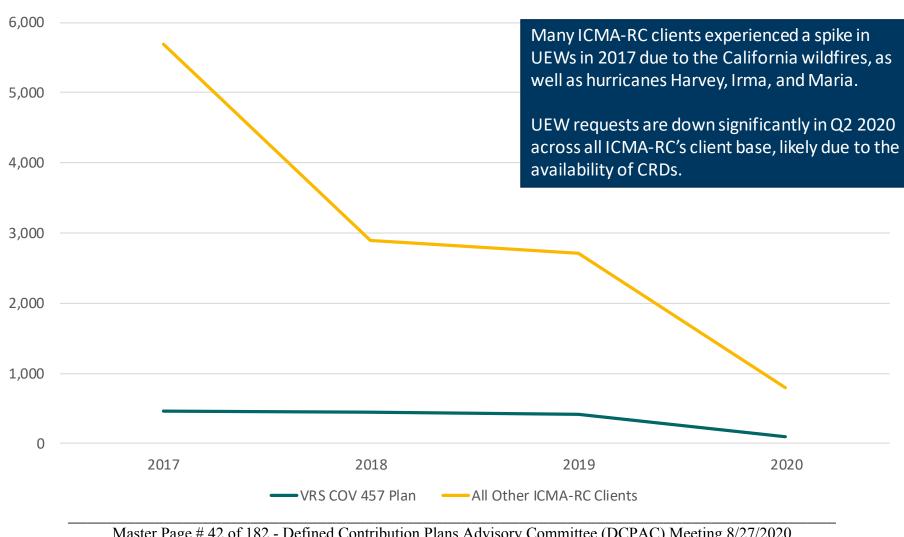
	Withdrawals Approved and Paid											
Withdrawal Reason	2015	2016	2017	2018	2019	Q1 2020	Q2 2020					
Eviction	121	118	98	103	122	23	1					
Foreclosure	48	52	50	29	24	4	2					
Funeral Expenses	14	14	11	9	12	2	0					
Lost Wages*	0	0	5	29	33	7	4					
Medical Bills	312	279	288	269	215	34	21					
Property Damage	7	8	7	14	11	1	0					
Total Paid	502	471	459	453	417	71	28					

^{*}New category added in October 2017.
Master Page # 41 of 182 - Defined Contribution Plans Advisory Committee (DCPAC) Meeting 8/27/2020 as of 06/30/2019
Note: Data for 2020 is through June 30, 2020. All other data for the full calendar year.

Unforeseen Emergency Withdrawals



Unforeseen Emergency Withdrawal Trends



Coronavirus-Related Distributions (CRDs)



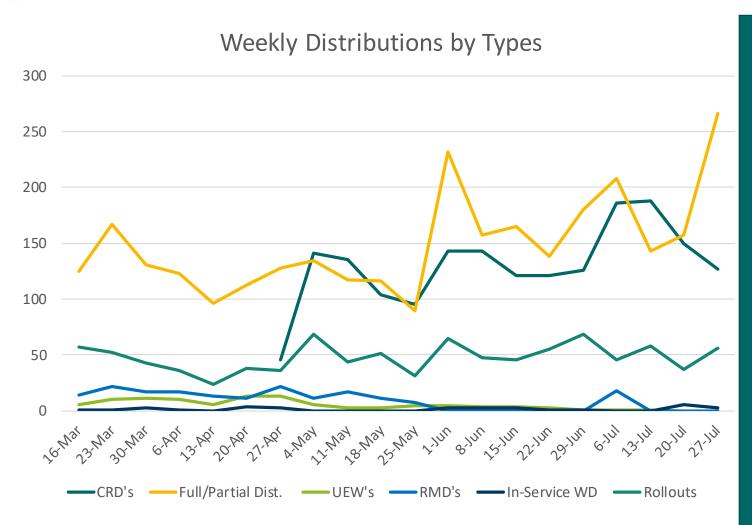
\$10,353,942 withdrawn across 2,106 distributions

- 92% from active participants
- Amounts ranged from \$13.00 to \$100,000.00
- Over 50% from the COV 457 Plan

- 1,188 unique participants
- Over 70% have a salary under \$50,000
- Average age 48

Current Distribution Activity





Full/Partial distribution activity has been relatively normal.

CRDs have been a driver for distributions during the pandemic.

UEWs have decreased significantly since CRDs became available.

Asset Retention Efforts



Recent Updates

- Online Distributions Lump Sum, Partial Sum, and Installments available
- Updated RMD Checklist

Upcoming Resources

- New Managing Retirement Income webinar
- Turn Your Savings Into Income flyer
- Bridging the Gap Retiree brochure
- Separate Rollover/Transfer Distribution
 Form



RMD Steps

VRS Defined Contribution Plans

Required minimum distributions (RMDs) refer to IRS rules that mandate you withdraw minimum yearly amounts from your retirement accounts. Understanding your RMDs helps ensure you follow the tax rules and manage your tax bills. RMDs are waived for 2020 and 2019, due to the CARES Act passed March 27, 2020, in response to COVID-19.

1. Know When to Take RMDs Age 72. You must typically begin taking RMDs in the year you turn age 72, regardless of whether you need the money, or be subject to a tax.

Still working past age 72? You may generally delay RMDs for retirement plans sponsored by your current employer until the year you retire. This exception does not apply to plans sponsored by former employers or to IRAs.

Evaluate whether to move money to your current employer's plan from other eligible
retirement accounts to maximize the amount of assets for which you can delay RMDs.
Participants that are working in a wage position are not required to take a RMD from the
Commonwealth of Virginia 457 Deferred Compensation Plan while working for an employer
that offers the plan. However, they are required to take a RMD from the Virginia 401 (a) Cash
Match Plan, should they have a balance from previous employment.

You may delay your first year's RMD until April 1 of the following year. A delay means you must take two RMDs that following year.

Estimate the tax bills for each year to see if it makes economic sense to delay.
 Take them each year. Subsequent RMDs must be withdrawn yearly by December 31.

Know Which
Accounts Apply

If still working for a participating employer, you are not required to take a RMD from the Commonwealth of Virginia Defined Contribution 457 Plan. Wage employees that are still working, are required to take a RMD from the Virginia 401(a) Cash Match Plan.

RMDs apply to employer-sponsored 457, 401, and 403(b) retirement plans and traditional IRAs, but not Roth IRAs.

- Note: Roth assets you own in a 457 or 401 plan are subject to RMDs if you don't need the
 money, explore transferring those assets to a Roth IRA.
- · Inherited Roth IRA assets are subject to RMDs

If you have multiple retirement accounts, you must calculate your RMD from each, but whether you must take an RMD from each depends on:

- · If you have multiple IRA accounts you may take a combined RMD from just one IRA account.
- If you have multiple 403(b) plan accounts, you may take a combined RMD from just one 403(b) account
- You must take a separate RMD from each 401 and 457 employer retirement plan account.
- · You cannot apply an employer retirement plan RMD towards an IRA RMD or vice-versa.
- Amounts representing your RMD cannot be rolled over, or transferred, to another retirement account, or converted to Roth assets.

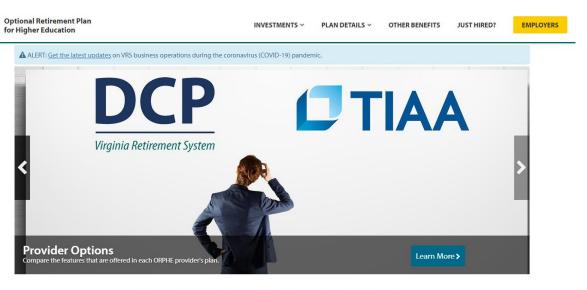
3.
Calculate How Much

Calculate RMDs each year. The required amount is calculated by dividing the account value as of December 31 of the previous year by your life expectancy, which is based on your age as of December 31 of the *current* year.

Administrative Summary ORPHE



ORPHE Totals*										
	3/31/2020	6/30/2020	% Change							
Assets	\$874,533,781	\$979,324,405	12%							
Participants	10,801	10,604	-2%							
Average Balance	\$80,968	\$92,354	14%							



Welcome to the Optional Retirement Plan for Higher Education (ORPHE).

Take this opportunity to lay the foundation for your retirement.

Administrative Summary ORPHE



DCP			
	3/31/2020	6/30/2020	% Change
Assets	\$99,369,516	\$114,903,874	16%
Participants	2,430	2,272	-7%
Average Balance	\$40,893	\$50,574	24%

TIAA*			
	3/31/2020	6/30/2020	% Change
Assets	\$775,164,265	\$864,420,531	12%
Participants	8,371	8,332	0%
Average Balance	\$92,601	\$103,747	12%

Deselected	Providers**		
	3/31/2020	6/30/2020	% Change
Assets	\$116,871,031	\$136,903,821	17%
Participants	1,566	1,545	-1%

26% are active*

^{*}Includes assets in GRA/RA and RC contracts.

^{**}Fidelity became the propine of pairs and a sactively employed with an opt-in higher education institution and covered by ORPHE.

Ongoing ORPHE Initiatives



Annual Fee Disclosure

- Mailed week of June 22 26
- Distributed by TIAA, ICMA-RC, and VRS
- Letter campaign to participants with Fidelity Deselected Fund Balance mailed to approximately 417 participants

Employer Outreach

- Provide high level overview of the plan
- Provide employer-level plan/provider election data
- Review of transition highlights
- Gather feedback



Optional Retirement Plan for Higher Education Annual Fee Disclosure Notice

OVERVIEW

Understanding retirement plan fees can be challenging, yet, the fees you pay for plan administration and the investments you have chosen for your Optional Retirement Plan for Higher Education (ORPHE) account impact the amount of money you have at retirement. Although not required for governmental plans, the Virginia Retirement System (VRS), as the ORPHE plan administrator, is following the spirit of the annual fee disclosure notice regulations issued by the U.S. Department of Labor (DOL) by providing this annual fee disclosure notice.*

PROVIDERS AND INVESTMENTS

As an ORPHE participant, you have a choice of two providers: TIAA and DCP (record kept by ICMA-RC). Each provides record-keeping and administrative services, along with a range of diversified and distinct investment options to allow participants to create a portfolio with varied risk and return characteristics. VRS monitors the investment options and the services these companies provide to employers and participants and makes changes to program services and investment options on a periodic basis.

A summary of your provider options is available online. The summary provides a high-level overview of each provider's offerings, including the number of available investments, default investment and fees.

UNDERSTANDING RETIREMENT PLAN FEES

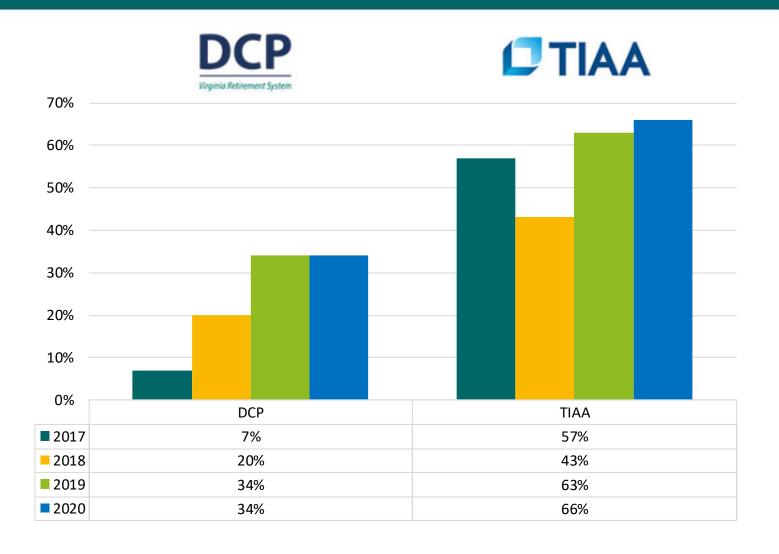
A portion of the operating costs associated with retirement plans, products and services are passed along as fees to plan participants. These fees may seem small, but over time they can have a major impact on your investment portfolio. The long-term cumulative effect of fees and expenses on retirement savings can be substantial. Consider how just a 1 percentage point difference in fees could affect your account balance over time:



1% increase in fees equals \$201,873 less in account at age 65 Examples provided by Mercer for illustrative purposes only.

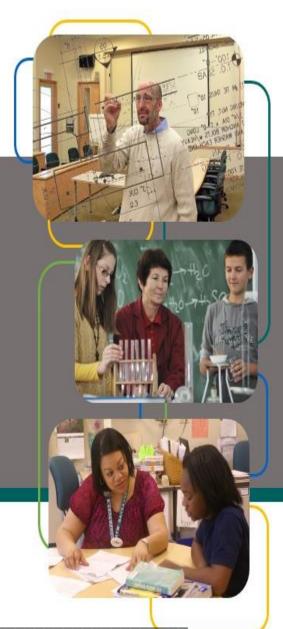
Administrative Summary ORPHE New Hire Provider Selections







Thank You!





Governing Documents Update

Presentation to DCPAC August 27, 2020



Governing Documents – DC and Hybrid Plans



Master Trusts

- 457 Plan (includes Hybrid)
- Optional Retirement Plan for Higher Education (ORPHE) (§ 401(a))
- Other 401(a) Plans:
 - Cash Match Plan
 - Optional Retirement Plan for Political Appointees (ORPPA)
 - Optional Retirement Plan for School Superintendents (ORPSS)

Plan Documents for Defined Contribution Plans

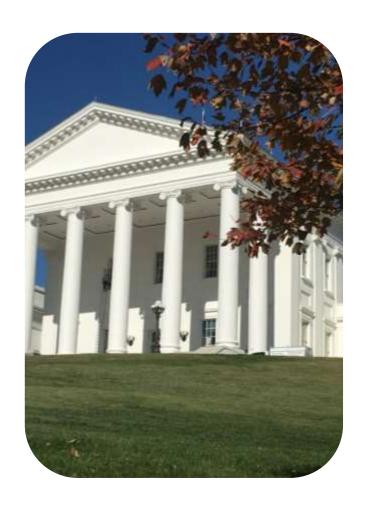
- 457 Plan (includes Hybrid until 12/31/2020)
- Cash Match Plan (includes Hybrid until 12/31/2020)
- ORPHE
- ORPPA
- ORPSS
- Separate Hybrid 457 Plan
 Document (effective 1/1/2021)
- Separate Hybrid Cash Match
 Plan Document (effective
 1/1/2021)

Governing Documents – Defined Benefit Plans



Plan Document for Defined Benefit Plans

The governing document for the defined benefit plans is Title 51.1 of the *Code of Virginia*.



Why Plan Documents?



Master Trust – The Internal Revenue Code (IRC) and Article X, § 11 of the *Constitution of Virginia* (1971) require that plan assets be held in trust to ensure that all contributions to the underlying plan(s) and the income thereon are held for the exclusive benefit of participants and their beneficiaries.

The VRS Board of Trustees establishes compliance through a master trust for the 457 plan assets, a master trust for ORPHE assets and a master trust for the other 401(a) plans (Cash Match, ORPPA, ORPSS).



Why Plan Documents?

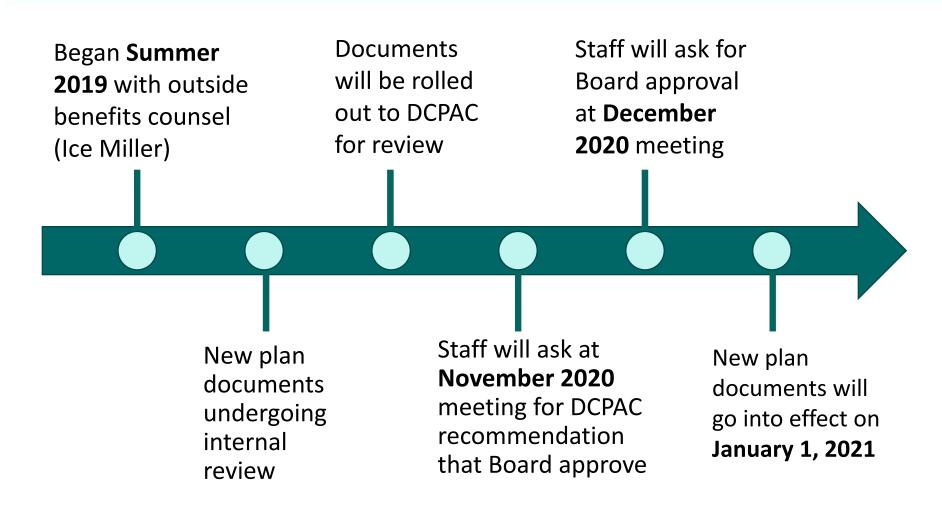


Individual Plan Document – Contains the material terms and conditions for benefits under the plan as well as optional features that may not be required for plan eligibility (but still must comply with IRC § 457 or § 401(a) as applicable). These terms, conditions and features make the plans specific to VRS.



Plan Document Revision/ Restatement Project Timeline





Goals of Review



- Employ current best practices in plan document structure
- Streamline current plan documents for readability
- Ensure compliance with recent federal statutory and regulatory provisions
- Simplify plan documents by unwinding the previously combined plan documents for the Commonwealth 457 and Cash Match Plans with the Hybrid Plan DC plans
- Deploy more standardized plan document templates thereby limiting extensive customization

Summary of Document Changes



- Hybrid provisions were added to the two existing plan documents (457 and Cash Match) in 2014. This has proven to be unwieldy in administration, so there are now four plan documents: 457; Hybrid 457; Cash Match; and Hybrid Cash Match.
- To reflect the mandatory provisions of the SECURE Act that was signed into law in December 2019, such as the age change for required minimum distributions.



Summary of Document Changes



- New mandatory cash-out and stale distribution check procedures to align with current industry best practices.
- Minor edits to the master trust documents to accommodate the addition of the separate Hybrid 457 Plan document and the separate Hybrid Cash Match Plan document.



Note: Redline changes to existing plan documents would not be helpful since the new documents reflect a complete revamping and update to many plan provisions.



Questions?

Virginia Retirement System



DC Plans Advisory Committee Annual Investment Review August 27, 2020

Virginia Retirement System DC Plans Advisory Committee Investment Department – Annual Review 2020

Overview

The Defined Contribution Plans Advisory Committee (DCPAC) is an advisory committee with the purpose of reviewing matters relating to or affecting the plan administration, plan design, and investments of the various defined contribution (DC) plans established pursuant to the Code of Virginia and to make recommendations to the Board regarding those matters. The DCPAC's recommendations are not binding on the Board and the DCPAC has no authority over staff or administrative and investment decisions.

The Committee Charter outlines several responsibilities to be performed by the DCPAC. Investment responsibilities include:

- Reviewing national trends and identifying best practices;
- Assisting staff with identifying potential asset classes and investment strategies and recommending changes to the Board as needed;
- Performing an annual comprehensive review of the investment program for each plan with an emphasis on longer time frames, such as 3 and 5 years but shorter-term trends are also considered if they are significant. The DCPAC may provide recommendations to the Board regarding any investment options that should be considered for addition or deletion as well as informing the Board of any significant performance issues as appropriate; and
- Periodically, reviewing the Investment Policy Statements for the VRS DC plans and the VRS DC Plans Investment Belief Statements and recommending any changes to the Board.

The purpose of this annual review is to provide the DCPAC with investment information needed to perform its annual comprehensive review of the investment program for each plan. Please refer to subsequent sections of this package for performance information that covers the periods ending June 30, 2020.

As of June 30, 2020 DC plan assets for those investments overseen by investment staff totaled \$4.9 billion (unbundled plans: ~\$4.7 billion; bundled TIAA ORPHE ~\$239.3 million). Each program offered the following number of investment options*:

- Unbundled DC Plans: Eleven* investment options and a self-directed brokerage option;
- ORPHE TIAA: Ten investment options and a self-directed brokerage option; and

*Target date portfolio series are counted as one investment option. If each target date portfolio is counted separately there are a total of 20 core investment options within the unbundled DC plans and 19 core investment options within the bundled TIAA ORPHE.

Unbundled DC Plan Structure

An unbundled DC plan structure provides investment staff with maximum flexibility to add or delete investment options as appropriate in an efficient manner. This fully open architecture approach enables investment staff to contract directly with investment managers. The unbundling of investment contracts from plan recordkeeping / administration contracts is considered to be a best practice within the DC industry and is in line with VRS DC Investment Belief Statements.

Most DC plans administered by VRS operate in a fully unbundled plan structure. The exception is the Optional Retirement Plan for Higher Education (ORPHE) where one of the two plan program providers operate under a bundled plan structure.

No changes were made to unbundled DC plans investment platform this past fiscal year. Detailed information about the unbundled DC plans investments is included in subsequent sections of this package.

Bundled DC Plan Structure

A bundled DC plan structure does not provide investment staff with maximum flexibility to add or delete investment options as appropriate in an efficient manner and is not the preferable structure. Constraints within a bundled plan construct may limit the scope of available investment options and may limit access to more attractive options within asset classes.

TIAA, one of the providers for the ORPHE, is structured in a bundled manner where investment option offerings are included as part of the provider's recordkeeping / administration contract. It should be noted TIAA has become more flexible in working with plan sponsors such as VRS to increase its investment fund opportunity set over time.

Staff successfully implemented material changes to the ORPHE investment program during fiscal year 2020. This included:

- Transition of assets from TIAA proprietary annuity funds and TIAA's partner family of
 mutual funds to BlackRock collective trust funds based on the investment mapping
 strategy developed by staff.
- Transition of assets from Fidelity to investment options within the TIAA and ICMA-RC investment platforms based on the investment mapping strategy developed by staff.

Detailed information about the bundled TIAA ORPHE investment offerings is included in subsequent sections of this package.

Investment Policy Statements

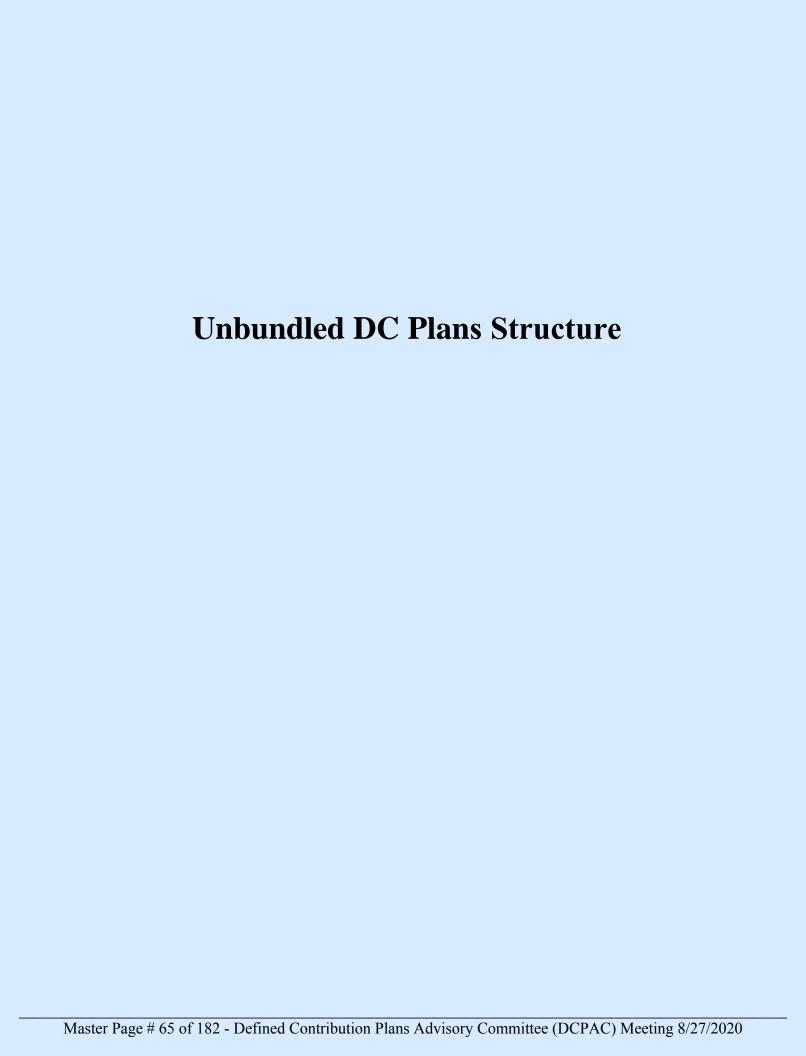
The two defined contribution investment policy statements (unbundled structure and bundled structure) were both updated January 2, 2020. Staff does not have any recommended changes to the statements at this time.

VRS DC Investment Belief Statements

Staff reviewed the VRS DC Plans Investment Belief Statements dated November 12, 2015 and does not have any recommended changes to the statements at this time.

Other

During this past annual reporting period staff discussed various DC trends and best practices and provided the Committee with CEM's annual Defined Contribution Plans Survey results.



Unbundled DC Plans

Data for period ending June 30, 2020

		Returns			3 Year Statistics				5 Year Statistics				
		Fund				Standard	Sharpe		Information				Information
F 4	-	Expense	1 Year	3 Years*	5 Years*	Deviation	Ratio	Error	Ratio	Deviation	Ratio	Error	Ratio
Fund	Туре	Ratio %	1 Year	3 Years"	5 fears"	%		%		%		%	
Manage Mark of Francis	0 11 - 1		,,										
Money Market Fund FTSE 3 Month Treasury Bill Index	Capital Preservation	0.08	1.64 1.56	1.93 1.72	1.36 1.15	n/a n/a		n/a	n/a	n/a n/a		n/a n/a	n/a
Excess Return	Preservation	-	0.08	0.21	0.21	II/a	II/a	n/a		I II/a	n/a	n/a	
Stable Value Fund ¹	Carital	0.05		2.27		- 1-	- 1-	- 1-	- /-	- 1-	- 1-	- 1-	- 1-
Custom Benchmark	Capital Preservation	0.25	2.44 1.39	2.27 2.14	2.03 1.88	n/a n/a				n/a n/a		n/a	n/a
Excess Return	(Book Value)	-	1.05	0.13	0.15	II/a	II/a	n/a		II/a	n/a	n/a	
eVestment Alliance Stable Value Fixed Income Universe ²	(BOOK Value)	•			2.06								
Bond Fund	Danaina	0.03	2.42 8.78	2.25 5.36	4.35	3.28	4 44	0.04	/-	2.00	4.04	0.06	- /-
Bloomberg Barclays U.S. Aggregate Bond Index	Passive	0.03	8.78 8.74	5.36 5.32	4.35 4.30	3.28			n/a	3.09 3.08		0.06	n/a
Excess Return		-	0.04	0.04	0.05	3.27	1.10			3.00	1.02		
MSTAR Ave: IntermediateTerm Bond		•	7.89	4.84	3.90								
Inflation-Protected Bond Fund	Passive	0.03	8.42	5.17	3.87	3.69	0.93	0.07	n/a	3.52	0.77	0.08	n/a
Bloomberg Barclays U.S. TIPS Index			8.28	5.05	3.75	3.66			1,42	3.50			1,7
Excess Return		•	0.14	0.12	0.12								
MSTAR Ave: Inflation-Protected Bond			6.78	4.27	3.09								
High-Yield Bond Fund	Active	0.40	-1.48	3.16	4.64	8.66	0.17	1.09	-0.40	7.55	0.46	1.04	-0.12
ICE BofA U.S. HY BB-B Constrained Index			0.52	3.61	4.77	8.26	0.23			7.33	0.49		
Excess Return			-2.00	-0.45	-0.13								
MSTAR Ave: High-Yield Bond			-1.89	2.04	3.38								
Stock Fund	Passive	0.01	7.56	10.78	10.76	16.96			n/a				n/a
S&P 500 Index			7.51	10.73	10.73	16.95	0.53			14.76	0.65		
Excess Return			0.05	0.05	0.03								
MSTAR Ave: Large Blend	D	0.00	3.74	8.15	8.35	00.00	0.44	0.00	- / -	10.01	0.00	0.00	- /-
Small/Mid-Cap Stock Fund Russell 2500 Index	Passive	0.02	-4.66 -4.70	4.11 4.08	5.51 5.41	22.39 22.38		0.08	n/a	19.31 19.31	0.23 0.22	0.08	n/a
Excess Return		-	0.04	0.03	0.10	22.30	0.11			19.31	0.22		
MSTAR Ave: Mid-Cap Blend		•	-6.19	2.41	3.86								
International Stock Fund	Passive	0.06	-4.46	1.25	2.51	16.25	-0.03	1.21	n/a	14.80	0.09	1.46	n/a
MSCI ACWI ex-U.S. IMI Index (linked to MSCI World ex-U.S.	1 433140	0.00	-4.74	0.96	2.22	10.20	0.00	1.21	11/4	14.00	0.00	1.40	11/α
Index prior to August 2016)						16.27	-0.05			15.00	0.07		
Excess Return			0.28	0.29	0.29								
MSTAR Ave: Foreign Large Blend			-4.66	0.30	1.79								
Global Real Estate Fund	Passive	0.09	-15.56	-0.86	2.19	17.77	_	0.39	n/a	15.73	0.07	0.57	n/a
FTSE EPRA/NAREIT Developed Index			-16.25	-1.60	1.27	17.87	-0.19			15.83	0.01		
Excess Return]	0.69	0.74	0.92								
MSTAR Ave: Global Real Estate			-12.52	0.18	2.05								

¹ Stable value funds typically track the general movements of interest rates with a lag. It is expected that when interest rates are falling, stable value yields do not fall as quickly and when interest rates are rising stable value yields do not rise as quickly.

² eVestment Alliance universe returns are gross of investment management fees and net of wrap fees. The Stable Value Fund returns are net of all fees.

Unbundled DC Plans

Data for period ending June 30, 2020

Data for period ending June 30, 2020				Returns			3 Year	Statistics			5 Year S	statistics	
Fund	Туре	Fund Expense Ratio	1 Year	3 Years*	5 Years*	Standard Deviation	Sharpe Ratio	Tracking Error	Information Ratio	Standard Deviation		Tracking Error	Information Ratio
	1	%	%	%	%	%		%		%		%	
Retirement Portfolio Custom Benchmark Excess Return	Passive	0.08	6.15 6.00 0.15	5.84 5.78 0.06	5.23 5.18 0.05	7.00 6.99			n/a	6.10 6.11	0.67 0.66		n/a
Target Date 2025 Portfolio Custom Benchmark Excess Return	Passive	0.08	4.88 4.74 0.14	6.07 5.99 0.08	5.77 5.69 0.08	9.29 9.28			n/a	8.34 8.37			n/a
Target Date 2030 Portfolio Custom Benchmark Excess Return	Passive	0.08	3.88 3.73 0.15	6.10 5.99 0.11	5.98 5.88 0.10	11.07 11.08			n/a	9.88 9.93			n/a
Target Date 2035 Portfolio Custom Benchmark Excess Return	Passive	0.08	2.93 2.80 0.13	6.11 5.99 0.12	6.18 6.05 0.13	12.78 12.79			n/a	11.36 11.41	0.44 0.43		n/a
Target Date 2040 Portfolio Custom Benchmark Excess Return	Passive	0.08	2.03 1.92 0.11	6.09 5.96 0.13	6.32 6.18 0.14	14.34 14.36			n/a	12.70 12.76			n/a
Target Date 2045 Portfolio Custom Benchmark Excess Return	Passive	0.08	1.49 1.37 0.12	6.06 5.91 0.15	6.40 6.23 0.17	15.46 15.50			n/a	13.62 13.69			n/a
Target Date 2050 Portfolio Custom Benchmark Excess Return	Passive	0.08	1.22 1.12 0.10	6.02 5.88 0.14	6.41 6.24 0.17	15.97 16.00			n/a	13.99 14.07	0.38 0.36		n/a
Target Date 2055 Portfolio Custom Benchmark Excess Return	Passive	0.08	1.24 1.11 0.13	6.02 5.87 0.15	6.41 6.24 0.17	16.01 16.06			n/a	14.02 14.11	0.37 0.36		n/a
Target Date 2060 Portfolio Custom Benchmark Excess Return	Passive	0.08	1.23 1.11 0.12	6.00 5.87 0.13	6.41 6.24 0.17	16.02 16.06			n/a	14.02 14.11	0.38 0.36		n/a

^{*}Annualized.

Data provided by BlackRock, Galliard, ICMA-RC, and Zephyr StyleADVISOR.

Unbundled DC Plans - Investment Option Costs Information as of June 30, 2020

Investment Option ¹	Investment Manager	Туре	Investment Management Costs	Wrap & Acquired Fund ² Costs	Fund Embedded Costs ²	State Street Cost to Strike Net NAV	Investment Option Expense Ratio	Investment Option Expense Ratio YOY Change
Money Market Fund	BlackRock	Capital Preservation	0.080000%	n/a	0.000400%	n/a	0.08%	0.00%
Stable Value Fund Bond Fund	Galliard BlackRock	Capital Preservation (Book Value) Passive	0.066000% 0.030000%	0.179000% n/a	n/a 0.004000%		0.25% 0.03%	
Inflation-Protected Bond Fund	BlackRock	Passive	0.020000%		0.004000%		0.03%	
High-Yield Bond Fund	JPMorgan	Active	0.380000%		0.000000%			
Stock Fund	BlackRock	Passive	0.007500%		0.001200%	0.005334%		
Small/Mid-Cap Stock Fund	BlackRock	Passive	0.015000%		0.003900%			
International Stock Fund	BlackRock	Passive	0.040000%		0.019500%			
Global Real Estate Fund	BlackRock	Passive	0.070000%		0.010000%			
Retirement Portfolio	BlackRock	Passive	0.070000%		0.006300%		0.08%	
Target Date 2025 Portfolio	BlackRock	Passive	0.070000%		0.006700%		0.08%	
Target Date 2030 Portfolio	BlackRock	Passive	0.070000%	n/a	0.007400%		0.08%	0.00%
Target Date 2035 Portfolio	BlackRock	Passive	0.070000%	n/a	0.008400%		0.08%	0.00%
Target Date 2040 Portfolio	BlackRock	Passive	0.070000%	n/a	0.009100%	n/a	0.08%	0.00%
Target Date 2045 Portfolio	BlackRock	Passive	0.070000%	n/a	0.009900%	n/a	0.08%	0.00%
Target Date 2050 Portfolio	BlackRock	Passive	0.070000%	n/a	0.010000%	n/a	0.08%	0.00%
Target Date 2055 Portfolio	BlackRock	Passive	0.070000%	n/a	0.010000%	n/a	0.08%	0.00%
Target Date 2060 Portfolio	BlackRock	Passive	0.070000%	n/a	0.010000%	n/a	0.08%	0.00%
Target Date 2065 Portfolio	BlackRock	Passive	0.070000%	n/a	0.010000%	n/a	0.08%	n/a
VRSIP	VRS	Active	n/a	n/a	n/a	n/a	0.59%	0.01%

¹ There are no short-term trading redemption costs associated with any of the investment options.

 $^{^{\}rm 2}$ Includes custody, audit and other specific investment option related administrative costs.

Unbundled DC Plans Annual Calendar Year End Return Data

Fund	2019	2018	2017	2016	2015
	%	%	%	%	%
Money Market Fund	2.40	2.14	1.20	0.49	0.00
Bloomberg Barclays U.S. 3-Month Treasury Bill Index	2.30	1.89	0.87	0.35	0.07
Stable Value Fund	2.51	2.18	1.83	1.70	1.48
Custom Benchmark	2.21	2.83	1.74	1.37	1.53
eVestment Alliance Stable Value Fixed Income Universe ¹	2.50	2.14	1.85	1.83	1.81
Bond Fund	8.74	0.04	3.63	2.70	0.58
Bloomberg Barclays U.S. Aggregate Bond Index	8.72	0.01	3.54	2.65	0.55
MSTAR Ave: IntermediateTerm Bond	8.06	-0.50	3.71	3.23	-0.26
Inflation-Protected Bond Fund	8.48	-1.15	3.20	4.80	-1.27
Bloomberg Barclays U.S. TIPS Index	8.43	-1.26	3.01	4.68	-1.44
MSTAR Ave: Inflation-Protected Bond	7.92	-1.64	2.72	4.59	-2.36
High-Yield Bond Fund	14.77	-1.29	7.11	14.55	-2.19
ICE BofA U.S. HY BB-B Constrained Index	15.10	-2.04	6.98	14.72	-2.79
MSTAR Ave: High-Yield Bond	12.62	-2.59	6.47	13.30	-4.01
Stock Fund	31.54	-4.35	21.85	11.97	1.44
S&P 500 Index	31.49	-4.38	21.83	11.96	1.38
MSTAR Ave: Large Blend	28.78	-6.27	20.44	10.37	-1.07
Small/Mid-Cap Stock Fund	27.80	-9.96	16.83	17.87	-2.75
Russell 2500 Index	27.77	-10.00	16.81	17.59	-2.90
MSTAR Ave: Mid-Cap Blend	26.21	-11.15	15.93	14.14	-4.75
International Stock Fund	21.94	-14.50	28.21	3.01	-2.78
MSCI ACWI ex-U.S. IMI Index ²	21.63	-14.76	27.81	2.11	-3.04
MSTAR Ave: Foreign Large Blend	21.59	-14.59	25.12	0.79	-1.59
Global Real Estate Fund	22.91	-5.02	11.85	5.30	-0.22
FTSE EPRA/NAREIT Developed Index	21.91	-5.63	10.36	4.06	-0.79
MSTAR Ave: Global Real Estate	23.45	-7.11	15.12	1.97	-0.92
VRSIP	15.31	-1.31	14.35	7.65	2.02
VRS Custom Benchmark	15.43	-1.12	13.86	7.81	1.14
Retirement Portfolio	15.65	-3.48	10.18	6.10	-1.13
Custom Benchmark	15.61	-3.48	10.09	6.00	-1.07
Target Date 2025 Portfolio	18.60	-4.87	13.91	7.29	-1.43
Custom Benchmark	18.54	-4.90	13.75	7.10	-1.46
Target Date 2030 Portfolio	20.78	-5.70	15.83	7.88	-1.60
Custom Benchmark	20.70	-5.76	15.63	7.62	-1.65
Target Date 2035 Portfolio	22.85	-6.50	17.70	8.42	-1.79
Custom Benchmark	22.74	-6.58	17.46	8.10	-1.85
Target Date 2040 Portfolio	24.73	-7.24	19.38	8.87	-1.99
Custom Benchmark	24.60	-7.33	19.10	8.51	-2.08
Target Date 2045 Portfolio	26.04	-7.84	20.46	9.18	-2.14
Custom Benchmark	25.93	-7.98	20.14	8.75	-2.23
Target Date 2050 Portfolio	26.62	-8.12	20.84	9.25	-2.19
Custom Benchmark	26.49	-8.26	20.53	8.83	-2.26
Target Date 2055 Portfolio	26.67	-8.14	20.82	9.22	-2.18
Custom Benchmark	26.56	-8.29	20.53	8.83	-2.26
Target Date 2060 Portfolio	26.66	-8.15	20.77	9.24	-2.14
Custom Benchmark	26.56	-8.29	20.53	8.83	-2.26

¹ eVestment Alliance universe returns are gross of investment management fees and net of wrap fees. The Stable Value Fund returns are net of all fees.

Data provided by BlackRock, Galliard, BofNY Mellon, ICMA-RC, eVestment, and Morningstar.

 $^{^{\}rm 2}$ Prior to August 2016 it was the MSCI World ex-U.S. Index from July 2012 - July 2016.

TD Ameritrade

Total

Below are the totals for the period ending June 30, 2020. Returns greater than one year are annualized.

n/a

n/a

n/a

n/a

Investment Options	1 Month	3 Months	YTD	1 Yr	3 Yrs	5 Yrs	10 Yrs / Since Inception ¹	Fund Expense Ratio ²	Inception Date	Market Value	% of Market Value ²⁷	% of Participal Selecting ar Option ²⁸
Do-It-For-Me: Target Date Portfolios ^{3,4}	%	%	%	%	%	%	%	%	24.0	\$	%	
Retirement Portfolio	1.61	9.54	1.07	6.15	5.84	5.23	6.19	0.08	8/1/05	384,419,527	8.3	6.2
Custom Benchmark	1.60	9.47	0.94	6.00	5.78	5.23 5.18	6.14	0.00	0/1/03	304,413,321	0.5	0.2
Target Date 2025 Portfolio	1.93	11.57	-1.06	4.88	6.07	5.77	7.72	0.08	7/5/06	256,738,789 ²⁴	5.5	6.6
Custom Benchmark	1.92	11.50	-1.18	4.74	5.99	5.69	7.63	0.00	170700	200,100,100	0.0	0.0
Target Date 2030 Portfolio	2.23	13.51	-2.79	3.88	6.10	5.98	8.20	0.08	8/1/05	237,064,716	5.1	8.0
Custom Benchmark	2.22	13.44	-2.91	3.73	5.99	5.88	8.09					
Target Date 2035 Portfolio	2.52	15.38	-4.38	2.93	6.11	6.18	8.63	0.08	7/5/06	219,601,726	4.7	9.2
Custom Benchmark	2.52	15.32	-4.48	2.80	5.99	6.05	8.50		0/4/05	100 100 010		
Target Date 2040 Portfolio	2.79	17.14	-5.84	2.03	6.09	6.32	9.00	0.08	8/1/05	180,402,913	3.9	9.2
Custom Benchmark Target Date 2045 Portfolio	2.79	17.08	<u>-5.93</u>	1.92	5.96	6.18	8.85	0.08	7/5/06	163,365,099	3.5	10.4
Custom Benchmark	2.99 2.99	18.49 18.40	-6.74 -6.86	1.49 1.37	6.06 5.91	6.40 6.23	9.31 9.14	0.06	113100	103,303,033	3.3	10.4
Target Date 2050 Portfolio	3.08	19.11	-7.16	1.22	6.02	6.41	9.56	0.08	9/30/07	158,234,041	3.4	12.1
Custom Benchmark	3.08	19.05	-7.1 6 -7.25	1.12	5.88	6.24	9.39	0.00	0,00,01	,	· · ·	
Target Date 2055 Portfolio	3.10	19.20	-7.16	1.24	6.02	6.41	9.70	0.08	5/19/10	184,796,023	4.0	16.3
Custom Benchmark	3.10	19.15	-7.28	1.11	5.87	6.24	9.53					
Target Date 2060 Portfolio	3.09	19.20	-7.17	1.23	6.00	6.41	6.06	0.08	11/17/14	68,791,047	1.5	11.1
Custom Benchmark	3.10	19.15	-7.28	1.11	5.87	6,24	5.89	*****		,,		
Target Date 2065 Portfolio	3.10	19.08	-7.26	n/a	n/a	n/a	0.08	0.08	9/23/19	1,195,538	0.0	0.8
Custom Benchmark	3.10	19.15	-7.28	n/a	n/a	n/a	0.16	0.00	3/23/13	1,193,330	0.0	0.0
elp-Me-Do-It: Individual Options	3.10	13.13	7.20	Π/α	Π/α	Π/α	0.10					
	0.04	0.17	0.56	1.64	1.93	1.36	0.72		44/4/00	04 404 = 40		
Money Market Fund ^{5,6}								80.0	11/1/99	94,161,746	2.0	2.1
FTSE 3 Month Treasury Bill Index	0.01	0.14	0.52	1.56	1.72	1.15	0.61					
Yield as of 06/30/20: 0.46% ⁷												
Stable Value Fund ^{8,9}	0.18	0.55	1.14	2.44	2.27	2.03	2.06	0.25	2/1/95	632,989,583	13.6	8.3
Custom Benchmark ¹⁰	0.04	0.12	0.45	1.39	2.14	1.88	1.54					
Yield as of 06/30/20: 2.23% ¹¹												
Bond Fund ¹²	0.64	2.96	6.18	8.78	5.36	4.35	3.88	0.03	11/1/99	182,403,908	3.9	3.9
Bloomberg Barclays U.S. Aggregate Bond Index	0.63	2.90	6.14	8.74	5.32	4.30	3.82	0.00	, .,	,,	0.0	0.0
Inflation-Protected Bond Fund ¹³	1.13	4.41	6.12	8.42	5.17	3.87	3.61	0.03	7/30/02	44,075,447	1.0	1.5
Bloomberg Barclays U.S. TIPS Index	1.12	4.24	6.01	8.28	5.05	3.75	3.52			,,	-	
High-Yield Bond Fund ¹⁴	0.63	8.53	-5.36	-1.48	3.16	4.64	6.55	0.40	5/31/04	42,530,617	0.9	1.9
ICE BofA U.S. High-Yield BB-B Constrained Index	0.65	9.44	-3.62	0.52	3.61	4.77	6.53			, ,		
Stock Fund ¹⁵	1.99	20.57	-3.04	7.56	10.78	10.76	14.02	0.01	11/1/99	1,139,458,488	24.5	11.0
S&P 500 Index	1.99	20.54	-3.08	7.51	10.73	10.73	13.99	0.0.	11,1,00	1,100,100,100	20	11.0
Small/Mid-Cap Stock Fund ¹⁶	2.93	26.59	-11.04	-4.66	4.11	5.51	11.48	0.02	11/1/99	312,360,985	6.7	6.2
•	2.89	26.56	-11.05	-4.70	4.08	5.41	11.39	0.02	11/1/99	312,300,903	0.7	0.2
Russell 2500 Index ¹⁷												
International Stock Fund ¹⁸	4.36	17.12	-11.01	-4.46	1.25	2.51	5.89	0.06	11/1/99	168,377,480	3.6	5.2
MSCI ACWI ex-U.S. IMI Index ¹⁹	4.36	16.96	-11.24	-4.74	0.96	2.22	5.58					
Global Real Estate Fund ²⁰	2.54	10.14	-20.99	-15.56	-0.86	2.19	8.23	0.09	10/1/02	83,993,820	1.8	3.4
FTSE EPRA/NAREIT Developed Index ²¹	2.57	10.07	-21.33	-16.25	-1.60	1.27	7.66					
VRSIP ²²	2.23	-0.18	-3.54	5.58	5.71	5.78	8.04	0.59	7/1/08	39,337,266 ²⁵	0.9	0.6
VRS Custom Benchmark ²³	1.55	-1.33	-3.99	4.57	5.43	5.42	7.58	0.50	.,.,00	55,557,250	0.0	0.0
VIVO Odstom Denominark	1.55	1.00	0.33	7.51	J. 4 J	J.72	1.00					
VRSIP and benchmark returns are reported with a one m	nonth lag. [Retur	n information	shown is	as of May	31, 2020.]	[Market va	alue as of May 3	1, 2020 was \$	38,318,292.]			
Do-It-Myself: Self-Directed Brokerage Account												
TD A You I	/	/	/	/	/-	/	/	/	/	E0 C4C 000	4.0	0.0

n/a

n/a

n/a

n/a

n/a

58,616,838

\$4,652,915,597²⁶

1.3

0.2

Footnotes >

- 1 If the fund was not in existence for 10 years, fund and corresponding benchmark returns shown represent performance from the since inception date.
- 2 Fund investment advisers may voluntarily agree to waive expenses. Expense waivers may be terminated at any time.
- 3 The Target Date Portfolios invest in units of BlackRock's LifePath Index Funds O. The LifePath Index Funds F. The inception dates shown reflect the inception dates of the master LifePath Funds F.

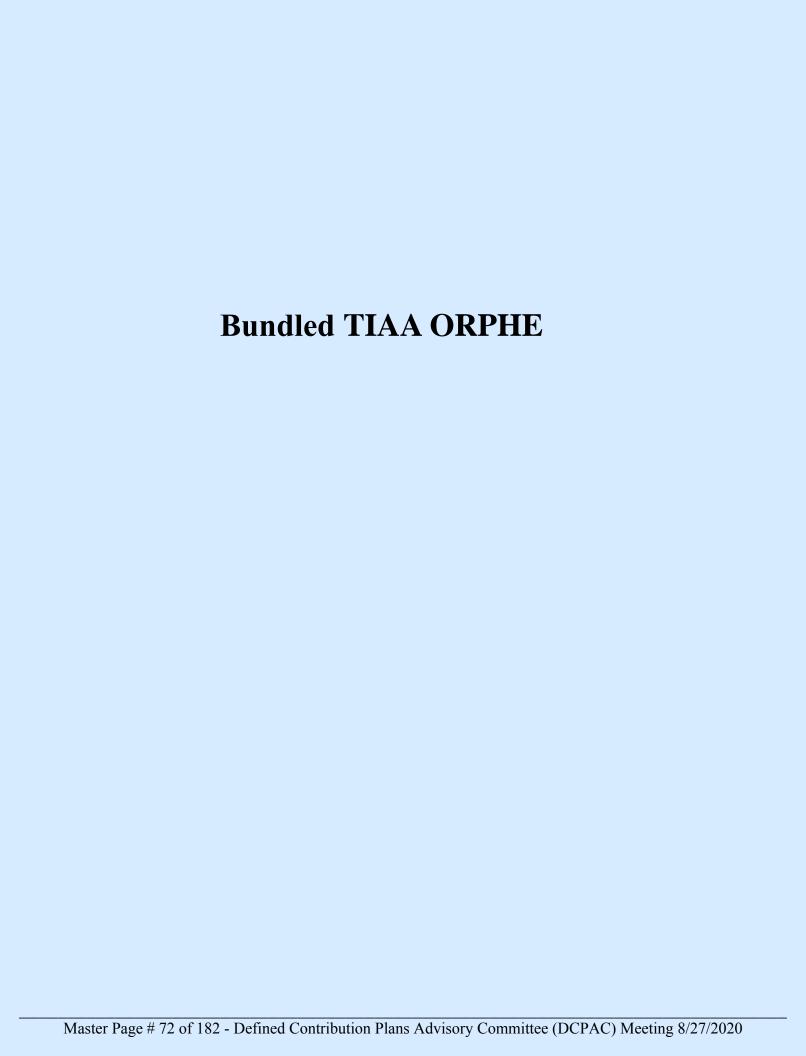
 The inception dates for most LifePath Funds O were 12/9/11. The 2055 Fund's O inception data was 12/12/11, the 2060 Fund's O inception date was 1/2/15, and the 2065 Fund's O inception date was 9/23/2019. Returns prior to Funds' O inception dates are those of the Funds F with deductions taken for Funds O investment management fees.
- 4 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 Index, Bloomberg Barclays U.S. Aggregate Bond Index, Bloomberg Barclays U.S. TIPS Index, FTSE EPRA/NAREIT Developed Index and the Bloomberg Commodity Index Total Return.
- 5 The Money Market Fund invests in units of BlackRock's Short-Term Investment Fund W. The inception data shown reflects the VRS Defined Contribution Plan's investment strategy inception date. Returns of the Fund from July 2012 through July 2016 represent performance of other BlackRock funds. Returns prior to July 2012 represent performance by the previous investment manager, State Street Global Advisors. All performance returns are linked.
- 6 An investment in a money market fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although the Fund seeks to preserve the value of your investment it is possible to lose money by investing in the Fund.
- 7 The current yield more closely reflects the earnings of the Fund than the total net return information.
- 8 The inception date shown reflects the VRS Defined Contribution Plans investment strategy inception date.
- 9 Direct transfers from the Stable Value Fund to the Money Market Fund (considered a "competing" fund") are not permitted. Before transferring to the Money Market Fund, participants must first transfer to a "non-competing" fund for 90 days.

 Optional Retirement Plan for Higher Education (ORPHE) participants who want to make a direct exchange to another ORPHE provider, must first exchange to a "non-competing" fund on the ICMA-RC investment platform for 90 days.
- 10 Effective August 2016, the benchmark represents a hypothetical return generated by the monthly yields of actively traded U.S. Treasuries based on [50% 2- year maturity + 50% 3- 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 3-year maturity plus an annualized spread of 0.50%. The benchmark returns are linked.
- 11 The current yield more closely reflects the earnings of the Fund than the total net return information. There is no guarantee that the Fund will earn the current yield in the future.
- 12 The Bond Fund invests in units of BlackRock's U.S. Debt Index Fund M. The U.S. Debt Index Fund M invests in the master Fund F. The inception date shown reflects the VRS Defined Contribution Plans strategy inception date. Performance returns are linked to the previous investment manager. Returns prior to July 2012 represent performance by State Street Global Advisors.
- 13 The Inflation-Protected Bond Fund invests in units of BlackRock's U.S. Treasury-Inflation Protected Securities Fund M. The U.S. Treasury Inflation-Protected Securities Fund M invests in the master Fund F. The inception date shown reflects the inception date of the master Fund F. The inception date of BlackRock's U.S. Treasury Inflation-Protected Securities Fund M was July 20, 2012. Returns prior to Fund M's inception date are those of Fund F with deductions taken for Fund M's investment management fees.
- 14 The High-Yield Bond Fund invests in units of JPMorgan's Corporate High-Yield Fund-Investment Class. The inception date shown reflects the date the current investment team at JPMorgan commenced management responsibility of the Fund. Performance reflects the investment manager's returns for the aforementioned Fund with deductions taken for investment management fees negotiated by VRS and fund administrative expenses.
- 15 The Stock Fund invests in units of BlackRock's Equity Index Fund F. Performance represents BlackRock's returns for the master Fund F with deductions taken for management fees negotiated by VRS and fund administrative expenses. The inception date shown reflects the VRS Defined Contribution Plans investment strategy inception date. Performance returns are linked to the previous investment manager. Returns prior to July 2012 represent performance by State Street Global Advisors.
- 16 The Small/Mid-Cap Stock Fund invests in units of BlackRock's Russell 2500 Index Fund F. Performance represents BlackRock's returns for the master Fund F with deductions taken for investment management fees negotiated by VRS and fund administrative expenses. The inception date shown reflects the VRS Defined Contribution Plans strategy inception date. Performance returns are linked to the previous investment manager. Returns prior to July 2012 represent performance by State Street Global Advisors.
- 17 Effective July 2012, the performance benchmark is the Russell 2500 Index. Prior to July 2012, the performance benchmark was the Russell Small Cap Completeness Index. The benchmark returns are linked.
- 18 The International Stock Fund invests in units of BlackRock's MSCI ACWI ex-U.S. IMI Index Fund F. Performance represents BlackRock's returns for the master Fund F with deductions taken for investment management fees negotiated by VRS and fund administrative expenses. The inception date shown reflects the VRS Defined Contribution Plan's investment strategy inception date. Returns from July 2012 through July 2016 represent performance of another BlackRock Fund. Returns prior to July 2012 represent performance by the previous manager, State Street Global Advisors. All performance returns are linked.
- 19 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 and prior to July 2012 it was the MSCI EAFE Index. The benchmark returns are linked.
- 20 The Global Real Estate Fund invests in units of BlackRock's Developed Real Estate Index Fund F. Performance represents BlackRock's returns for the master Fund F with deductions taken for investment management fees negotiated by VRS and fund administrative expenses. The inception date shown reflects the VRS Defined Contribution Plans investment strategy inception date. The Fund transitioned from a U.S. domestic REIT fund to a global real estate fund during July 2012. Performance returns are linked to the previous investment manager. Returns prior to July 2012 represent performance by State Street Global Advisors.
- 21 Effective July 2012, the performance benchmark is the FTSE EPRA/NAREIT Developed Index. Prior to July 2012, the performance benchmark was the Dow Jones U.S. Select REIT Index. The benchmark returns are linked.
- 22 The inception date shown reflects the date the VRS Investment Portfolio (VRSIP) was unitized.
- 23 The VRS Custom Benchmark is a blend of the asset class benchmarks at policy weights.
- 24 Includes Pending Account VRSIP amount of \$0.
- 25 Includes Preliminary Investment Portfolio Account PIP amount of \$1,204,963.
- 26 Includes \$3,080,437 held in the administrative Special Accounts.
- 27 May not equal 100% due to rounding.
- 28 The data reflects the percentage of participants who selected a particular investment option as of June 30, 2020. There were 443,635 participant accounts as of June 30, 2020 across all unbundled DC plans.

All fund performance returns shown reflect all fund management fees and expenses, but do not reflect the Plan administrative fee charged by ICMA-RC which would further reduce the returns shown.

All calculations assume reinvestment of dividends and capital gains. All returns are calculated in U.S. dollars. Performance returns are provided by BlackRock, Galliard Capital Management, JPMorgan, Bank of New York Mellon, and ICMA-RC. Benchmark returns are provided by BlackRock, Russell/Mellon Analytical Services, Galliard, and ICMA-RC. Although data is gathered from sources believed to be reliable, we cannot guarantee completeness or accuracy.

Plan Administrative Fee: An annual record keeping and communication services fee of \$30.50 is deducted from participant accounts on a monthly basis (approximately \$2.54 per month). Only one annual fee of \$30.50 is deducted from participant accounts for those participants participants participanting in more than one Commonwealth of Virginia defined contribution plan.



Bundled ORP for Higher Education - TIAA RC Contract¹

Data for period ending June 30, 2020

	Returns				3 Year Statistics				5 Year Statistics				
		Fund					Sharpe	_	Information	Standard	•	_	Information
	_	Expense	4 1/2	0.1/	5 V *	Deviation	Ratio	Error	Ratio	Deviation	Ratio	Error	Ratio
Fund	Туре	Ratio	1 Year	3 Years*	5 Years*	(%)				(%)			
		%						%		%		%	,
BlackRock Equity Index Fund J	Passive	0.01	7.56	10.78	10.76	16.96			n/a	14.76			n/a
S&P 500 Index			7.51	10.73	10.73	16.95	0.53			14.76	0.65		
Excess Return			0.05	0.05	0.03								
MSTAR Ave: Large Blend			3.74	8.15	8.35								
BlackRock Russell 2500 Index Fund M	Passive	0.04	-4.67	4.11	5.51	22.39	0.11	0.08	n/a	19.31	0.23	0.08	n/a
Russell 2500 Index			-4.70	4.08	5.41	22.38	0.11			19.31	0.22		
Excess Return			0.03	0.03	0.10								
MSTAR Ave: Mid-Cap Blend			-6.19	2.41	3.86								
BlackRock MSCI ACWI ex-U.S. IMI Index Fund M	Passive	0.11	-4.52	1.21	2.54	16.25	-0.03	1.20	n/a	14.84	0.09	1.34	n/a
MSCI ACWI ex-U.S. IMI Index			-4.74	0.96	2.30	16.27	-0.05			15.02	0.08		
Excess Return			0.22	0.25	0.24								
MSTAR Ave: Foreign Large Blend			-4.66	0.30	1.79								
BlackRock MSCI ACWI IMI Index Non-Lendable Fund M	Passive	0.05	1.42	5.91	6.51	16.66	0.25	0.56	n/a	14.70	0.36	0.63	n/a
MSCI ACWI IMI Index			1.17	5.55	6.11	16.72	0.23			14.82	0.33		
Excess Return			0.25	0.36	0.40								
MSTAR Ave: World Stock			1.83	5.55	6.04								
TIAA Real Estate Account	Active	0.78	0.99	3.75	4.42	1.71	1.17	1.86	0.06	1.48	2.19	1.60	-0.40
Custom Composite Benchmark	1		-0.35	3.62	5.05	2.58	0.73			2.33	1.66		
Excess Return			1.34	0.13	-0.63								

^{*}Annualized

Funds with revenue sharing within the RC contract.

Underperformance |

Data provided by TIAA, BlackRock, ICMA-RC, VRS and Zephyr StyleADVISOR.

¹ Refer to the unbunded DC plans for information regarding BlackRock's LifePath Index Funds O, Short-Term Investment Fund W, U.S. Debt Index Fund M and U.S. TIPs Fund M. Although the unbundled DC plans use white label fund names and TIAA does not these funds are the same exact funds.

Bundled ORP for Higher Education - TIAA RC Contract Investment Option Costs^{1,2} Information as of June 30, 2020

	Investment Manager	Туре	Investment Management	Administration	Distribution	•		Other	Option Expense	Investment Option Expense Ratio YOY Change
TIAA Traditional Annuity	TIAA	Fixed Annuity	n/a	0.150000%	n/a	n/a	n/a	0.340000%	0.49%	0.00%
TIAA Real Estate Account	TIAA	Active	0.250000%	0.180000%	0.105000%	0.005000%	n/a	0.240000%	0.78%	-0.05%
BlackRock Equity Index Fund J	BlackRock	Passive	0.010000%	n/a	n/a	n/a	n/a	0.002100%	0.01%	n/a
BlackRock Russell 2500 Index Fund M	BlackRock	Passive	0.030000%	n/a	n/a	n/a	n/a	0.005600%	0.04%	n/a
BlackRock MSCI ACWI ex-U.S. IMI Index Fund M	BlackRock	Passive	0.090000%	n/a	n/a	n/a	n/a	0.020000%	0.11%	n/a
BlackRock MSCI ACWI IMI Index Non-Lendable Fund M	BlackRock	Passive	0.040000%	n/a	n/a	n/a	n/a	0.010000%	0.05%	n/a

¹ There are no short-term trading redemption costs associated with any of the investment options.

Funds with revenue sharing within the TIAA RC contract.

Percentage of Embedded Record-Keeping and Plan Administration Costs

Investment Option		Administration	Investment	% of Record- Keeping & Plan Administration Costs
TIAA Traditional Annuity	Fixed Annuity	0.150000%	0.49%	31%
TIAA Real Estate Account	Active	0.180000%		23%

TIAA Plan Services Expense Amounts Returned to Participants (7/1/2019 - 6/30/2020)

Investment Option	Dollar Amounts
TIAA Traditional Annuity	\$20,959
TIAA Real Estate Account	\$14,370

² Refer to the unbunded DC plans for information regarding BlackRock's LifePath Index Funds O, Short-Term Investment Fund W, U.S. Debt Index Fund M and U.S. TIPs Fund M. Although the unbundled DC plans use white label fund names and TIAA does not these funds are the same exact funds.

Bundled ORP for Higher Education - TIAA RC Contract¹ Annual Calendar Year End Return Data

Fund	2019	2018	2017
	%	%	%
TIAA Traditional Annuity RC	4.01	4.12	4.06
BlackRock Equity Index Fund J	n/a	n/a	n/a
S&P 500 Index	n/a	n/a	n/a
MSTAR Ave: Large Blend	n/a	n/a	n/a
BlackRock Russell 2500 Index Fund M	n/a	n/a	n/a
Russell 2500 Index	n/a	n/a	n/a
MSTAR Ave: Mid- Cap Blend	n/a	n/a	n/a
BlackRock MSCI ACWI ex-U.S. IMI Index Fund M	n/a	n/a	n/a
MSCI ACWI ex-U.S. IMI Index	n/a	n/a	n/a
MSTAR Ave: Foreign Large Blend	n/a	n/a	n/a
BlackRock MSCI ACWI IMI Index Non-Lendable Fund M	n/a	n/a	n/a
MSCI ACWI IMI Index	n/a	n/a	n/a
MSTAR Ave: World Stock	n/a	n/a	n/a

Data provided by TIAA.

¹Refer to the unbunded DC plans for information regarding BlackRock's LifePath Index Funds O, Short-Term Investment Fund W, U.S. Debt Index Fund M and U.S. TIPs Fund M. Although the unbundled DC plans use white label names and TIAA does not these funds are the exact same funds.

Defined Contribution Plans Advisory Committee Report

TIAA RC Contract Investment Performance

Below are the totals for the period ending June 30, 2020. Returns greater than one year are annualized.

							10 Yrs / Since	Fund Expense			% of Market	% of Participant Selecting an
Investment Options	1 Month	3 Months	YTD	1 Yr	3 Yrs	5 Yrs	Inception ¹	Ratio ²	Inception Date	Market Value	Value 19	Option 20
Farget Date Portfolios 3,4	%		%		%		%	%		\$	%	
BlackRock LifePath Index Retirement Fund O	1.61	9.54	1.07	6.15	5.84	5.23	6.19	0.08	8/1/05	27.055.606	11.3	10.3
Custom Benchmark	1.60	9.47	0.94	6.00	5.78	5.18	6.14					
BlackRock LifePath Index 2025 Fund O	1.93	11.57	-1.06	4.88	6.07	5.77	7.72	0.08	7/5/06	18.134.763	7.6	6.8
Custom Benchmark	1.92	11.50	-1.18	4.74	5.99	5.69	7.63			, ,		
BlackRock LifePath Index 2030 Fund O	2.23	13.51	-2.79	3.88	6.10	5.98	8.20	0.08	8/1/05	22,330,827	9.3	8.7
Custom Benchmark	2.22	13.44	-2.91	3.73	5.99	5.88	8.09					
BlackRock LifePath Index 2035 Fund O	2.52	15.38	-4.38	2.93	6.11	6.18	8.63	0.08	7/5/06	16,587,279	6.9	9.0
Custom Benchmark	2.52	15.32	-4.48	2.80	5.99	6.05	8.50					
BlackRock LifePath Index 2040 Fund O	2.79	17.14	-5.84	2.03	6.09	6.32	9.00	0.08	8/1/05	18,429,603	7.7	9.5
Custom Benchmark	2.79	17.08	-5.93	1.92	5.96	6.18	8.85	0.00	7/5/00	4.4.CO4.E44		40.4
BlackRock LifePath Index 2045 Fund O Custom Benchmark	2.99	18.49	-6.74	1.49	6.06	6.40	9.31	80.0	7/5/06	14,621,541	6.1	10.1
BlackRock LifePath Index 2050 Fund O	2.99	18.40 19.11	-6.86 -7.16	1.37 1.22	5.91 6.02	6.23	9.14 9.56	0.08	9/30/07	7,654,063	3.2	7.6
Custom Benchmark	3.08 3.08	19.11 19.05	-7.16 -7.25	1.12	6.02 5.88	6.41 6.24	9 .56 9.39	0.06	9/30/07	7,034,003	3.2	7.0
BlackRock LifePath Index 2055 Fund O	3.00 3.10	19.05 19.20	-7.25 -7.16	1.24	6.02	6.41	9.39	0.08	5/19/10	3,308,666	1.4	4.9
Custom Benchmark	3.10	19.15	-7.10	1.11	5.87	6.24	9.53	0.00	0/10/10	0,000,000	1.4	4.0
			-7.20		6.00	6.41		0.00	44/47/44	FF2 002	0.0	4.7
BlackRock LifePath Index 2060 Fund O	3.09	19.20		1.23			6.06	0.08	11/17/14	553,883	0.2	1.7
Custom Benchmark	3.10	19.15	-7.28	1.11	5.87	6.24	5.89					
BlackRock LifePath Index 2065 Fund O	3.10	19.08	-7.26	n/a	n/a	n/a	0.08	0.08	9/23/19	37,337	0.0	0.1
Custom Benchmark	3.10	19.15	-7.28	n/a	n/a	n/a	0.16					
ndividual Options												
BlackRock Short-Term Investment Fund W 5	0.04	0.17	0.56	1.64	1.93	1.40	0.80	0.08	7/1/03	6,326,213	2.6	8.2
FTSE 3 Month Treasury Bill Index	0.01	0.14	0.52	1.56	1.72	1.15	0.61			-,,		
Yield as of 06/30/20: 0.46% ⁶	0.0.	0	0.02				0.0.					
BlackRock U.S. Debt Index Fund M ⁷	0.64	2.96	6.18	8.78	5.36	4.35	3.89	0.03	6/6/96	7,636,840	3.2	19.7
Bloomberg Barclays U.S. Aggregate Bond Index	0.63	2.90	6.14	8.74	5.32	4.30	3.82	0.03	0/0/30	7,030,040	3.2	13.7
BlackRock U.S. TIPS Fund M ⁸	1.13	4.41	6.12	8.42	5.17	3.87	3.62	0.03	7/30/02	3,833,858	1.6	13.2
Bloomberg Barclays U.S. TIPS Index	1.13	4.24	6.01	8.28	5.05	3.75	3.52	0.03	1130/02	3,033,030	1.0	13.2
BlackRock Equity Index Fund J 9	1.99	20.57	-3.04	7.56	10.78	10.76	14.04	0.01	3/5/97	21,030,387	8.8	24.7
• •								0.01	3/3/9/	21,030,367	0.0	24.7
S&P 500 Index BlackRock Russell 2500 Index Fund M ¹⁰	1.99	20.54	-3.08	7.51	10.73	10.73	13.99	0.04	0/00/00	F 0.47 004	0.4	
	2.93	26.59	-11.05	-4.67	4.11	5.51	11.56	0.04	9/30/08	5,847,691	2.4	3.4
Russell 2500 Index	2.89	26.56	-11.05		4.08	5.41	11.46					
BlackRock MSCI ACWI ex-U.S. IMI Index Fund M 11	4.36	17.11	-11.04		1.21	2.54	2.75	0.11	2/28/11	13,303,035	5.6	19.7
MSCI ACWI ex-U.S. IMI Index	4.36	16.96	-11.24	-4.74	0.96	2.30	2.56					
BlackRock MSCI ACWI IMI Index Non-Lendable Fund M 12	3.17	19.82	-6.95	1.42	5.91	6.51	7.55	0.05	4/12/13	28,130,877	11.8	35.1
MSCI ACWI IMI Index	3.20	19.83	-7.06	1.17	5.55	6.11	7.16					
TIAA Real Estate Account ¹³	-0.16	-1.46	-1.36	0.99	3.75	4.42	8.17	0.78	10/2/95	6,754,452	2.8	28.1
Custom Composite Benchmark 14	-0.22	-0.33	-2.70	-0.35	3.62	5.05	7.62			-,, - -		
TIAA Traditional Annuity RC ^{15,16,17,18}	0.32	0.99	1.97	4.00	4.05	4.15	4.24	0.49	8/1/05	16,596,775	6.9	29.5
Self-Directed Brokerage Account								JTJ	5, 1705	10,000,110	0.0	20.0
TIAA-CREF Self-Directed Account	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	1,122,567	0.5	0.4
Total	1114		, u	, u	,	, u				\$239,296,263		

Total \$239,296,263

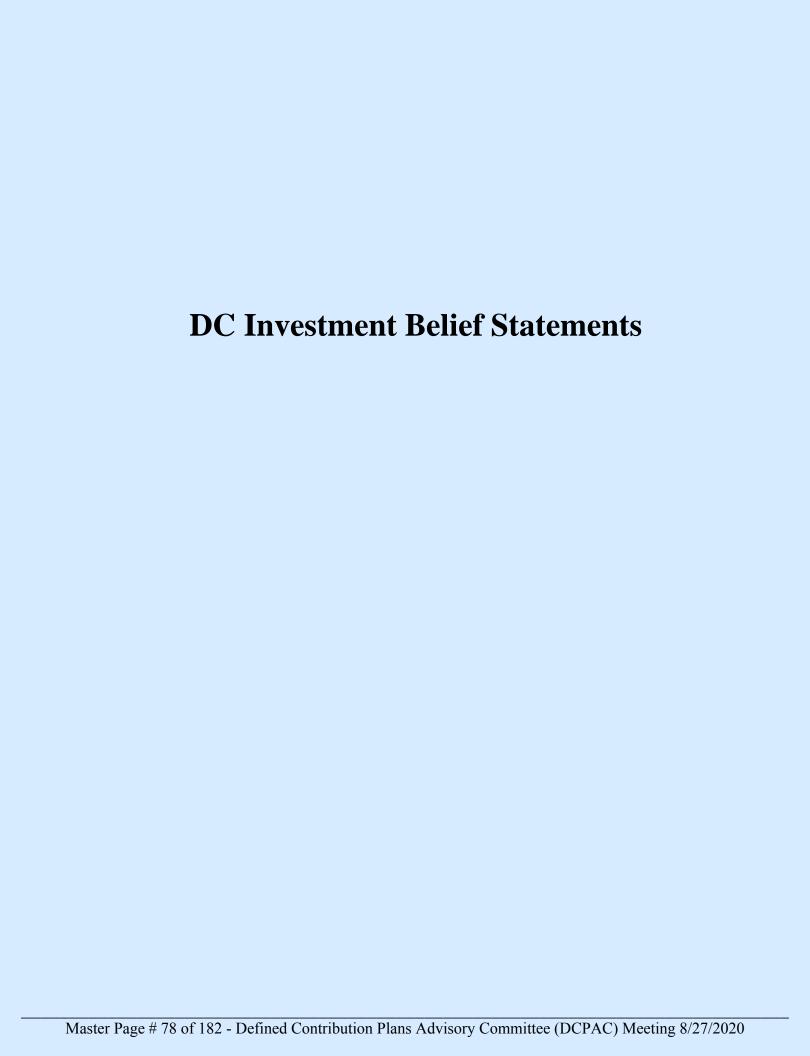
Footnotes >

- 1 If the fund was not in existence for 10 years, fund and corresponding benchmark returns shown represent performance from the since inception date.
- 2 Fund investment advisers may voluntarily agree to waive expenses. Expense waivers may be terminated at any time.
- 3 The BlackRock LifePath Index Funds O invest in the master LifePath Index Funds O invest in the master LifePath Index Funds F. The inception dates shown reflect the inception date of the master LifePath Funds F. The inception dates for most LifePath Funds O were 12/9/11. The 2055 Fund's O inception date was 12/12/11. the 2060 Fund's O inception date was 12/12/11. the 2060 Fund's O inception date was 12/12/11. the 2060 Fund's O inception date was 12/12/11.
- 4 Benchmarks are calculated using blended returns of third-party indices that proportionately reflect the respective weightings of the Funds' asset classes. Weightings are adjusted quarterly to reflect the Funds' 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 Index, Bloomberg Barclays U.S. Aggregate Bond Index. Bloomberg Barclays U.S. TIPS Index. FTSE EPRA/NAREIT Developed Index and the Bloomberg Commodity Index Total Return.
- 5 An investment in a money market fund is not insured or guaranteed by the Federal Deposit Insurance Corporation or any other government agency. Although the Fund seeks to preserve the value of your investment it is possible to lose money by investing in the Fund.
- 6 The current yield more closely reflects the earnings of the Fund than the total net return information.
- 7 The BlackRock U.S. Debt Fund M invests in the master Fund F. The inception date shown reflects the inception of the master Fund F. The inception date of Fund M was 7/20/12. Returns prior to Fund M's investment management fees.
- 8 The BlackRock U.S. Treasury Inflation-Protected Securities Fund M invests in the master Fund F. The inception date shown reflects the inception of the master Fund F. The inception date of Fund M was 7/20/12.

 Returns prior to Fund M's inception date are those of Fund F with deductions taken for Fund M' investment management fees.
- 9 The BlackRock Equity Index Fund J invests in the master Fund F. The inception date shown reflects the inception of the master Fund F. The inception date of Fund M was 3/20/17. Returns prior to Fund M's inception date are those of Fund F with deductions taken for Fund M's investment management fees.
- 10 The BlackRock Russell 2500 Fund M invests in the master Fund F. The inception date shown reflects the inception of the master Fund F. The inception date of Fund M was 1/30/13. Returns prior to Fund M's investment management fees.
- 11 The BlackRock MSCI ACWI ex-U.S. IMI Index Fund M invests in the master Fund F. The inception date shown reflects the inception of the master Fund F. The inception date of Fund M was 12/31/12. Returns prior to Fund M's investment management fees.
- 12 The BlackRock MSCI ACWI IMI Index Fund M invests in the master Fund F. Inception dates for the master Fund F and Fund M are both 4/12/13.
- 13 Transfers out of the TIAA Real Estate Account (REA) are limited to one per quarter. Currently, these transfers do not require a minimum transaction amount; however, in the future TIAA reserves the right, in its sole discretion, to impose minimum transaction levels, which levels will generally be at least \$1,000 (except for systematic transfers, which must be at least \$100) or your entire accumulation, if less. Participants may not make a lump-sum transfer into the REA if their aggregated balances across all contracts is greater than \$150,000. Systematic transfers and recurring contributions are not subject to this limitation.
- 14 Effective January 2014, the Custom Composite Index is 70% NCREIF Open End Diversified Core Equity (ODCE) Net Index, 20% Bloomberg Barclays 3-Month Treasury Bill Index, and 10% Dow Jones U.S. Select REIT Index. Prior periods include other representative indices. TIAA's investment management team does not manage its real estate portfolio to a specific published index benchmark. The Custom Composite Index represents a reasonable proxy of how TIAA allocates assets among real property, short-term investments, and REITs over time. The Virginia Retirement System anticipates that Fund returns may vary greatly from those of the Custom Composite Index. Benchmark returns are not available for months that do not end on a calendar quarter due to the fact that NCREIF ODCE Index returns are only published each calendar quarter.
- 15 Upon separation from service or retirement participants can convert their TIAA Traditional accumulation dollars amount to a lifetime income option or withdraw funds through a fixed period annuity ranging from five to 30 years or a Transfer Payout Annuity, which enables participants to move funds out of the TIAA Traditional Annuity in 7 annual installments for the Retirement Choice (RC) contract.
- Each installment includes a portion of principal and interest, based on the rate in effect when transfer or withdrawal funds are made. However, there are two exceptions to the payout installment. First, if the TIAA Traditional account balance is less than \$5,000, participants can transfer the total amount at any time following termination of employment, but only once during the life of the contract. Second, TIAA Traditional can be withdrawn or transferred to another company up to the full balance within 120 days following termination of employment, subject to 2.5% surrender charge. After the 120-day period, participants can withdraw funds only through a fixed period annuity ranging from five to 30 years or the Transfer Payout Annuity.
- 16 The TIAA Traditional Annuity RC contract has minimum guaranteed rate during the accumulation phase of 1% to 3%. The current minimum rate for the RC contract is 1%. Further, the TIAA Traditional Annuity RC contract applies to premiums deposited during the applicable calendar year and is guaranteed for 10 years, at which point the minimum rate for these premiums will be reset.
- 17 TIAA's annual credited rate on new money for the RC contract for the month of June was 3.00%.
- 18 The TIAA Traditional Annuity is not an investment for purposes of federal securities laws; it is a guaranteed insurance contract. Therefore, unlike a variable annuity or mutual fund, the TIAA Traditional Annuity does not include an identifiable expense ratio. The 49 basis points (0.49%) approximates the expense provision in the formula for determining TIAA Traditional Annuity returns inclusive of administrative and investment expenses. This expense provision is not guaranteed, it is subject to change.
- 19 May not equal 100% due to rounding
- 20 The data reflects the percentage of participants who selected a particular investment option as of June 30, 2020. There were 5,144 (RC contract) participants as of June 30, 2020.

Performance returns shown reflect all fund management fees and other investment related expenses, but do not reflect the TIAA annual administrative fee of \$66 (deducted at \$16.50 per quarter) which would further reduce the returns shown. Performance returns do not reflect redemption fees and/or surrender charges, if applicable.

All calculations assume reinvestment of dividends and capital gains. All returns are calculated in U.S dollars. Fund and benchmark returns are provided by TIAA and BlackRock. Although data is gathered from sources to be reliable, the Virginia Retirement System cannot guarantee completeness or accuracy.



VRS Defined Contribution Plans Investment Belief Statements

Approved by the Board of Trustees: November 12, 2015

1. Introduction

The VRS Board of Trustees developed a set of twelve Defined Contribution (DC) Plans Investment Beliefs intended to help guide the strategic management of the VRS DC Plans investment program. These DC Investment Beliefs represent a high-level framework for making decisions that often require balancing multiple, often competing, factors and issues. In addition, the DC Investment Beliefs provide context for VRS actions and reflect VRS values, with a focus on VRS maintaining its long-term commitment to provide benefits to its participants.

2. VRS DC Investment Belief Statements

With the assistance of an outside expert, the Board developed the following twelve DC Investment Belief Statements to guide the Board in future decisions and provide an anchor to the Board's stated goals and objectives.

- The DC Plans should continue to seek investment program best practices by establishing, monitoring, and reporting on key quantitative and qualitative measures of the DC investment program.
- 2) Given the increasing role of the DC Plans in VRS' primary retirement plan offerings, appropriate governance of the DC Plans is critical.
 - a) The VRS Board of Trustees has overall fiduciary authority over the DC investment program. To assist the Board in fulfilling its duty the Board has appointed a Defined Contribution Plans Advisory Committee to provide the Board with objective DC plan design and investment advice.
 - b) Governing documents such as the Charter for DC Plans Advisory Committee, DC Investment Policy Statements, Master Trusts and Plan Documents delineate various roles and responsibilities among the Board, the Committee, VRS Investment Staff and other interested parties.
- 3) Controlling and managing costs is critical to a successful DC plan investment program.

- a) Investment options should provide competitive net-of-cost risk-adjusted returns;
- b) The DC Plans' costs should be transparent to the individual participant;
- c) Given VRS' large-scale in the institutional marketplace, it is beneficial for the individual participant to access VRS' expertise and capabilities;
- d) Unbundling of DC administration and investment activities should lead to improved cost management.
- 4) The VRS should seek to inform DC plan participants about key retirement planning risks.
 - a) <u>Shortfall risk</u> the probability or potential that an individual may not meet his/her long-term retirement savings goals;
 - b) <u>Longevity risk</u> the potential that an individual may outlive his/her retirement assets;
 - c) <u>Drawdown risk</u> the impact that short-term declines in portfolio values can have on long-term success.
- 5) To the best extent possible, the Board should continue to explore and implement capabilities, controls, and procedures that are transferrable from VRS' DB activities to VRS' DC Plans, particularly with respect to investments.
- 6) The VRS DC Plans are responsible for offering a reasonable range of diversified portfolios to serve as the Plans' default investment option as well as to participants that do not have the time, desire, or expertise to manage a diversified portfolio.
- 7) The VRS DC Plans investment offerings must be wide-ranging to accommodate participants' varying investment knowledge and/or interest in managing their investments and address the difference between participants who are early on or in the midst of their careers and those who are nearing or in retirement.
 - a) Individuals must recognize their specific programs require a long-term, multi-decade planning/investment horizon;
 - b) Investment horizons are unique to each individual participant and may extend beyond the accumulation phase into the retirement (decumulation) phase; and

- c) Administrative and investment aspects of the overall program need to be unbundled/disaggregated to allow for maximum design flexibility.
- 8) A minimum level of participant investment education is necessary for a successful program.

Education should cover certain key topics:

- a) Key retirement planning risks (see Belief Statement 4);
- b) Accumulation phase vs. decumulation phase;
- c) How to analyze the costs associated with various investment options;
- d) Consideration of non-plan (outside) assets.
- 9) To provide investment flexibility to individual participants, a self-directed brokerage window can be an effective feature of the VRS DC Plans.
- 10) Well-structured alternative investments can enhance an individual participant's portfolio risk/reward profile. VRS DC Plans should examine methods for providing qualifying alternative investment options into its menu of pre-mixed diversified investment options, where feasible.
- 11) Managing the decumulation of retirement assets is critical. The VRS DC Plans will continue to explore viable solutions in this area.
- 12) Investment education can be a valuable resource to individual participants. In this context, VRS DC plan decision-makers should explore making available various investment advice and financial planning solutions/products.

Unbundled DC Plan Structure Investment Policy Statement

VRS Investment Policy Statement For An Unbundled Defined Contribution Plan Structure

Approved by the Board of Trustees: Effective January 2, 2020*

The Virginia Retirement System (VRS) sponsors several primary and supplemental defined contribution (DC) plans. Most plans operate fully under an unbundled (open architecture) approach whereby the investment function is contracted separately from the recordkeeping, enrollment and marketing functions. The purposes of the plans are set forth in the Plan Documents and Master Trusts, which are accessible on the VRS website at www.varetire.org.

This Investment Policy Statement has been adopted by the VRS Board of Trustees (Board) to provide guidelines for the investment offerings under an unbundled plan construct. Plans using an unbundled structure approach include the Deferred Compensation Plan of the Commonwealth of Virginia, the Virginia Cash Match Plan, the Optional Retirement Plan of the Commonwealth of Virginia for Political Appointees, the Optional Retirement Plan of the Commonwealth of Virginia for Public School Superintendents, the Virginia Supplemental Retirement Plan, the defined contribution component of the Hybrid Retirement Plan and the Optional Retirement Plan of the Commonwealth of Virginia for Employees of Institutions of Higher Education.

1. Investment Objectives

In a defined contribution investment program, each participant has his or her own risk tolerance, time horizon and investment objectives. Participants are responsible for their own investment decisions. To help meet these varying needs, the VRS unbundled DC plans seek to provide participants with an array of investment choices across a range of asset classes, risk levels, and investment strategies so they can construct and/or invest in portfolios that address their individual needs, and do so using investment vehicles and structures that provide competitive risk-adjusted returns at a reasonable cost.

The Board recognizes that DC plan participants have varying levels of investment knowledge and/or interest in actively managing their investments. The following organizational framework has been designed to categorize the types of investment options available to VRS unbundled DC plan participants:

 <u>Do-It-For-Me Investors</u>: These investors may have limited investment knowledge, confidence, or interest in managing their investments. For whatever reason, they prefer a pre-packaged, diversified investment option that has been designed to reasonably fit most people of their ages and retirement planning horizons. To meet this need, a series of Target Date Portfolios is made available whose investment policy, glide paths, and investment strategies are expected to

^{*} Originally adopted February 16, 2012. Amended November 14, 2013, February 9, 2017 and January 2, 2020.

meet the general needs of the average DC plan participant, based on a periodic analysis of the demographic characteristics of participants and the long-term investment opportunity set.

- Help-Me-Do-It Investors: These investors have some knowledge of investments and want to be more involved in structuring their portfolios, but they would like the ability to pick from a menu of fund options that have been screened by VRS and for which investment fees and expenses have been negotiated to institutional price levels through VRS bargaining power. To meet this need, a menu of Core Investment Options is made available, each targeted to a different asset class or strategy. The core fund lineup will generally consist of funds representing the constituent asset classes included in the target date portfolios, but there may be funds included in the core lineup that are not included in the target date portfolios, and vice versa.
- <u>Do-It-Myself Investors</u>: Some investors are very knowledgeable and/or desire to take a very active approach to their investments, and therefore may desire investment alternatives in addition to those offered as part of the Target Date Portfolios or Core Investment Options. To meet this need, a self-directed brokerage account (SDBA) is made available to self-designated knowledgeable investors who are willing to accept all risks, costs, and operational rules and procedures related to participating in a SDBA.

2. Decision Making

The Board is responsible for the following:

- Selection of the default investment option. (Appendix 1)
- Within Target Date Portfolios, ensuring a robust process is used to establish the glide path's asset allocation and to determine which asset classes and strategies to include. (Appendix 1)
- Within the Core Investment Options, included asset classes. (Appendix 2)
- Whether to offer a Self-Directed Brokerage Account (SDBA). (Appendix 3)
- Whether individual investment advice will be provided and the terms on which it will be available to participants.

Beyond these guidelines, the Board delegates to the Chief Investment Officer (CIO) all other decisions related to VRS unbundled defined contribution investments. Changes that are contemplated are expected to be done with due consideration of administrative needs as to the operations, outreach, and communications, etc. The CIO or a designee will report regularly to the Defined Contribution Plans Advisory Committee (DCPAC) and Board on the status and investment results of the DC investment program. Included in such reporting will be performance benchmarks selected by the CIO to appropriately measure or compare the risk and investment objectives of the various investment options.

In carrying out its fiduciary duty to oversee DC investments, the Board will consider advice and recommendations provided by the DCPAC. The specific duties and responsibilities of the DCPAC are described in the DCPAC Charter.

Additionally, the Board developed a set of twelve Defined Contribution Plans Investment Belief Statements intended to help guide the strategic management of the VRS DC investment program.

3. Plan Level Policies

The CIO has full authority to hire and terminate investment managers and negotiate or renegotiate fees. The CIO shall develop policies and procedures for hiring, monitoring, and terminating investment managers and other investment related service providers. The CIO shall also develop procedures for appropriate mapping of plan assets and/or funds as situations arise. Mapping means the transfer of assets from a discontinued investment option or terminated investment manager to another investment option or investment manager under the DC plans. The CIO works with the Director to coordinate implementation relating to changes to the unbundled DC plans investment program and may consult with the DCPAC as needed.

The CIO is responsible for ensuring that adequate due diligence is being performed in the evaluation of potential and existing investments, and that all investment activity will be in compliance with applicable regulatory requirements.

4. Trading Restrictions and Redemption Fees

The Board and the investment managers may impose restrictions and/or fees that discourage investment trading that could have an adverse impact on the management of a fund, other plan participants, or clients of the fund's management.

5. Best Execution

Generally, all investment transactions executed on behalf of the plans should be made on the basis of best execution. VRS defines best execution as the process and price that results in the best overall performance impact, as judged by the portfolio manager, taking into account current market conditions. VRS will generally discourage the use of soft dollar arrangements, and where such arrangements are utilized, staff will review this usage for reasonableness.

6. Use of Consultants / Service Providers

The CIO has the authority to hire consultants, research providers, and other service providers providing that such expenditures are in alignment with the Board approved operating budget.

7. Code of Ethics

The investment staff will conduct its affairs in a manner that reflects the highest standards of ethical conduct. The staff is expected to comply with the CFA Institute of Code of Ethics and Standards of Professional Conduct, a copy of which is attached. Updated versions of the attached CFA document are accessible on the CFA Institute website at www.cfainstitute.org.

Target Date Portfolios Effective November 14, 2013 Appendix 1

A series of target date portfolios with investment policy glide paths and investment strategies that are expected to meet the general needs of the average DC plan participant in different age cohorts is offered through the plans. A glide path represents the changes made to the asset allocation mix over time as the target date approaches. There is a higher equity allocation in the longer dated portfolios because of the long-term investment time horizon. Over time, the equity allocation decreases as the investment time horizon decreases.

The Board expects target date portfolios to be broadly diversified. These portfolios may include exposure to various sub-segments of the broad asset classes as well as to alternative asset classes as determined by the target date provider using reasonable optimization techniques to measure the risk/reward trade off. Asset classes used within target date portfolios may include: large cap domestic equity, small/mid cap domestic equity, international equity, emerging market equity and debt, domestic core fixed income, high-yield bonds, inflation-protected securities, international / global fixed income, commodities, real estate and cash. A target date portfolio is not required to include each of these asset classes and may include other asset classes.

The target date portfolios' glide paths shall be based on sound investment theory and investment methodology as well as reasonable capital market assumptions. Plan demographics shall be taken into consideration when developing a custom glide path or selecting an off the shelf provider. Based on work done by a consultant together with VRS staff, advice from the DCPAC, and general investment philosophy of VRS, the Board expects to employ a glide path that is more on the conservative side of the target date portfolios available at the time of the study. The percentage allocation to equities in a more conservative glide path is comparatively lower than that of an aggressive glide path at retirement.

The target date portfolios serve as the unbundled DC plans default investment option.

Asset Classes: Core Funds Effective November 14, 2013 Appendix 2

Core investment options shall represent the broad asset classes available in the capital markets to the extent they are practical and, when prudent, certain sub-asset classes. The core fund lineup will generally consist of funds representing the constituent asset classes included in the target date portfolios, but there may be funds included in the core lineup that are not included in the target date portfolios, and vice versa. From time to time additional asset classes may be added or existing asset classes may be deleted in order to maintain an array of investment options that address participants' changing needs or changes in the investment industry.

The Board delegates to the CIO decisions as to 1) whether a fund investment option shall utilize a passive or active investment strategy or a combination of both; 2) whether a fund should exhibit a large, mid, or small capitalization structure or a combination thereof; 3) whether a fund should exhibit a growth, value, blended style, or targeted volatility orientation; 4) whether a fund should have a single investment manager or use multiple investment managers or firms; and 5) whether a fund invests in a single asset class or more than one asset class.

The following asset class categories are considered for possible inclusion in the plans:

Capital Preservation

- Money Market
- Stable Value

Fixed Income

- Investment grade (short-term, intermediate, long-term)
- Inflation-Protected
- High-Yield
- International / Global

Global Public Equity

- U.S. Equity
- Non-U.S. Developed Equity
- Emerging Equity

Real Estate (public & private)

Asset Allocation

• VRS unitized investment portfolio (VRSIP) – includes all asset classes utilized in the VRS investment portfolio.

Self-Directed Brokerage Account Effective November 14, 2013 Appendix 3

A Self-Directed Brokerage Account (SDBA) is available for self-designated knowledgeable investors who acknowledge and understand the SDBA's operational rules and procedures as well as the risks and costs associated with the investments allowed in the SDBA. Subject to limitations imposed by the SDBA provider, allowable SDBA investments include mutual funds, exchange traded funds (ETFs) and individual securities. Participants must complete the SDBA enrollment materials prior to investing in the SDBA.

The SDBA is made available through the plans' third party administrator and is not contracted for separately. The third party administrator may change the SDBA provider from time to time.



CODE OF ETHICS AND STANDARDS OF PROFESSIONAL CONDUCT

PREAMBLE

The CFA Institute Code of Ethics and Standards of Professional Conduct are fundamental to the values of CFA Institute and essential to achieving its mission to lead the investment profession globally by promoting the highest standards of ethics, education, and professional excellence for the ultimate benefit of society. High ethical standards are critical to maintaining the public's trust in financial markets and in the investment profession. Since their creation in the 1960s, the Code and Standards have promoted the integrity of CFA Institute members and served as a model for measuring the ethics of investment professionals globally, regardless of job function, cultural differences, or local laws and regulations. All CFA Institute members (including holders of the Chartered Financial Analyst® [CFA®] designation) and CFA candidates must abide by the Code and Standards and are encouraged to notify their employer of this responsibility. Violations may result in disciplinary sanctions by CFA Institute. Sanctions can include revocation of membership, revocation of candidacy in the CFA Program, and revocation of the right to use the CFA designation.

THE CODE OF ETHICS

Members of CFA Institute (including CFA charterholders) and candidates for the CFA designation ("Members and Candidates") must:

- Act with integrity, competence, diligence, respect and in an ethical manner with the public, clients, prospective clients, employers, employees, colleagues in the investment profession, and other participants in the global capital markets.
- Place the integrity of the investment profession and the interests of clients above their own personal interests.
- Use reasonable care and exercise independent professional judgment when conducting investment analysis, making investment recommendations, taking investment actions, and engaging in other professional activities.
- Practice and encourage others to practice in a professional and ethical manner that will reflect credit on themselves and the profession.
- Promote the integrity and viability of the global capital markets for the ultimate benefit of society.
- Maintain and improve their professional competence and strive to maintain and improve the competence of other investment professionals.

STANDARDS OF PROFESSIONAL CONDUCT

I. PROFESSIONALISM

- A. Knowledge of the Law. Members and Candidates must understand and comply with all applicable laws, rules, and regulations (including the CFA Institute Code of Ethics and Standards of Professional Conduct) of any government, regulatory organization, licensing agency, or professional association governing their professional activities. In the event of conflict, Members and Candidates must comply with the more strict law, rule, or regulation. Members and Candidates must not knowingly participate or assist in and must dissociate from any violation of such laws, rules, or regulations.
- B. Independence and Objectivity. Members and Candidates must use reasonable care and judgment to achieve and maintain independence and objectivity in their professional activities. Members and Candidates must not offer, solicit, or accept any gift, benefit, compensation, or consideration that reasonably could be expected to compromise their own or another's independence and objectivity.

- **C. Misrepresentation.** Members and Candidates must not knowingly make any misrepresentations relating to investment analysis, recommendations, actions, or other professional activities.
- D. Misconduct. Members and Candidates must not engage in any professional conduct involving dishonesty, fraud, or deceit or commit any act that reflects adversely on their professional reputation, integrity, or competence.

II. INTEGRITY OF CAPITAL MARKETS

- **A. Material Nonpublic Information.** Members and Candidates who possess material nonpublic information that could affect the value of an investment must not act or cause others to act on the information.
- **B. Market Manipulation.** Members and Candidates must not engage in practices that distort prices or artificially inflate trading volume with the intent to mislead market participants.

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III. DUTIES TO CLIENTS

- A. Loyalty, Prudence, and Care. Members and Candidates have a duty of loyalty to their clients and must act with reasonable care and exercise prudent judgment. Members and Candidates must act for the benefit of their clients and place their clients' interests before their employer's or their own interests.
- B. Fair Dealing. Members and Candidates must deal fairly and objectively with all clients when providing investment analysis, making investment recommendations, taking investment action, or engaging in other professional activities.

C. Suitability.

- When Members and Candidates are in an advisory relationship with a client, they must:
 - **a.** Make a reasonable inquiry into a client's or prospective client's investment experience, risk and return objectives, and financial constraints prior to making any investment recommendation or taking investment action and must reassess and update this information regularly.
 - b. Determine that an investment is suitable to the client's financial situation and consistent with the client's written objectives, mandates, and constraints before making an investment recommendation or taking investment action.
 - **c.** Judge the suitability of investments in the context of the client's total portfolio.
- 2. When Members and Candidates are responsible for managing a portfolio to a specific mandate, strategy, or style, they must make only investment recommendations or take only investment actions that are consistent with the stated objectives and constraints of the portfolio.
- D. Performance Presentation. When communicating investment performance information, Members and Candidates must make reasonable efforts to ensure that it is fair, accurate, and complete.
- E. Preservation of Confidentiality. Members and Candidates must keep information about current, former, and prospective clients confidential unless:
 - The information concerns illegal activities on the part of the client or prospective client,
 - 2. Disclosure is required by law, or
 - The client or prospective client permits disclosure of the information.

IV. DUTIES TO EMPLOYERS

- **A. Loyalty.** In matters related to their employment, Members and Candidates must act for the benefit of their employer and not deprive their employer of the advantage of their skills and abilities, divulge confidential information, or otherwise cause harm to their employer.
- B. Additional Compensation Arrangements. Members and Candidates must not accept gifts, benefits, compensation, or consideration that competes with or might reasonably be expected to create a conflict of interest with their employer's interest unless they obtain written consent from all parties involved.
- C. Responsibilities of Supervisors. Members and Candidates must make reasonable efforts to ensure that anyone subject to their supervision or authority complies with applicable laws, rules, regulations, and the Code and Standards.

V. INVESTMENT ANALYSIS, RECOMMENDATIONS, AND ACTIONS

- A. Diligence and Reasonable Basis. Members and Candidates must:
 - Exercise diligence, independence, and thoroughness in analyzing investments, making investment recommendations, and taking investment actions.
 - Have a reasonable and adequate basis, supported by appropriate research and investigation, for any investment analysis, recommendation, or action.
- **B. Communication with Clients and Prospective Clients.** Members and Candidates must:
 - Disclose to clients and prospective clients the basic format and general principles of the investment processes they use to analyze investments, select securities, and construct portfolios and must promptly disclose any changes that might materially affect those processes.
 - Disclose to clients and prospective clients significant limitations and risks associated with the investment process.
 - Use reasonable judgment in identifying which factors are important to their investment analyses, recommendations, or actions and include those factors in communications with clients and prospective clients.
 - Distinguish between fact and opinion in the presentation of investment analysis and recommendations.
- C. Record Retention. Members and Candidates must develop and maintain appropriate records to support their investment analyses, recommendations, actions, and other investment-related communications with clients and prospective clients.

VI. CONFLICTS OF INTEREST

- A. Disclosure of Conflicts. Members and Candidates must make full and fair disclosure of all matters that could reasonably be expected to impair their independence and objectivity or interfere with respective duties to their clients, prospective clients, and employer. Members and Candidates must ensure that such disclosures are prominent, are delivered in plain language, and communicate the relevant information effectively.
- B. Priority of Transactions. Investment transactions for clients and employers must have priority over investment transactions in which a Member or Candidate is the beneficial owner.
- **C. Referral Fees.** Members and Candidates must disclose to their employer, clients, and prospective clients, as appropriate, any compensation, consideration, or benefit received from or paid to others for the recommendation of products or services.

VII.RESPONSIBILITIES AS A CFA INSTITUTE MEMBER OR CFA CANDIDATE

- A. Conduct as Participants in CFA Institute Programs. Members and Candidates must not engage in any conduct that compromises the reputation or integrity of CFA Institute or the CFA designation or the integrity, validity, or security of the CFA Institute programs.
- B. Reference to CFA Institute, the CFA Designation, and the CFA Program. When referring to CFA Institute, CFA Institute membership, the CFA designation, or candidacy in the CFA Program, Members and Candidates must not misrepresent or exaggerate the meaning or implications of membership in CFA Institute, holding the CFA designation, or candidacy in the CFA program.



Bundled DC Plan Structure Investment Policy Statement

VRS Investment Policy Statement For A Bundled Defined Contribution Plan Structure

Approved by the Board of Trustees: Effective January 2, 2020*

This Investment Policy Statement has been adopted by the VRS Board of Trustees (Board) to provide guidelines for the investment offerings provided to participants of the Optional Retirement Plan of the Commonwealth of Virginia for Employees of Institutions of Higher Education (ORPHE) when a bundled plan construct is utilized. The purpose of the plan is set forth in the Plan Document and Master Trust, which are accessible on the VRS website at www.varetire.org. Bundled plans use the same company for investments, recordkeeping, enrollment and marketing services. A bundled plan provider's investment platform may include the provider's proprietary investment options as well as non-proprietary options.

1. Investment Objectives

In a defined contribution (DC) investment program, each participant has his or her own risk tolerance, time horizon and investment objectives. Participants are responsible for their own investment decisions. To help meet these varying needs, the VRS ORPHE seeks to provide participants with an array of investment choices across a range of asset classes, risk levels, and investment strategies so they can construct and/or invest in portfolios that address their individual needs, and do so using investment vehicles and structures that provide competitive risk-adjusted returns at a reasonable cost within a bundled plan construct.

The Board recognizes that DC plan participants have varying levels of investment knowledge and/or interest in actively managing their investments, and therefore may desire investment alternatives in addition to those offered as part of a core investment lineup. To meet this need, a self-directed brokerage account (SDBA) is made available to self-designated knowledgeable investors who are willing to accept all risks, costs, and operational rules and procedures related to participating in a SDBA.

2. Decision Making

The Board is responsible for the following:

- Selection of the plan default investment option. (Appendix 1)
- Within the fund lineup, included asset classes. (Appendix 2)
- Whether to offer a Self-Directed Brokerage Account (SDBA). (Appendix 3)

^{*}Originally adopted February 16, 2012. Amended November 14, 2013, February 9, 2017 and January 2, 2020.

• Whether individual investment advice will be provided and the terms on which it will be available to participants.

Beyond these guidelines, the Board delegates to the Chief Investment Officer (CIO) all other investment decisions related to the ORPHE as it relates to the bundled plan structure. The CIO or a designee will report regularly to the Defined Contribution Plans Advisory Committee (DCPAC) and Board on the status and investment results of the investment program. Included in such reporting will be performance benchmarks selected by the CIO to appropriately measure or compare the risk and investment objectives of the various investment options.

In carrying out its fiduciary duty to oversee DC investments, the Board will consider advice and recommendations provided by the DCPAC. The specific duties and responsibilities of the DCPAC are described in the DCPAC Charter.

Additionally, the Board developed a set of twelve Defined Contribution Plans Investment Belief Statements intended to help guide the strategic management of the VRS DC investment program.

3. Plan Level Policies

The CIO shall work with the VRS Director and the DCPAC relative to hiring and terminating a bundled plan provider. The CIO has full authority to select or eliminate fund options within a bundled plan provider's investment program using reasonable processes and to negotiate or renegotiate investment fees. The CIO shall also develop procedures for appropriate mapping of bundled plan assets and/or funds as situations arise. Mapping means the transfer of assets from a discontinued investment option or terminated provider to another investment option or provider under the ORPHE. The CIO works with the Director to coordinate implementation relating to changes to the bundled plan investment program and may consult with the DCPAC as needed.

The CIO is responsible for ensuring that adequate due diligence is being performed in the evaluation of potential and existing investments, and that all investment activity will be in compliance with applicable regulatory requirements.

4. Trading Restrictions and Redemption Fees

The Board and the bundled plan provider(s) may impose restrictions and/or fees that discourage investment trading that could have an adverse impact on the management of a fund, other participants, or clients of the provider companies.

5. Best Execution

Taking into consideration the nature of a bundled DC plan structure, generally all investment transactions executed on behalf of the plan should be made on the basis of best execution. VRS defines best execution as the process and price that results in the best overall performance impact, as judged by the portfolio manager, taking into account current market conditions. VRS will generally discourage the use of soft dollar arrangements, and where such arrangements are utilized, staff will review this usage for reasonableness.

6. Use of Consultants / Service Providers

The CIO has the authority to hire consultants, research providers, and other service providers providing that such expenditures are in alignment with the Board approved operating budget.

7. Code of Ethics

The investment staff will conduct its affairs in a manner that reflects the highest standards of ethical conduct. The staff is expected to comply with the CFA Institute of Code of Ethics and Standards of Professional Conduct, a copy of which is attached. Updated versions of the attached CFA document are accessible on the CFA Institute website at www.cfainstitute.org.

Default Investment Option Effective January 2, 2020 Appendix 1

TIAA-CREF Program: BlackRock LifePath Index Funds

Asset Classes: Investment Options Effective November 14, 2013 Appendix 2

Investment options shall represent the broad asset classes available in the capital markets to the extent they are practical and, when prudent, certain sub-asset classes. From time to time additional asset classes may be added, or existing asset classes may be deleted in order to maintain an array of investment options that address participants' changing needs or changes in the investment industry.

The Board notes that due to the nature of the bundled plan structure investment decisions are limited to investment options that are, or can be made, available on a provider's investment platform. It is possible that bundled plan constraints may limit the scope of investment options available to participants, limit access to more attractive options within the asset classes and limit the extent to which negotiations can be made relative to investment management and investment related fees.

The Board delegates to the CIO decisions as to 1) whether a fund investment option shall utilize a passive or active investment strategy or a combination of both; 2) whether a fund should exhibit a large, mid, or small capitalization structure or a combination thereof; 3) whether a fund should exhibit a growth, value, blended style, or targeted volatility orientation; 4) whether a fund should have a single investment manager or use multiple investment managers or firms and; 5) whether a fund invests in a single asset class or more than one asset class.

The following asset class categories are considered for possible inclusion in the plan:

Capital Preservation

- Money Market
- Stable Value
- Fixed Annuity

Fixed Income

- Investment grade (short-term, intermediate, long-term)
- Inflation-Protected
- High-Yield
- International / Global

Global Public Equity

- U.S. Equity
- Non-U.S. Developed Equity
- Emerging Equity

Real Estate (public & private)

Asset Allocation

- Target Date
- Risk Based

The Board expects asset allocation funds to be diversified portfolios. These portfolios may include exposure to various sub-segments of the broad asset classes as well as to alternative asset classes as determined by the provider company using reasonable optimization techniques to measure the risk/reward trade off. Asset classes used within asset allocation funds may include: large cap domestic equity, small/mid cap domestic equity, international equity, emerging market equity and debt, domestic core fixed income, high-yield bonds, inflation-protected securities, international / global fixed income, commodities, real estate and cash. An asset allocation fund is not required to include each of these asset classes and may include other asset classes. Glide paths for target date portfolios shall be based on sound investment theory and investment methodology as well as reasonable capital market assumptions. A glide path represents the changes made to the asset allocation mix over time as the target date approaches. There is a higher equity allocation in the longer dated portfolios because of the long-term investment time horizon. Over time, the equity allocation decreases as the investment time horizon decreases.

Self-Directed Brokerage Account Effective February 9, 2017 Appendix 3

A Self-Directed Brokerage Account (SDBA) is made available through the plan's bundled provider(s) and is not contracted for separately. A bundled plan provider may change its SDBA provider from time to time.

The SDBA is available for self-designated knowledgeable investors who acknowledge and understand the SDBA's operational rules and procedures as well as the risks and costs associated with the investments allowed in the SDBA. Subject to limitations imposed by the SDBA provider, allowable investments include mutual funds, exchange traded funds (ETFs) and individual securities. Participants must complete the SDBA enrollment materials prior to investing the SDBA.



CODE OF ETHICS AND STANDARDS OF PROFESSIONAL CONDUCT

PREAMBLE

The CFA Institute Code of Ethics and Standards of Professional Conduct are fundamental to the values of CFA Institute and essential to achieving its mission to lead the investment profession globally by promoting the highest standards of ethics, education, and professional excellence for the ultimate benefit of society. High ethical standards are critical to maintaining the public's trust in financial markets and in the investment profession. Since their creation in the 1960s, the Code and Standards have promoted the integrity of CFA Institute members and served as a model for measuring the ethics of investment professionals globally, regardless of job function, cultural differences, or local laws and regulations. All CFA Institute members (including holders of the Chartered Financial Analyst® [CFA®] designation) and CFA candidates must abide by the Code and Standards and are encouraged to notify their employer of this responsibility. Violations may result in disciplinary sanctions by CFA Institute. Sanctions can include revocation of membership, revocation of candidacy in the CFA Program, and revocation of the right to use the CFA designation.

THE CODE OF ETHICS

Members of CFA Institute (including CFA charterholders) and candidates for the CFA designation ("Members and Candidates") must:

- Act with integrity, competence, diligence, respect and in an ethical manner with the public, clients, prospective clients, employers, employees, colleagues in the investment profession, and other participants in the global capital markets.
- Place the integrity of the investment profession and the interests of clients above their own personal interests.
- Use reasonable care and exercise independent professional judgment when conducting investment analysis, making investment recommendations, taking investment actions, and engaging in other professional activities.
- Practice and encourage others to practice in a professional and ethical manner that will reflect credit on themselves and the profession.
- Promote the integrity and viability of the global capital markets for the ultimate benefit of society.
- Maintain and improve their professional competence and strive to maintain and improve the competence of other investment professionals.

STANDARDS OF PROFESSIONAL CONDUCT

I. PROFESSIONALISM

- A. Knowledge of the Law. Members and Candidates must understand and comply with all applicable laws, rules, and regulations (including the CFA Institute Code of Ethics and Standards of Professional Conduct) of any government, regulatory organization, licensing agency, or professional association governing their professional activities. In the event of conflict, Members and Candidates must comply with the more strict law, rule, or regulation. Members and Candidates must not knowingly participate or assist in and must dissociate from any violation of such laws, rules, or regulations.
- B. Independence and Objectivity. Members and Candidates must use reasonable care and judgment to achieve and maintain independence and objectivity in their professional activities. Members and Candidates must not offer, solicit, or accept any gift, benefit, compensation, or consideration that reasonably could be expected to compromise their own or another's independence and objectivity.

- **C. Misrepresentation.** Members and Candidates must not knowingly make any misrepresentations relating to investment analysis, recommendations, actions, or other professional activities.
- D. Misconduct. Members and Candidates must not engage in any professional conduct involving dishonesty, fraud, or deceit or commit any act that reflects adversely on their professional reputation, integrity, or competence.

II. INTEGRITY OF CAPITAL MARKETS

- **A. Material Nonpublic Information.** Members and Candidates who possess material nonpublic information that could affect the value of an investment must not act or cause others to act on the information.
- **B. Market Manipulation.** Members and Candidates must not engage in practices that distort prices or artificially inflate trading volume with the intent to mislead market participants.

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III. DUTIES TO CLIENTS

- A. Loyalty, Prudence, and Care. Members and Candidates have a duty of loyalty to their clients and must act with reasonable care and exercise prudent judgment. Members and Candidates must act for the benefit of their clients and place their clients' interests before their employer's or their own interests.
- **B. Fair Dealing.** Members and Candidates must deal fairly and objectively with all clients when providing investment analysis, making investment recommendations, taking investment action, or engaging in other professional activities.

C. Suitability.

- When Members and Candidates are in an advisory relationship with a client, they must:
 - **a.** Make a reasonable inquiry into a client's or prospective client's investment experience, risk and return objectives, and financial constraints prior to making any investment recommendation or taking investment action and must reassess and update this information regularly.
 - b. Determine that an investment is suitable to the client's financial situation and consistent with the client's written objectives, mandates, and constraints before making an investment recommendation or taking investment action.
 - **c.** Judge the suitability of investments in the context of the client's total portfolio.
- 2. When Members and Candidates are responsible for managing a portfolio to a specific mandate, strategy, or style, they must make only investment recommendations or take only investment actions that are consistent with the stated objectives and constraints of the portfolio.
- D. Performance Presentation. When communicating investment performance information, Members and Candidates must make reasonable efforts to ensure that it is fair, accurate, and complete.
- E. Preservation of Confidentiality. Members and Candidates must keep information about current, former, and prospective clients confidential unless:
 - The information concerns illegal activities on the part of the client or prospective client,
 - 2. Disclosure is required by law, or
 - The client or prospective client permits disclosure of the information.

IV. DUTIES TO EMPLOYERS

- **A. Loyalty.** In matters related to their employment, Members and Candidates must act for the benefit of their employer and not deprive their employer of the advantage of their skills and abilities, divulge confidential information, or otherwise cause harm to their employer.
- B. Additional Compensation Arrangements. Members and Candidates must not accept gifts, benefits, compensation, or consideration that competes with or might reasonably be expected to create a conflict of interest with their employer's interest unless they obtain written consent from all parties involved.
- C. Responsibilities of Supervisors. Members and Candidates must make reasonable efforts to ensure that anyone subject to their supervision or authority complies with applicable laws, rules, regulations, and the Code and Standards.

V. INVESTMENT ANALYSIS, RECOMMENDATIONS, AND ACTIONS

- A. Diligence and Reasonable Basis. Members and Candidates must:
 - Exercise diligence, independence, and thoroughness in analyzing investments, making investment recommendations, and taking investment actions.
 - Have a reasonable and adequate basis, supported by appropriate research and investigation, for any investment analysis, recommendation, or action.
- **B. Communication with Clients and Prospective Clients.** Members and Candidates must:
 - Disclose to clients and prospective clients the basic format and general principles of the investment processes they use to analyze investments, select securities, and construct portfolios and must promptly disclose any changes that might materially affect those processes.
 - Disclose to clients and prospective clients significant limitations and risks associated with the investment process.
 - Use reasonable judgment in identifying which factors are important to their investment analyses, recommendations, or actions and include those factors in communications with clients and prospective clients.
 - Distinguish between fact and opinion in the presentation of investment analysis and recommendations.
- C. Record Retention. Members and Candidates must develop and maintain appropriate records to support their investment analyses, recommendations, actions, and other investment-related communications with clients and prospective clients.

VI. CONFLICTS OF INTEREST

- A. Disclosure of Conflicts. Members and Candidates must make full and fair disclosure of all matters that could reasonably be expected to impair their independence and objectivity or interfere with respective duties to their clients, prospective clients, and employer. Members and Candidates must ensure that such disclosures are prominent, are delivered in plain language, and communicate the relevant information effectively.
- B. Priority of Transactions. Investment transactions for clients and employers must have priority over investment transactions in which a Member or Candidate is the beneficial owner.
- **C. Referral Fees.** Members and Candidates must disclose to their employer, clients, and prospective clients, as appropriate, any compensation, consideration, or benefit received from or paid to others for the recommendation of products or services.

VII.RESPONSIBILITIES AS A CFA INSTITUTE MEMBER OR CFA CANDIDATE

- A. Conduct as Participants in CFA Institute Programs. Members and Candidates must not engage in any conduct that compromises the reputation or integrity of CFA Institute or the CFA designation or the integrity, validity, or security of the CFA Institute programs.
- B. Reference to CFA Institute, the CFA Designation, and the CFA Program. When referring to CFA Institute, CFA Institute membership, the CFA designation, or candidacy in the CFA Program, Members and Candidates must not misrepresent or exaggerate the meaning or implications of membership in CFA Institute, holding the CFA designation, or candidacy in the CFA program.



VRS Defined Contribution Plans Quarterly Review



As of 2nd Quarter 2020



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VRS Defined Contribution Plans



DC Plan Assets and Accounts

Note: All data is as of 6/30/2020 unless otherwise stated.

Assets and Participants – Eight VRS Unbundled Defined Contribution Plans

DCP
Virginia Retirement System

Note: Includes Beneficiary Plans and Forfeiture Accounts

	June 30, 2018		June 30, 2019		2018	to 2019	June 30, 20	2019 to 2020		
	Assets	Accounts	Assets	Accounts	(%) Change in Assets	(%) Change in Accounts	Assets	Accounts		(%) Change in Accounts
457 Deferred Compensation ¹	\$2,700,736,812	79,398	\$2,875,695,924	80,189	6.48%	1.00%	\$3,271,494,038	87,033	13.76%	8.53%
401(a) Cash Match	\$456,617,544	70,881	\$479,319,288	71,089	4.97%	0.29%	\$493,196,551	72,351	2.90%	1.78%
ORP Political Appointees	\$15,162,677	361	\$17,100,768	372	12.78%	3.05%	\$18,822,448	383	10.07%	2.96%
ORP School Superintendents	\$221,183	2	\$224,100	2	1.32%	0.00%	\$226,194	2	0.93%	0.00%
Supplemental Retirement	\$136,647	2	\$143,039	2	4.68%	0.00%	\$144,130	2	0.76%	0.00%
ORP Higher Education ²	\$964,843	61	\$2,002,070	152	107.50%	149.18%	\$114,903,874	2,272	5,639.25%	1,394.74%
Hybrid 401 ³	\$234,413,645	113,952	\$362,907,040	139,878	54.81%	22.75%	\$514,439,428	164,834	41.76%	17.84%
Hybrid 457	\$94,842,790	59,489	\$157,611,982	60,592	66.18%	1.85%	\$239,688,933	116,758	52.08%	92.70%
Total	\$3,503,096,141	324,146	3,895,004,212	352,276	11.19%	8.68%	\$4,652,915,597	443,635	19.46%	25.93%

¹ Includes reserve account

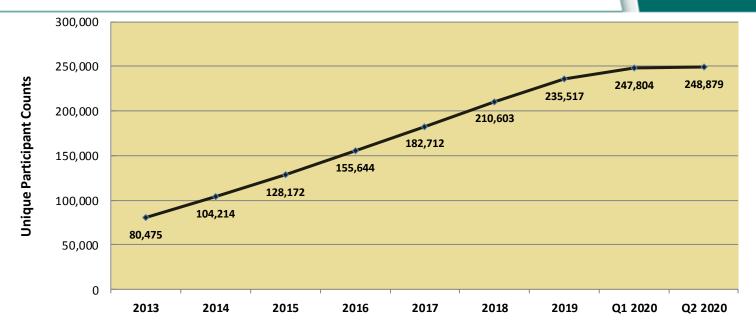
² Includes Welcome Account from Plan Transition = \$18,288.55

³ Includes 767 forfeiture accounts with balances = \$2,767,139.72

Unique Participant Count – All Plans

Note: Forfeiture Accounts Excluded





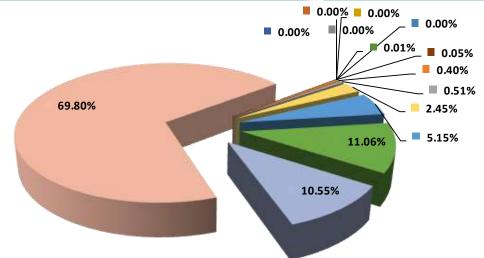
Period	Unique Participant Counts
2013	80,475
2014	104,214
2015	128,172
2016	155,644
2017	182,712
2018	210,603
2019	235,517
Q1 2020	247,804
Q2 2020	248,879

Assets and Accounts – All Plans

Note: Includes Forfeiture Accounts



- Hybrid 457 Beneficiary Plan
- Hybrid 401(a) Beneficiary Plan
- ORP Political Appointees Beneficiary Plan
- Supplemental Retirement
- ORP School Superintendents
- ORP Higher Education Beneficiary Plan
- 401(a) Cash Match Beneficiary Plan
- ORP Political Appointees
- 457 Deferred Compensation Beneficiary Plan
- ORP Higher Education
- Hybrid 457 Deferred Compensation Plan
- Hybrid 401(a)
- 401(a) Cash Match
- 457 Deferred Compensation*

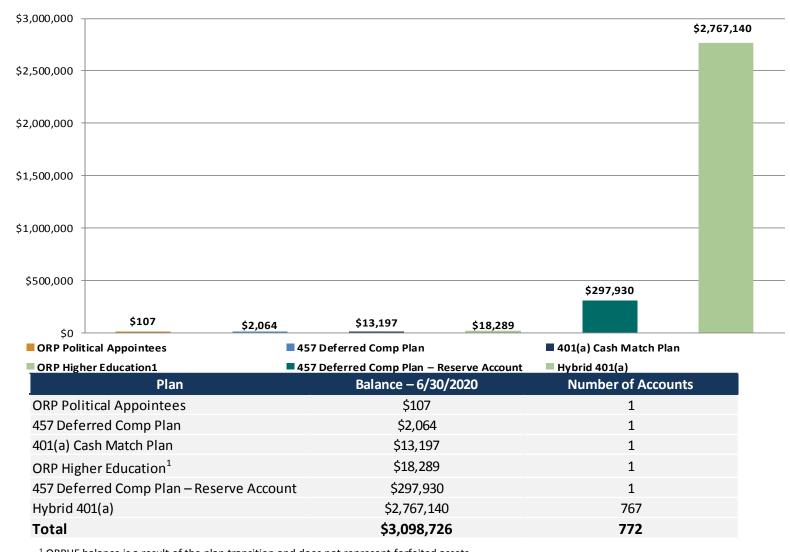


Plan Name	Balances – 6/30/2020	% of Plan Assets	Number of Accounts
Hybrid 457 Beneficiary Plan	\$10,887.40	0.00%	3
Hybrid 401(a) Beneficiary Plan	\$22,574.15	0.00%	8
ORP Political Appointees Beneficiary Plan	\$25,362.34	0.00%	1
Supplemental Retirement	\$144,130.48	0.00%	2
ORP School Superintendents	\$226,193.84	0.00%	2
ORP Higher Education Beneficiary Plan	\$694,029.97	0.01%	13
401(a) Cash Match Beneficiary Plan	\$2,275,265.12	0.05%	191
ORP Political Appointees	\$18,797,085.89	0.40%	382
457 Deferred Compensation Beneficiary Plan	\$23,900,374.36	0.51%	325
ORP Higher Education	\$114,209,844.24	2.45%	2,259
Hybrid 457 Deferred Compensation Plan	\$239,678,045.41	5.15%	116,755
Hybrid 401(a)	\$514,416,853.91	11.06%	164,826
401(a) Cash Match	\$490,921,286.07	10.55%	72,160
457 Deferred Compensation*	\$3,247,593,663.86	69.80%	86,708
Total All VRS Plans	\$4,652,915,597.04	100.00%	443,635

^{*} Includes reserve Masterit Preserte 126 out 182 and efficient files in Plans Advisory Committee (DCPAC) Meeting 8/22/2020 f 6/30/2020

Forfeiture & Reserve Accounts – Balances and Counts



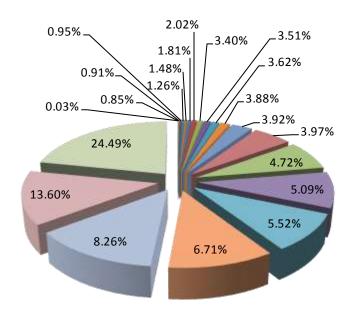


1 ORPHE balance is a result of the plan transition and does not represent forfeited assets.

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Plan Assets by Fund – All Plans





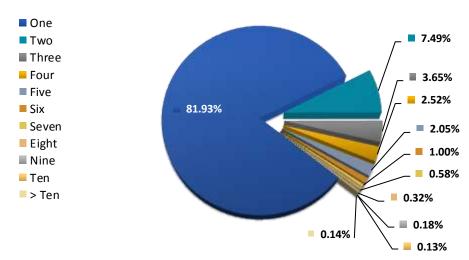
- Target Date 2065 Portfolio ■ High-Yield Bond Fund ■ TD Ameritrade ■ Global Real Estate Fund ■ Target Date 2050 Portfolio ■ International Stock Fund Bond Fund ■ Target Date 2035 Portfolio ■ Target Date 2025 Portfolio Retirement Portfolio Stock Fund
- VRS Investment Portfolio ■ Inflation-Protected Bond Fund ■ Target Date 2060 Portfolio
- Money Market Fund
- Target Date 2045 Portfolio
- Target Date 2040 Portfolio
- Target Date 2055 Portfolio
- Target Date 2030 Portfolio ■ Small/Mid-Cap Stock Fund
- Stable Value Fund

Fund Name	Fund Balance 6/30/2020	% of Plan Assets
Target Date 2065 Portfolio	\$1,195,538.11	0.03%
VRS Investment Portfolio	\$39,337,266.10	0.85%
High-Yield Bond Fund	\$42,530,616.50	0.91%
Inflation-Protected Bond Fund	\$44,075,447.08	0.95%
TD Ameritrade	\$58,616,837.91	1.26%
Target Date 2060 Portfolio	\$68,791,046.85	1.48%
Global Real Estate Fund	\$83,993,820.39	1.81%
Money Market Fund	\$94,161,746.10	2.02%
Target Date 2050 Portfolio	\$158,234,041.37	3.40%
Target Date 2045 Portfolio	\$163,365,098.79	3.51%
International Stock Fund	\$168,377,480.39	3.62%
Target Date 2040 Portfolio	\$180,402,912.74	3.88%
Bond Fund	\$182,403,907.73	3.92%
Target Date 2055 Portfolio	\$184,796,023.29	3.97%
Target Date 2035 Portfolio	\$219,601,725.72	4.72%
Target Date 2030 Portfolio	\$237,064,716.17	5.09%
Target Date 2025 Portfolio	\$256,738,788.79	5.52%
Small/Mid-Cap Stock Fund	\$312,360,985.03	6.71%
Retirement Portfolio	\$384,419,526.92	8.26%
Stable Value Fund	\$632,989,583.46	13.60%
Stock Fund	\$1,139,458,487.60	24.49%
Total	\$4,652,915,597.04	100.00%

Number of Investments Held By Participants







Number of Investments Held	Number of Participants	% of Participants
One	204,227	82.06%
Two	18,525	7.44%
Three	9,033	3.63%
Four	6,230	2.50%
Five	5,009	2.01%
Six	2,479	1.00%
Seven	1,435	0.58%
Eight	800	0.32%
Nine	455	0.18%
Ten	320	0.13%
>Ten	366	0.15%
Total	248,879	100.00%

COV 457 and Hybrid 401(a) Plans – Participants Invested In a Single Fund

Virginia Retirement System

Note: Beneficiary Plans and Forfeiture Accounts Excluded

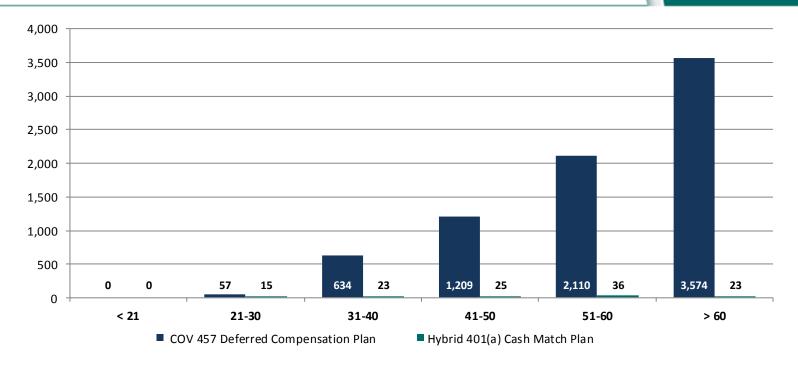
COV 457 Deferred Compensation Plan					
Fund Name	# of Accounts	% of Total			
Bond Fund	250	0.45%			
Global Real Estate Fund	130	0.23%			
High-Yield Bond Fund	83	0.15%			
Inflation-Protected Bond Fund	63	0.11%			
International Stock Fund	177	0.32%			
Money Market Fund	518	0.93%			
Small/Mid-Cap Stock Fund	289	0.52%			
Stable Value Fund	7,584	13.65%			
Stock Fund	2,708	4.87%			
TD Ameritrade	16	0.03%			
VRS Investment Portfolio	53	0.10%			
All Target Date Portfolio	43,692	78.64%			
Retirement Portfolio	4,252				
Target Date 2025 Portfolio	4,049				
Target Date 2030 Portfolio	4,533				
Target Date 2035 Portfolio	4,940				
Target Date 2040 Portfolio	5,010				
Target Date 2045 Portfolio	6,082				
Target Date 2050 Portfolio	6,731				
Target Date 2055 Portfolio	5,542				
Target Date 2060 Portfolio	2,392				
Target Date 2065 Portfolio	161				
Participants With Single Fund	55,563	100.00%			

Hybrid 401(a) Cash Match Plan					
Fund Name	# of Accounts	% of Total			
Bond Fund	15	0.01%			
Global Real Estate Fund	14	0.01%			
High-Yield Bond Fund	8	0.01%			
Inflation-Protected Bond Fund	14	0.01%			
International Stock Fund	8	0.01%			
Money Market Fund	58	0.04%			
Small/Mid-Cap Stock Fund	53	0.03%			
Stable Value Fund	122	0.08%			
Stock Fund	462	0.29%			
TD Ameritrade	1	0.00%			
VRS Investment Portfolio	1	0.00%			
All Target Date Portfolio	158,956	99.53%			
Retirement Portfolio	5,995				
Target Date 2025 Portfolio	8,832				
Target Date 2030 Portfolio	12,145				
Target Date 2035 Portfolio	14,961				
Target Date 2040 Portfolio	18,074				
Target Date 2045 Portfolio	15,536				
Target Date 2050 Portfolio	22,282				
Target Date 2055 Portfolio	35,314				
Target Date 2060 Portfolio	25,263				
Target Date 2065 Portfolio	554				
Participants With Single Fund	159,712	100.00%			

COV 457 and Hybrid 401(a) Plans – Stable Value as Sole Fund Held – Age Ranges



Note: Forfeiture Accounts Excluded



COV 457 Deferred Compensation Plan				
Age Range	Number of Participants			
<21	0			
21-30	57			
31-40	634			
41-50	1,209			
51-60	2,110			
>60	3,574			
Total	7,584			

Hybrid 401(a) Cash Match Plan			
Age Range	Number of Participants		
<21	0		
21-30	15		
31-40	23		
41-50	25		
51-60	36		
>60	23		
Total	122		

VRS Defined Contribution Plans

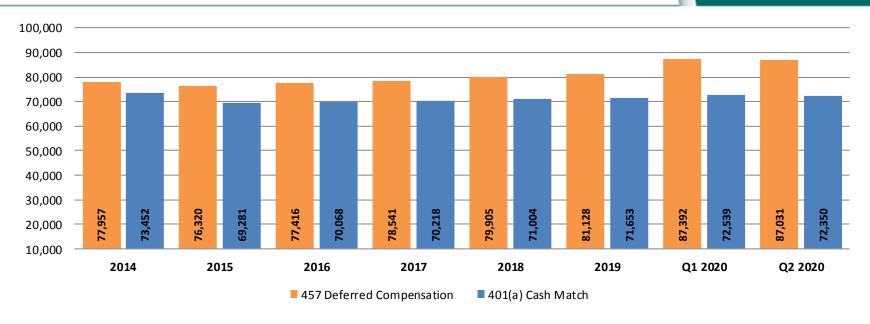


Commonwealth of Virginia 457 Deferred Compensation Plan 401(a) Cash Match Plan

457 and 401(a) Cash Match Plans – Number of Participant Accounts



Note: Includes Beneficiary Plans; Forfeiture Accounts and 457 Reserve Account Excluded



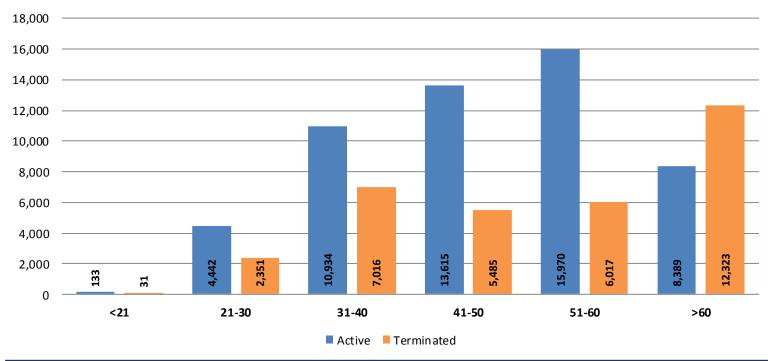
Period	457 Deferred Compensation	401(a) Cash Match	Total
2014	77,957	73,452	151,409
2015	76,320	69,281	145,601
2016	77,416	70,068	147,484
2017	78,541	70,218	148,759
2018	79,905	71,004	150,909
2019	81,128	71,653	152,781
Q1 2020	87,392	72,539	159,931
Q2 2020	87,031	72,350	159,381

457 Plan – Participant Status Count by Age



Virginia Retirement System

Note: Beneficiary Plan Accounts, Forfeiture Account and Reserve Account Excluded



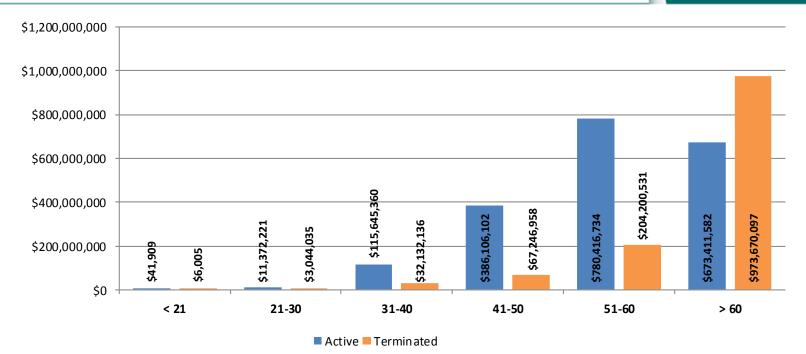
Age Range	Active	Terminated	Total
<21	133	31	164
21-30	4,442	2,351	6,793
31-40	10,934	7,016	17,950
41-50	13,615	5,485	19,100
51-60	15,970	6,017	21,987
>60	8,389	12,323	20,712
Total	53,483	33,223	86,706

^{*} Active Participants do not have a termination date on file and may not have made a contribution during the quarter. Terminated Participants have a terminate date on file.

457 Plan – Participant Status Assets by Age







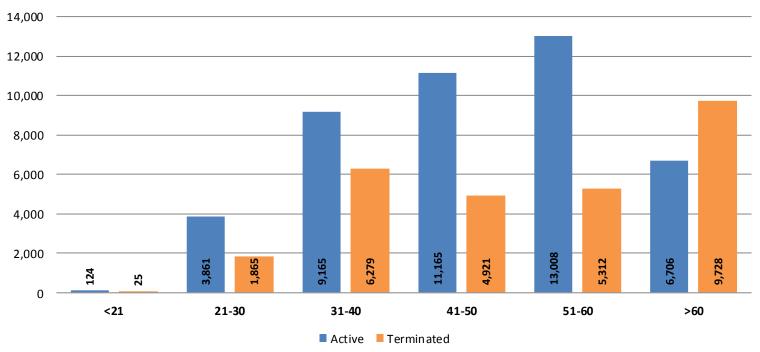
Age	Active	Terminated	Total
< 21	\$41,909	\$6,005	\$47,914
21-30	\$11,372,221	\$3,044,035	\$14,416,256
31-40	\$115,645,360	\$32,132,136	\$147,777,496
41-50	\$386,106,102	\$67,246,958	\$453,353,060
51-60	\$780,416,734	\$204,200,531	\$984,617,266
> 60	\$673,411,582	\$973,670,097	\$1,647,081,679
Total	\$1,966,993,908	\$1,280,299,762	\$3,247,293,670

^{*} Active Participants do not have a termination date on file and may not have made a contribution during the quarter. Terminated Participants have a terminate date on file.

401(a) Cash Match Plan – Participant Status Count by Age



Note: Beneficiary Plan and Forfeiture Account Excluded



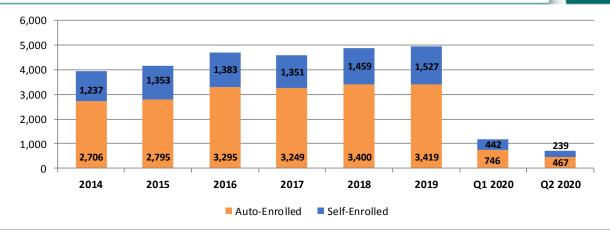
Age Range	Active	Terminated	Total
<21	124	25	149
21-30	3,861	1,865	5,726
31-40	9,165	6,279	15,444
41-50	11,165	4,921	16,086
51-60	13,008	5,312	18,320
>60	6,706	9,728	16,434
Total	44,029	28,130	72,159

^{*} Active Participants do not have a termination date on file and may not have made a contribution during the quarter. Terminated Participants have a terminate date on file.

457 Plan – New Enrollments



Note: Auto-enrolled category includes participants designated as auto-enroll eligible on incoming indicative data files during the quarter as well as those auto-enrolled during the quarter



Period	Auto-Enrolled	Self-Enrolled	Total Enrolled
2014	2,706	1,237	3,943
2015	2,795	1,353	4,148
2016	3,295	1,383	4,678
2017	3,249	1,351	4,600
2018	3,400	1,459	4,859
2019	3,419	1,527	4,946
Q1 2020	746	442	1,188
Q2 2020	467	239	706

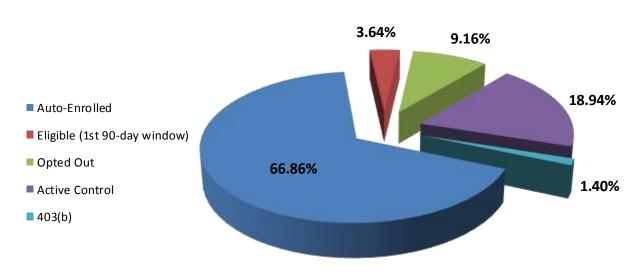
Period	Sch	ools	Political Su	b-Divisions	State Ag	gencies	Total
Pellou	Auto-Enrolled	Self-Enrolled	Auto-Enrolled	Self-Enrolled	Auto-Enrolled	Self-Enrolled	Enrolled
2019	n/a	209	n/a	195	3,419	1,123	4,946
Q1 2020	n/a	62	n/a	80	746	300	1,188
Q2 2020	n/a	40	n/a	32	467	167	706

457 Plan – Automatic Enrollment Snapshot





Auto-Enrolled Participants Conversion-To-Date

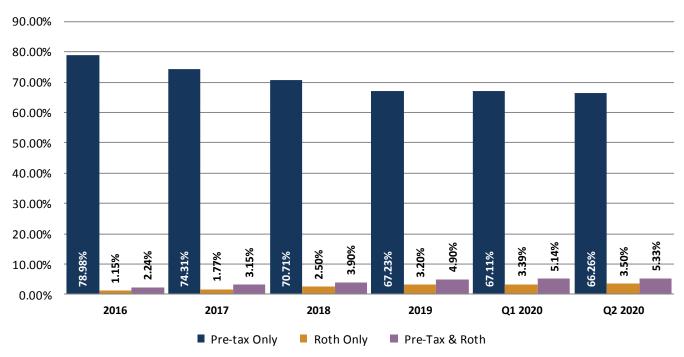


Enrollment Category	Active	% of Active Participants
Auto-Enrolled	7,336	66.86%
Eligible (1st 90-day window)	399	3.64%
Opted Out	1,005	9.16%
Active Control	2,078	18.94%
403(b)	154	1.40%

457 Plan – Deferral Types



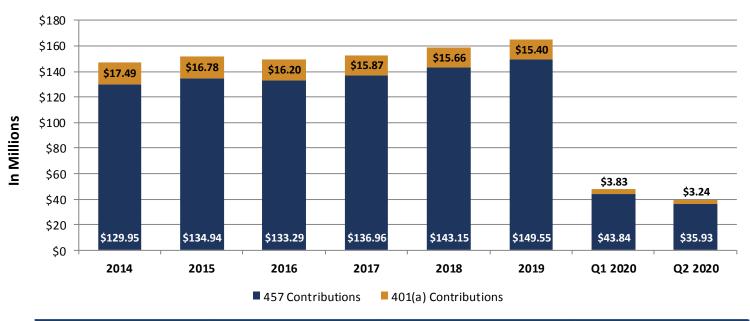
Note: Active count — all active participants, including participants who do not have a balance in the plan



Period	Active Participants	Pre-tax Only	Roth Only	Pre-Tax & Roth	% of Participants With Deferrals
2016	57,510	78.98%	1.15%	2.24%	82.37%
2017	59,104	74.31%	1.77%	3.15%	79.23%
2018	60,399	70.71%	2.50%	3.90%	77.11%
2019	61,554	67.23%	3.20%	4.90%	75.33%
Q1 2020	65,228	67.11%	3.39%	5.14%	75.64%
Q2 2020	65,180	66.26%	3.50%	5.33%	75.09%

457 and 401(a) Cash Match Plans – Contributions

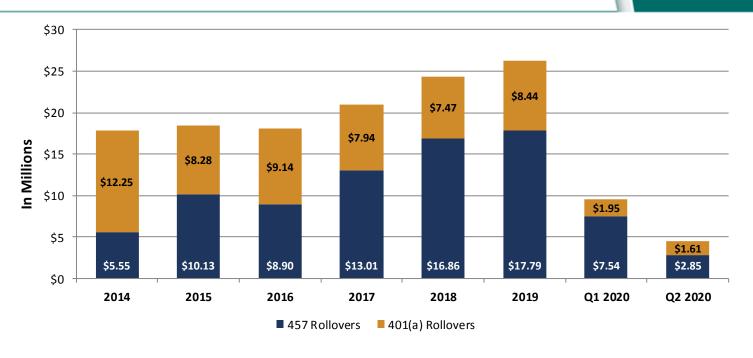




Period	457 Contributions	401(a) Contributions	Total
2014	\$129.95	\$17.49	\$147.44
2015	\$134.94	\$16.78	\$151.72
2016	\$133.29	\$16.20	\$149.49
2017	\$136.96	\$15.87	\$152.83
2018	\$143.15	\$15.66	\$158.82
2019	\$149.55	\$15.40	\$164.95
Q1 2020	\$43.84	\$3.83	\$47.67
Q2 2020	\$35.93	\$3.24	\$39.17

457 and 401(a) Cash Match Plans – Incoming Rollovers

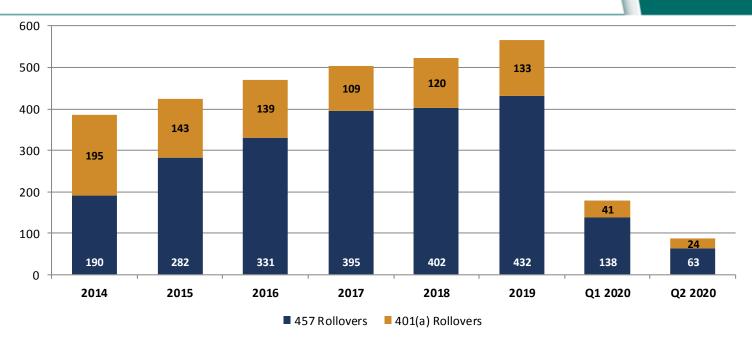




Period	457 Rollovers	401(a) Rollovers	Total
2014	\$5.55	\$12.25	\$17.81
2015	\$10.13	\$8.28	\$18.41
2016	\$8.90	\$9.14	\$18.04
2017	\$13.01	\$7.94	\$20.95
2018	\$16.86	\$7.47	\$24.33
2019	\$17.79	\$8.44	\$26.23
Q1 2020	\$7.54	\$1.95	\$9.49
Q2 2020	\$2.85	\$1.61	\$4.46

457 and 401(a) Cash Match Plans – Incoming Rollovers – Counts



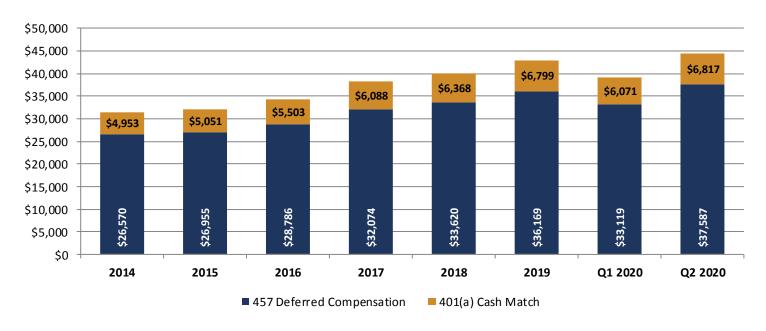


Period	457 Rollovers	401(a) Rollovers	Total
2014	190	195	385
2015	282	143	425
2016	331	139	470
2017	395	109	504
2018	402	120	522
2019	432	133	565
Q1 2020	138	41	179
Q2 2020	63	24	87

457 and 401(a) Cash Match Plans – Participant Average Account Balance

Note: Includes Beneficiary Plans



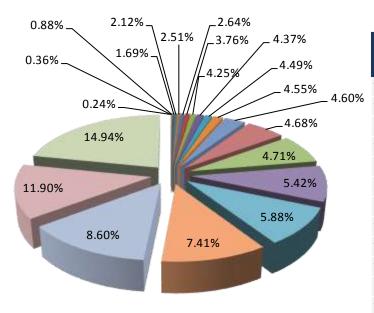


Period	457 Deferred Compensation	401(a) Cash Match	Total
2014	\$26,570.18	\$4,953.42	\$31,523.60
2015	\$26,954.62	\$5,051.05	\$32,005.67
2016	\$28,786.34	\$5,502.95	\$34,289.28
2017	\$32,073.51	\$6,087.86	\$38,161.37
2018	\$33,619.62	\$6,367.88	\$39,987.50
2019	\$36,168.70	\$6,798.54	\$42,967.24
Q1 2020	\$33,119.10	\$6,071.46	\$39,190.56
Q2 2020	\$37,586.54	\$6,816.63	\$44,403.17

457 Plan – Participant Use of Funds

Note: Includes Beneficiary Plan and Reserve Account





■ Target Date 2065 Portfolio			
■ VRS Investment Portfolio			
■ Inflation-Protected Bond Fund			
Money Market Fund Money Market Fund			
,			
Target Date 2040 Portfolio			
Global Real Estate Fund			
■ Target Date 2035 Portfolio			

■ Target Date 2050 Portfolio
Bond Fund
■ Small/Mid-Cap Stock Fund
Stock Fund

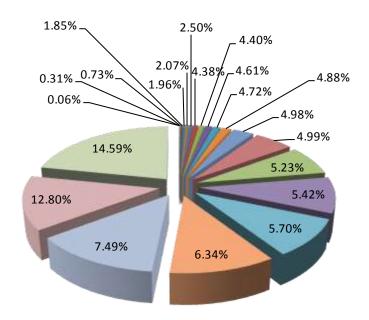
■ TD Ameritrade
■ Target Date 2060 Portfolio
High-Yield Bond Fund
■ Target Date 2055 Portfolio
■ Target Date 2025 Portfolio
■ Target Date 2030 Portfolio
■ Target Date 2045 Portfolio
Retirement Portfolio
International Stock Fund
Stable Value Fund

Fund Name	Participant Count 3/31/2020	Participant Count 6/30/2020	% of Participants 6/30/2020	% Change
Target Date 2065 Portfolio	324	402	0.24%	24.07%
TD Ameritrade	573	601	0.36%	4.89%
VRS Investment Portfolio	1,479	1,462	0.88%	-1.15%
Target Date 2060 Portfolio	2,805	2,810	1.69%	0.18%
Inflation-Protected Bond Fund	3,527	3,524	2.12%	-0.09%
High-Yield Bond Fund	4,222	4,184	2.51%	-0.90%
Money Market Fund	4,407	4,402	2.64%	-0.11%
Target Date 2055 Portfolio	6,264	6,267	3.76%	0.05%
Target Date 2040 Portfolio	7,091	7,071	4.25%	-0.28%
Target Date 2025 Portfolio	7,294	7,284	4.37%	-0.14%
Global Real Estate Fund	7,603	7,482	4.49%	-1.59%
Target Date 2030 Portfolio	7,572	7,573	4.55%	0.01%
Target Date 2035 Portfolio	7,695	7,662	4.60%	-0.43%
Target Date 2045 Portfolio	7,836	7,801	4.68%	-0.45%
Target Date 2050 Portfolio	7,868	7,841	4.71%	-0.34%
Retirement Portfolio	9,147	9,027	5.42%	-1.31%
Bond Fund	9,859	9,798	5.88%	-0.62%
International Stock Fund	12,477	12,338	7.41%	-1.11%
Small/Mid-Cap Stock Fund	14,501	14,331	8.60%	-1.17%
Stable Value Fund	20,076	19,829	11.90%	-1.23%
Stock Fund	25,028	24,880	14.94%	-0.59%

401(a) Cash Match – Participant Use of Funds

Virginia Retirement System

Note: Includes Beneficiary Plan



- TD Ameritrade
- VRS Investment Portfolio
- Target Date 2060 Portfolio
- Money Market Fund
- Global Real Estate Fund
- Target Date 2025 Portfolio
- Bond Fund
- Target Date 2045 Portfolio
- Retirement Portfolio
- Small/Mid-Cap Stock Fund
- Stock Fund

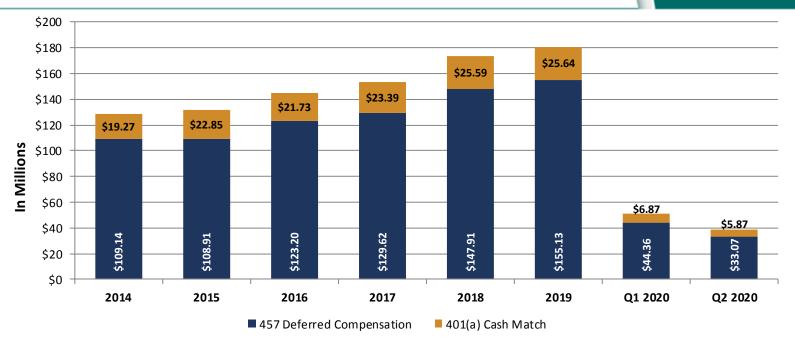
- Target Date 2065 Portfolio ■ Inflation-Protected Bond Fund High-Yield Bond Fund ■ Target Date 2055 Portfolio ■ Target Date 2040 Portfolio
- Target Date 2030 Portfolio ■ Target Date 2035 Portfolio ■ Target Date 2050 Portfolio International Stock Fund

Stable Value Fund

Fund Name	Participant Count 3/31/2020	Participant Count 6/30/2020	% of Participants 6/30/2020	% Change
TD Ameritrade	76	79	0.06%	3.95%
Target Date 2065 Portfolio	313	382	0.31%	22.04%
VRS Investment Portfolio	904	899	0.73%	-0.55%
Inflation-Protected Bond Fund	2,273	2,279	1.85%	0.26%
Target Date 2060 Portfolio	2,430	2,412	1.96%	-0.74%
High-Yield Bond Fund	2,571	2,546	2.07%	-0.97%
Money Market Fund	3,090	3,079	2.50%	-0.36%
Target Date 2055 Portfolio	5,406	5,402	4.38%	-0.07%
Global Real Estate Fund	5,489	5,425	4.40%	-1.17%
Target Date 2040 Portfolio	5,702	5,678	4.61%	-0.42%
Target Date 2025 Portfolio	5,820	5,822	4.72%	0.03%
Target Date 2030 Portfolio	6,011	6,008	4.88%	-0.05%
Bond Fund	6,163	6,135	4.98%	-0.45%
Target Date 2035 Portfolio	6,150	6,149	4.99%	-0.02%
Target Date 2045 Portfolio	6,440	6,440	5.23%	0.00%
Target Date 2050 Portfolio	6,677	6,676	5.42%	-0.01%
Retirement Portfolio	7,093	7,029	5.70%	-0.90%
International Stock Fund	7,918	7,814	6.34%	-1.31%
Small/Mid-Cap Stock Fund	9,335	9,234	7.49%	-1.08%
Stable Value Fund	15,906	15,778	12.80%	-0.80%
Stock Fund	18,075	17,975	14.59%	-0.55%

457 and 401(a) Cash Match Plans – Distributions

DCP
Virginia Retirement System



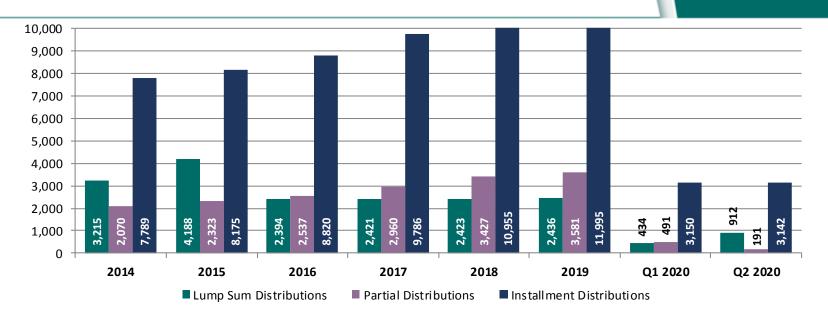
Period	457 Deferred Compensation	401(a) Cash Match	Total
2014	\$109.14	\$19.27	\$128.41
2015	\$108.91	\$22.85	\$131.77
2016	\$123.20	\$21.73	\$144.93
2017	\$129.62	\$23.39	\$153.01
2018	\$147.91	\$25.59	\$173.50
2019	\$155.13	\$25.64	\$180.77
Q1 2020	\$44.36	\$6.87	\$51.24
Q2 2020	\$33.07	\$5.87	\$38.94

^{*} Q2 distribution amounts include Coronavirus-Related Distributions that totaled \$1,314,784.56 for the 401(a) Cash Match Plan and \$4,578,819.50 for the 457 Deferred Compensation Plan.

Compensation Plan. Plan. Master Page # 126 of 182 - Defined Contribution Plans Advisory Committee (DCPAC) Meeting 8/27/2020 f 6/30/2020

457 Plan – Distributions by Type



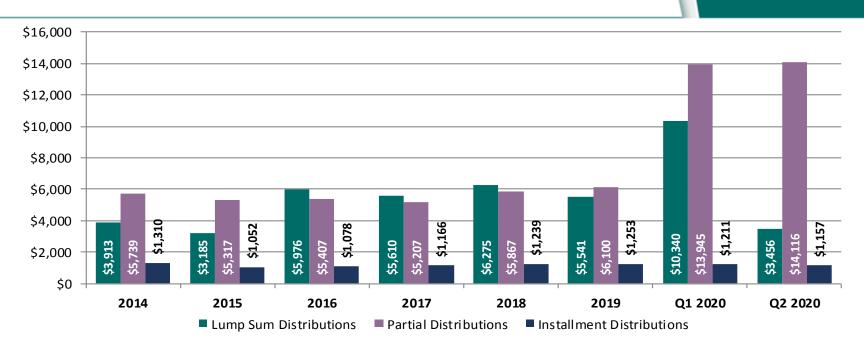


Period	Lump Sum Distributions*	Partial Distributions	Installment Distributions
2014	3,215	2,070	7,789
2015	4,188	2,323	8,175
2016	2,394	2,537	8,820
2017	2,421	2,960	9,786
2018	2,423	3,427	10,955
2019	2,436	3,581	11,995
Q1 2020	434	491	3,150
Q2 2020	912	191	3,142

- Includes EACA distributions.
- Q2 distribution counts do not include Coronavirus-Related Distributions that totaled 119 lump sum distributions and 466 partial distributions in the 457 Deferred Compensation Plan.

457 Plan – Distribution Average Amounts



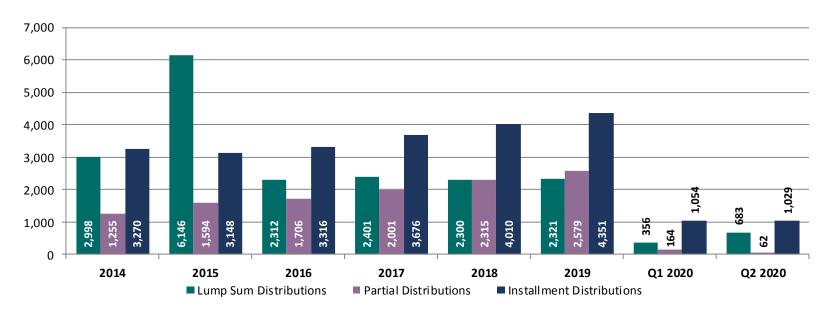


Period	Lump Sum Distributions	Partial Distributions	Installment Distributions
2014	\$3,913	\$5,739	\$1,310
2015	\$3,185	\$5,317	\$1,052
2016	\$5,976	\$5,407	\$1,078
2017	\$5,610	\$5,207	\$1,166
2018	\$6,275	\$5,867	\$1,239
2019	\$5,541	\$6,100	\$1,253
Q1 2020	\$10,340	\$13,945	\$1,211
Q2 2020	\$3,456	\$14,116	\$1,157

^{*} Q2 distribution amounts do not include Coronavirus-Related Distributions that totaled \$693,269.59 for lump sum distributions and \$3,885,549.91 for partial distributions in the 457 Deferred Compensation Plan. Master Page # 128 of 182 - Defined Contribution Plans Advisory Committee (DCPAC) Meeting 8/23/2020 f 6/30/2020

401(a) Cash Match – Distributions by Type





Period	Lump Sum Distributions	Partial Distributions	Installment Distributions
2014	2,998	1,255	3,270
2015	6,146	1,594	3,148
2016	2,312	1,706	3,316
2017	2,401	2,001	3,676
2018	2,300	2,315	4,010
2019	2,321	2,579	4,351
Q1 2020	356	164	1,054
Q2 2020	683	62	1,029

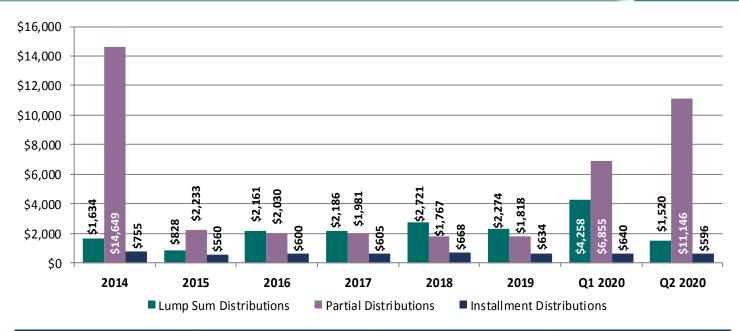
Q2 distribution counts do not include Coronavirus-Related Distributions that totaled 117 lump sum distributions and 283 partial distributions in the 401(a) Cash Match

Plan.

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401(a) Cash Match Plan – Distribution Average Amounts





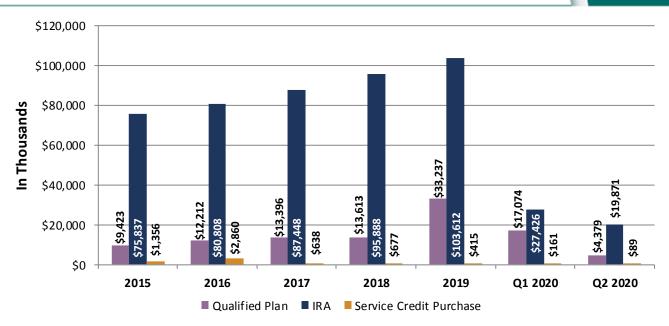
Period	Lump Sum Distributions	Partial Distributions	Installment Distributions
2014	\$1,634	\$14,649	\$755
2015	\$828	\$2,233	\$560
2016	\$2,161	\$2,030	\$600
2017	\$2,186	\$1,981	\$605
2018	\$2,721	\$1,767	\$668
2019	\$2,274	\$1,818	\$634
Q1 2020	\$4,258	\$6,855	\$640
Q2 2020	\$1,520	\$11,146	\$596

Q2 distribution amounts do not include Coronavirus-Related Distributions that totaled \$362,994.43 for lump sum distributions and \$951,790.13 for partial distributions in the 401(a) Cash Match Plan.

Master Page # 130 of 182 - Defined Contribution Plans Advisory Committee (DCPAC) Meeting 8/22/2020 f 6/30/2020

457 and 401(a) Plans – Rollover Distribution Destinations – Total Amounts

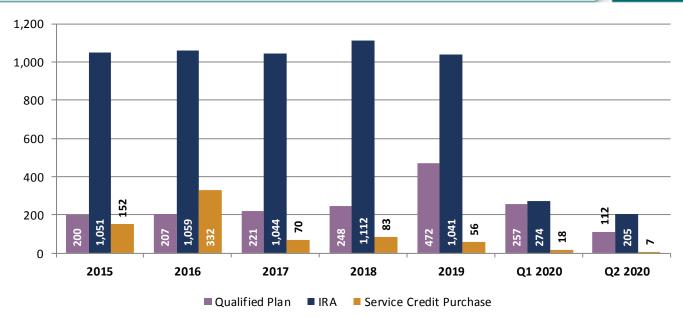




Period	Qualified Plan	IRA	Service Credit Purchase	Total
2015	\$9,423	\$75,837	\$1,356	\$86,616
2016	\$12,212	\$80,808	\$2,860	\$95,880
2017	\$13,396	\$87,448	\$638	\$101,481
2018	\$13,613	\$95,888	\$677	\$110,178
2019	\$33,237	\$103,612	\$415	\$137,264
Q1 2020	\$17,074	\$27,426	\$161	\$44,661
Q2 2020	\$4,379	\$19,871	\$89	\$24,338

457 Plan – Rollover Distribution Destinations

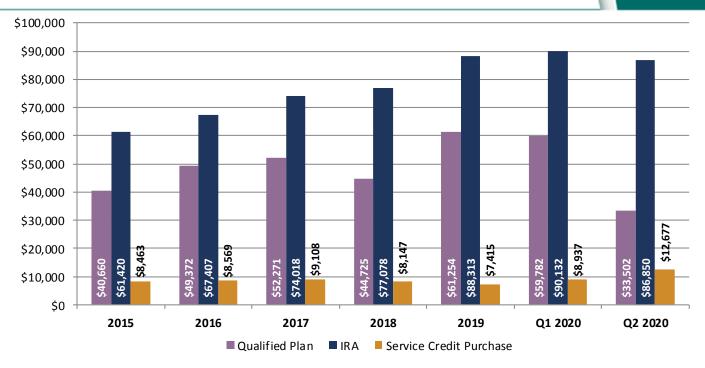




Period	Qualified Plan	IRA	Service Credit Purchase	Total Rollover Distributions
2015	200	1,051	152	1,403
2016	207	1,059	332	1,598
2017	221	1,044	70	1,335
2018	248	1,112	83	1,443
2019	472	1,041	56	1,569
Q1 2020	257	274	18	549
Q2 2020	112	205	7	324

457 Plan – Rollover Distribution Average Amounts



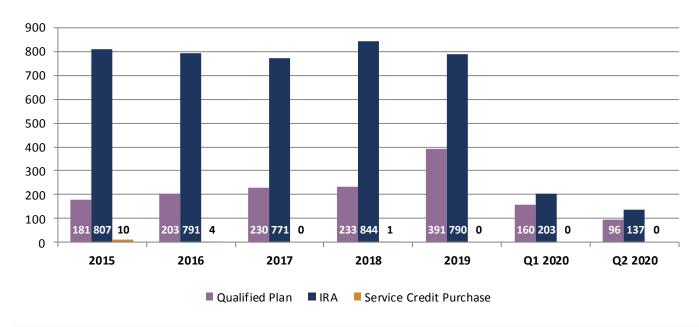


Period	Qualified Plan	IRA	Service Credit Purchase	Average Rollover Distribution
2015	\$40,660	\$61,420	\$8,463	\$52,855
2016	\$49,372	\$67,407	\$8,569	\$52,847
2017	\$52,271	\$74,018	\$9,108	\$67,015
2018	\$44,725	\$77,078	\$8,147	\$67,553
2019	\$61,254	\$88,313	\$7,415	\$77,285
Q1 2020	\$59,782	\$90,132	\$8,937	\$73,262
Q2 2020	\$33,502	\$86,850	\$12,677	\$66,806

401(a) Cash Match Plan – Rollover Distribution Destinations



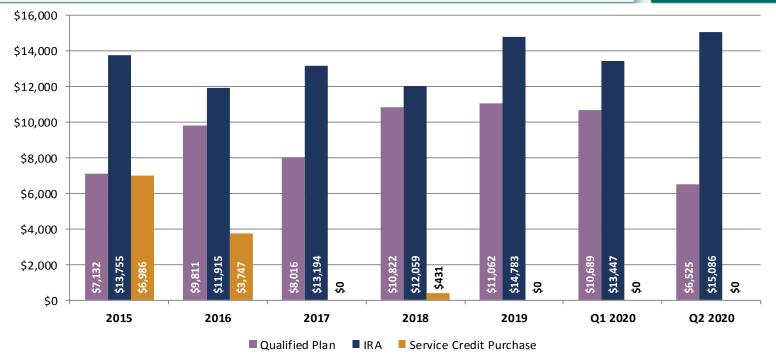




Period	Qualified Plan	IRA	Service Credit Purchase	Total Rollover Distributions
2015	181	807	10	998
2016	203	791	4	998
2017	230	771	0	1,001
2018	233	844	1	1,078
2019	391	790	0	1,181
Q1 2020	160	203	0	363
Q2 2020	96	137	0	233

401(a) Cash Match Plan – Rollover Distribution Average Amounts



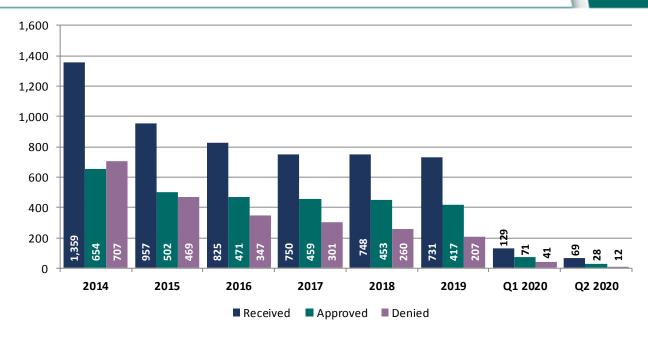


Period	Qualified Plan	IRA	Service Credit Purchase	Average Rollover Distribution
2015	\$7,132	\$13,755	\$6,986	\$12,486
2016	\$9,811	\$11,915	\$3,747	\$11,454
2017	\$8,016	\$13,194	\$0	\$12,005
2018	\$10,822	\$12,059	\$431	\$11,781
2019	\$11,062	\$14,783	\$0	\$13,551
Q1 2020	\$10,689	\$13,447	\$0	\$12,231
Q2 2020	\$6,525	\$15,086	\$0	\$11,559

457 Plan – Unforeseeable Emergency Withdrawals



Note: Reporting for Withdrawal Reasons Started In 2015



		Withdrav	wals Approv	ed and Paid			
Withdrawal Reason	2015	2016	2017	2018	2019	Q1 2020	Q2 2020
Eviction	121	118	98	103	122	23	1
Foreclosure	48	52	50	29	24	4	2
Funeral Expenses	14	14	11	9	12	2	0
Lost Wages*	0	0	5	29	33	7	4
Medical Bills	312	279	288	269	215	34	21
Property Damage	7	8	7	14	11	1	0
Total Paid	502	471	459	453	417	71	28

^{*} New category added in October 2017.

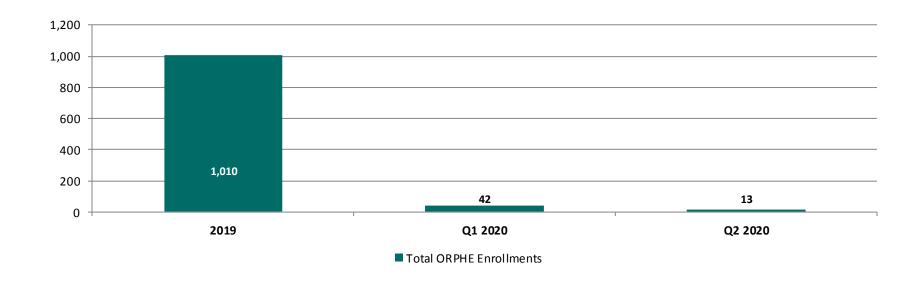
VRS Defined Contribution Plans



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ORPHE Plan – New Enrollments

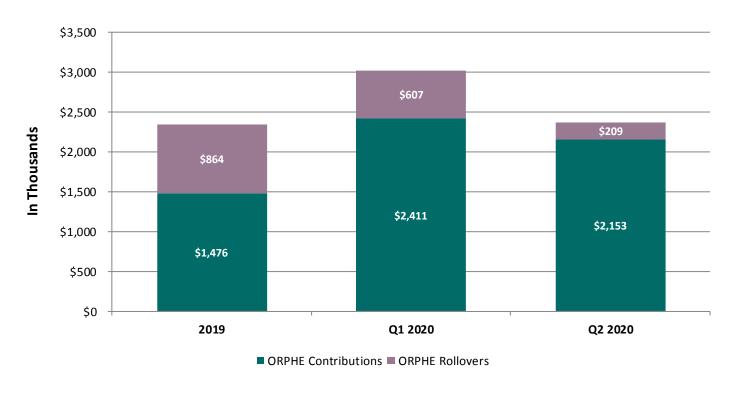




Period	Total ORPHE Enrollments
2019	1,010
Q1 2020	42
Q2 2020	13

ORPHE Plan – Contributions and Incoming Rollovers

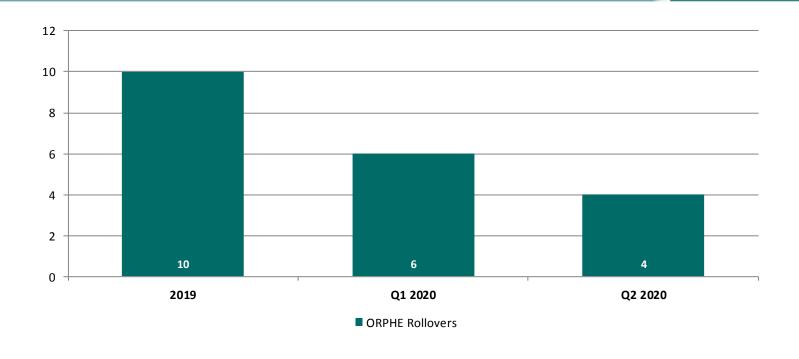




Period	ORPHE Contributions	ORPHE Rollovers	Total
2019	\$1,476.42	\$864.47	\$2,340.89
Q1 2020	\$2,410.65	\$607.12	\$3,017.77
Q2 2020	\$2,153.40	\$209.01	\$2,362.41

ORPHE Plan – Incoming Rollovers – Counts

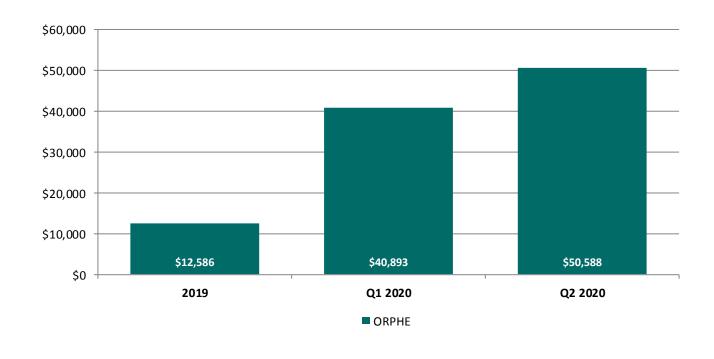




Period	ORPHE Rollovers
2019	10
Q1 2020	6
O2 2020	4

ORPHE Plan – Participant Average Account Balance



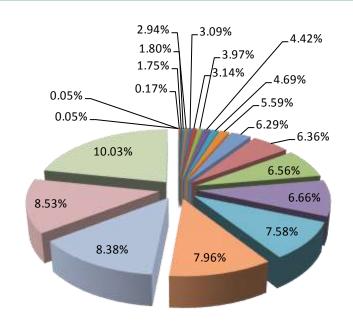


Period	ORPHE
2019	\$12,586
Q1 2020	\$40,893
Q2 2020	\$50,588

ORPHE- Participant Use of Funds

Note: Includes Beneficiary Plan





- Target Date 2065 Portfolio
- TD Ameritrade
- Inflation-Protected Bond Fund
- High-Yield Bond Fund
- Money Market Fund
- Target Date 2025 Portfolio
- Target Date 2035 Portfolio
- Target Date 2030 Portfolio
- Target Date 2050 Portfolio
- Retirement Portfolio
- Stock Fund

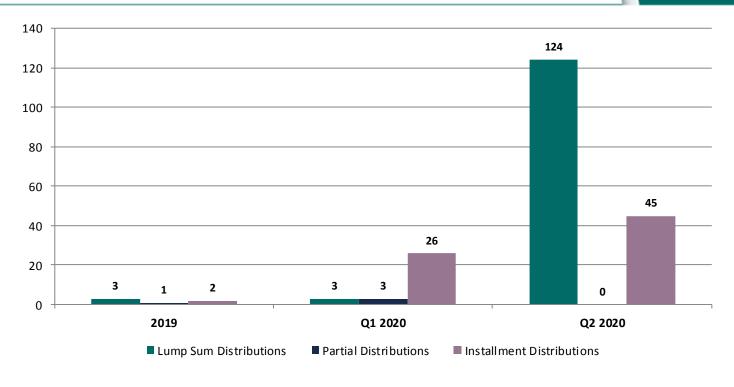
- VRS Investment Portfolio
- Stable Value Fund
- Target Date 2060 Portfolio
- Bond Fund
- Global Real Estate Fund
- Target Date 2055 Portfolio
- International Stock Fund
- Target Date 2045 PortfolioTarget Date 2040 Portfolio
- Small/Mid-Cap Stock Fund

Fund Name	Participant Count 3/31/2020	Participant Count 6/30/2020	% of Participants 6/30/2020	% Change
Target Date 2065 Portfolio	1	2	0.05%	100.00%
VRS Investment Portfolio	0	2	0.05%	n/a
TD Ameritrade	4	7	0.17%	75.00%
Stable Value Fund	72	70	1.75%	-2.78%
Inflation-Protected Bond Fund	76	72	1.80%	-5.26%
Target Date 2060 Portfolio	118	118	2.94%	0.00%
High-Yield Bond Fund	133	124	3.09%	-6.77%
Bond Fund	127	126	3.14%	-0.79%
Money Market Fund	161	159	3.97%	-1.24%
Global Real Estate Fund	180	177	4.42%	-1.67%
Target Date 2025 Portfolio	216	188	4.69%	-12.96%
Target Date 2055 Portfolio	227	224	5.59%	-1.32%
Target Date 2035 Portfolio	284	252	6.29%	-11.27%
International Stock Fund	258	255	6.36%	-1.16%
Target Date 2030 Portfolio	300	263	6.56%	-12.33%
Target Date 2045 Portfolio	274	267	6.66%	-2.55%
Target Date 2050 Portfolio	306	304	7.58%	-0.65%
Target Date 2040 Portfolio	349	319	7.96%	-8.60%
Retirement Portfolio	370	336	8.38%	-9.19%
Small/Mid-Cap Stock Fund	356	342	8.53%	-3.93%
Stock Fund	403	402	10.03%	-0.25%

ORPHE Plan – Distributions by Type





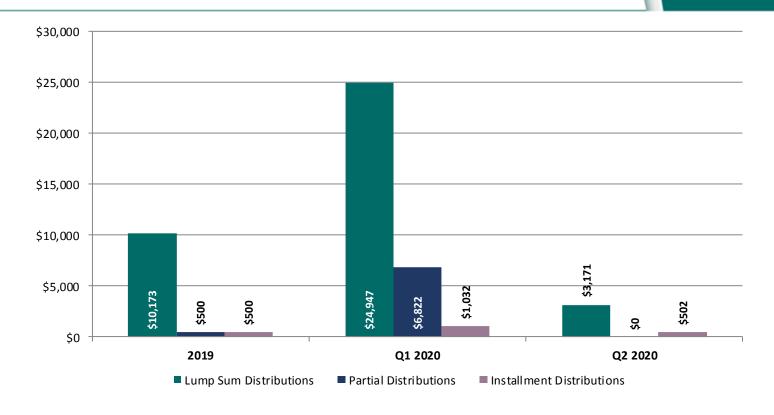


Period	Lump Sum Distributions	Partial Distributions	Installment Distributions
2019	3	1	2
Q1 2020	3	3	26
Q2 2020	124	0	45

ORPHE Plan – Average Distribution Amount

Note: Rollover Distributions Excluded and Reported on Subsequent Pages

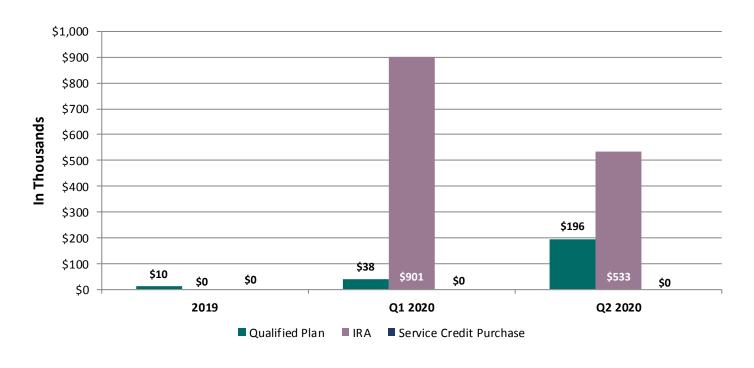




Period	Lump Sum Distributions	Partial Distributions	Installment Distributions
2019	\$10,173	\$500	\$500
Q1 2020	\$24,947	\$6,822	\$1,032
Q2 2020	\$3,171	\$0	\$502

ORPHE Plan – Rollover Distribution Destinations – Total Amounts

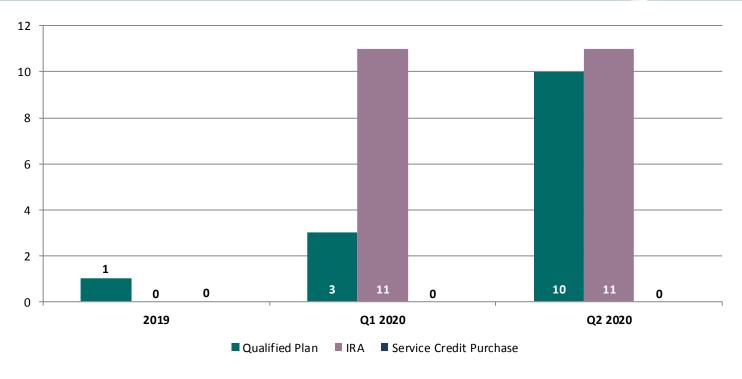




Period	Qualified Plan	IRA	Service Credit Purchase	Total	
2019	\$10	\$0	\$0	\$10	
Q1 2020	\$38	\$901	\$0	\$939	
Q2 2020	\$196	\$533	\$0	\$728	

ORPHE Plan – Rollover Distribution Destinations

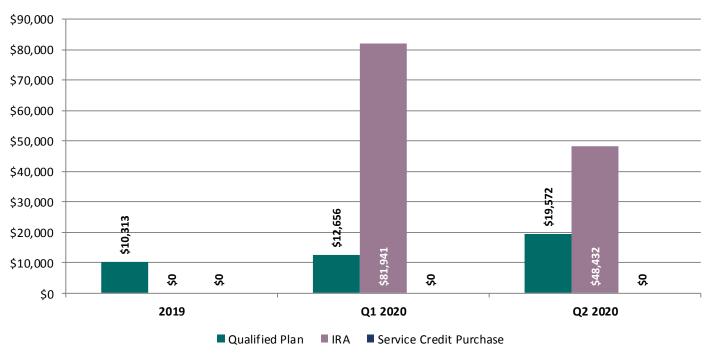




Period	Qualified Plan	IRA	Service Credit Purchase	Total Rollover Distributions
2019	1	0	0	1
Q1 2020	3	11	0	14
Q2 2020	10	11	0	21

ORPHE Plan – Rollover Distribution Average Amounts





Period	Qualified Plan	IRA	Service Credit Purchase	Average Rollover Distribution
2019	\$10,313	\$0	\$0	\$10,313
Q1 2020	\$12,656	\$81,941	\$0	\$67,095
Q2 2020	\$19,572	\$48,432	\$0	\$34,689





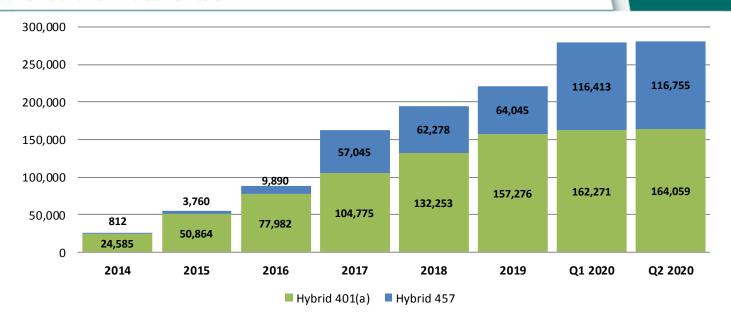
Hybrid Retirement Plan

Note: All data is as of 6/30/2020 unless otherwise stated.

Hybrid 401(a) & 457 Plans – Number of Participant Accounts



Note: Beneficiary Plans excluded; Forfeiture Accounts excluded starting in 2015; Counts include Active and Terminated Members

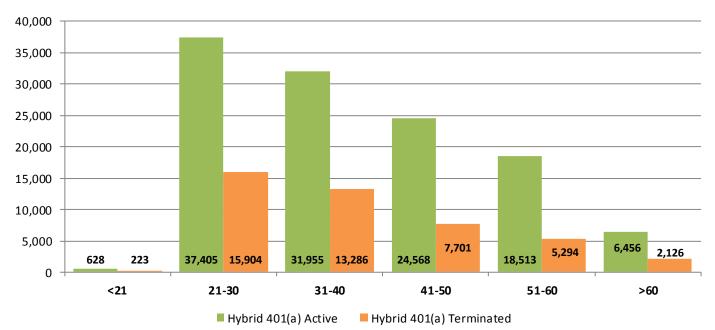


Period	Hybrid 401(a)	Hybrid 457	Total
2014	24,585	812	25,397
2015	50,864	3,760	54,624
2016	77,982	9,890	87,872
2017	104,775	57,045	161,820
2018	132,253	62,278	194,531
2019	157,276	64,045	221,321
Q1 2020	162,271	116,413	278,684
Q2 2020	164,059	116,755	280,814

Hybrid 401(a) Plan – Participant Status Count by Age



Note: Beneficiary Plans and Forfeiture Accounts Excluded

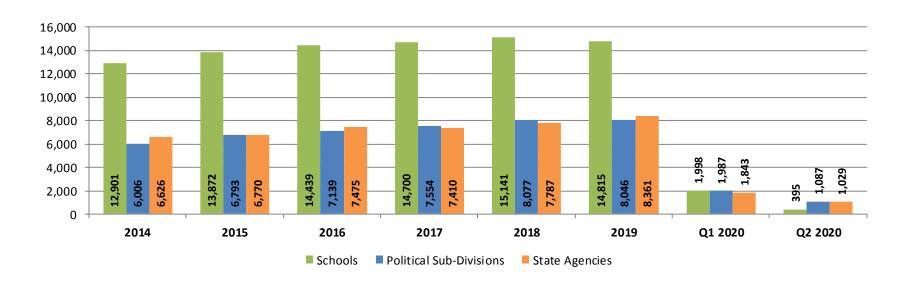


Ago Bongo	Hybrid 401(a)*				
Age Range	Active	Terminated	Total		
<21	628	223	851		
21-30	37,405	15,904	53,309		
31-40	31,955	13,286	45,241		
41-50	24,568	7,701	32,269		
51-60	18,513	5,294	23,807		
>60	6,456	2,126	8,582		
Total	119,525	44,534	164,059		

^{*} Chart shows Hybrid 401(a) counts only, since all participants in the Hybrid 457 counts are included in the Hybrid 401(a) counts.

Hybrid 401(a) Plan – New Enrollments

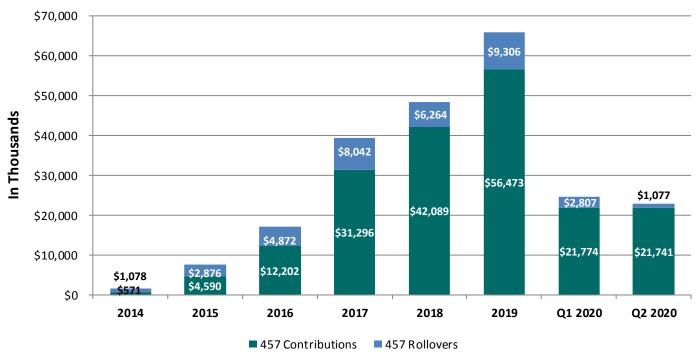




Period	Schools	Political Sub-Divisions	State Agencies	Total Hybrid Enrollments
2014	12,901	6,006	6,626	25,533
2015	13,872	6,793	6,770	27,435
2016	14,439	7,139	7,475	29,053
2017	14,700	7,554	7,410	29,664
2018	15,141	8,077	7,787	31,005
2019	14,815	8,046	8,361	31,222
Q1 2020	1,998	1,987	1,843	5,828
Q2 2020	395	1,087	1,029	2,511

Hybrid 457 Plan – Contributions and Incoming Rollovers

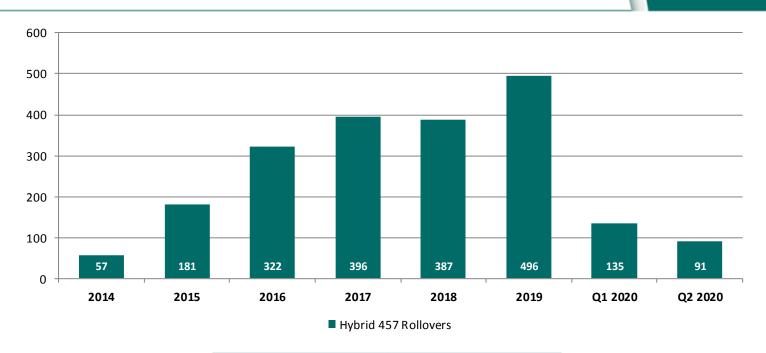




Period	457 Contributions	457 Rollovers	Total
2014	\$571.04	\$1,078.49	\$1,649.53
2015	\$4,590.00	\$2,876.02	\$7,466.02
2016	\$12,202.01	\$4,872.44	\$17,074.45
2017	\$31,295.56	\$8,042.46	\$39,338.02
2018	\$42,088.69	\$6,264.32	\$48,353.01
2019	\$56,472.59	\$9,305.69	\$65,778.28
Q1 2020	\$21,773.85	\$2,807.32	\$24,581.16
Q2 2020	\$21,740.80	\$1,076.92	\$22,817.71

Hybrid 457 Plan – Incoming Rollovers – Counts



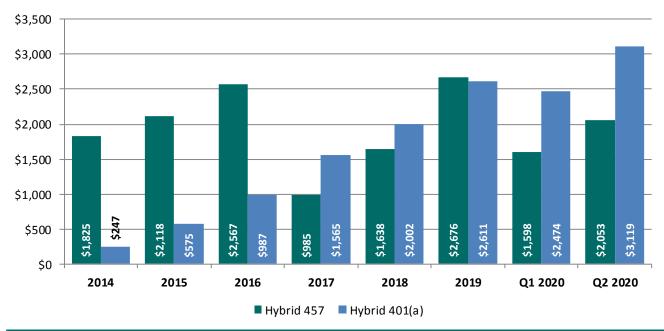


Period	Hybrid 457 Rollovers
2014	57
2015	181
2016	322
2017	396
2018	387
2019	496
Q1 2020	135
Q2 2020	91

Hybrid 401(a) & 457 Plans – Participant Average Account Balance



Note: Beneficiary Plans Included; Forfeiture Accounts Excluded Starting 2015

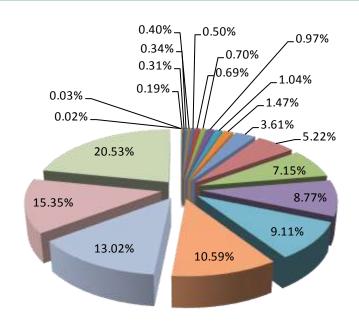


Period	Hybrid 457	Hybrid 401(a)
2014	\$1,825	\$247
2015	\$2,118	\$575
2016	\$2,567	\$987
2017	\$985	\$1,565
2018	\$1,638	\$2,002
2019	\$2,676	\$2,611
Q1 2020	\$1,598	\$2,474
Q2 2020	\$2,053	\$3,119

Hybrid 401(a) Plan – Participant Use of Funds

Note: Includes Beneficiary Plan





- VRS Investment Portfolio
- Inflation-Protected Bond Fund
- Bond Fund
- Global Real Estate FundMoney Market Fund
- Target Date 2065 Portfolio
- Retirement Portfolio
- Target Date 2030 Portfolio
- Target Date 2040 Portfolio
- Target Date 2050 Portfolio
- Target Date 2055 Portfolio

- TD Ameritrade ■ Stable Value Fund
- High-Yield Bond Fund
- International Stock Fund
- Small/Mid-Cap Stock Fund
- Target Date 2025 Portfolio

Stock Fund

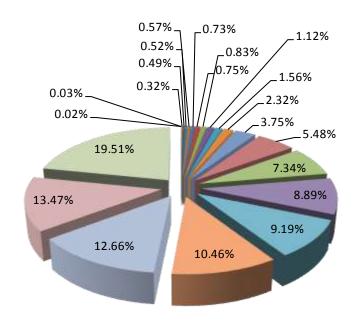
- Target Date 2035 Portfolio
- Target Date 2045 Portfolio
- Target Date 2060 Portfolio

Fund Name	Participant Count 3/31/2020	Participant Count 6/30/2020	% of Participants 6/30/2020	% Change
VRS Investment Portfolio	29	32	0.02%	10.34%
TD Ameritrade	42	49	0.03%	16.67%
Inflation-Protected Bond Fund	294	325	0.19%	10.54%
Stable Value Fund	491	532	0.31%	8.35%
Bond Fund	554	601	0.34%	8.48%
High-Yield Bond Fund	670	698	0.40%	4.18%
Global Real Estate Fund	839	864	0.50%	2.98%
International Stock Fund	1,144	1,196	0.69%	4.55%
Money Market Fund	1,208	1,223	0.70%	1.24%
Small/Mid-Cap Stock Fund	1,650	1,696	0.97%	2.79%
Target Date 2065 Portfolio	1,560	1,805	1.04%	15.71%
Stock Fund	2,430	2,567	1.47%	5.64%
Retirement Portfolio	6,295	6,298	3.61%	0.05%
Target Date 2025 Portfolio	9,058	9,110	5.22%	0.57%
Target Date 2030 Portfolio	12,339	12,474	7.15%	1.09%
Target Date 2035 Portfolio	15,089	15,292	8.77%	1.35%
Target Date 2040 Portfolio	15,740	15,885	9.11%	0.92%
Target Date 2045 Portfolio	18,325	18,467	10.59%	0.77%
Target Date 2050 Portfolio	22,541	22,709	13.02%	0.75%
Target Date 2060 Portfolio	26,352	26,766	15.35%	1.57%
Target Date 2055 Portfolio	35,581	35,796	20.53%	0.60%

Hybrid 457 Plan – Participant Use of Funds

Virginia Retirement System

Note: Includes Beneficiary Plan



- VRS Investment Portfolio Inflation-Protected Bond Fund
- Stable Value Fund
- High-Yield Bond Fund
- Global Real Estate Fund
- Small/Mid-Cap Stock Fund
- Retirement Portfolio
- Target Date 2030 Portfolio
- Target Date 2040 Portfolio
- Target Date 2050 Portfolio
- Target Date 2055 Portfolio
- Money Market Fund Bond Fund ■ Target Date 2065 Portfolio International Stock Fund Stock Fund ■ Target Date 2025 Portfolio ■ Target Date 2035 Portfolio ■ Target Date 2045 Portfolio ■ Target Date 2060 Portfolio

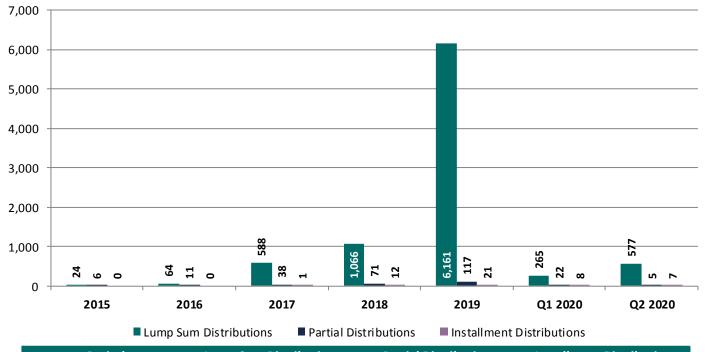
■ TD Ameritrade

Fund Name	Participant Count 3/31/2020	Participant Count 6/30/2020	% of Participants 6/30/2020	% Change
VRS Investment Portfolio	20	21	0.02%	5.00%
TD Ameritrade	28	33	0.03%	17.86%
Inflation-Protected Bond Fund	371	400	0.32%	7.82%
Money Market Fund	587	620	0.49%	5.62%
Stable Value Fund	627	659	0.52%	5.10%
Bond Fund	671	717	0.57%	6.86%
High-Yield Bond Fund	872	915	0.73%	4.93%
Target Date 2065 Portfolio	924	947	0.75%	2.49%
Global Real Estate Fund	1,010	1,052	0.83%	4.16%
International Stock Fund	1,358	1,412	1.12%	3.98%
Small/Mid-Cap Stock Fund	1,897	1,964	1.56%	3.53%
Stock Fund	2,794	2,926	2.32%	4.72%
Retirement Portfolio	4,749	4,731	3.75%	-0.38%
Target Date 2025 Portfolio	6,870	6,904	5.48%	0.49%
Target Date 2030 Portfolio	9,227	9,258	7.34%	0.34%
Target Date 2035 Portfolio	11,172	11,207	8.89%	0.31%
Target Date 2040 Portfolio	11,561	11,585	9.19%	0.21%
Target Date 2045 Portfolio	13,166	13,182	10.46%	0.12%
Target Date 2050 Portfolio	15,906	15,956	12.66%	0.31%
Target Date 2060 Portfolio	16,924	16,987	13.47%	0.37%
Target Date 2055 Portfolio	24,597	24,593	19.51%	-0.02%

Hybrid 457 Plan – Distributions by Type







Period	Lump Sum Distributions	Partial Distributions	Installment Distributions
2015	24	6	0
2016	64	11	0
2017	588	38	1
2018	1,066	71	12
2019	6,161	117	21
Q1 2020	265	22	8
Q2 2020	577	5	7

Note: Data not available for 2014. Tracking started in 2015.

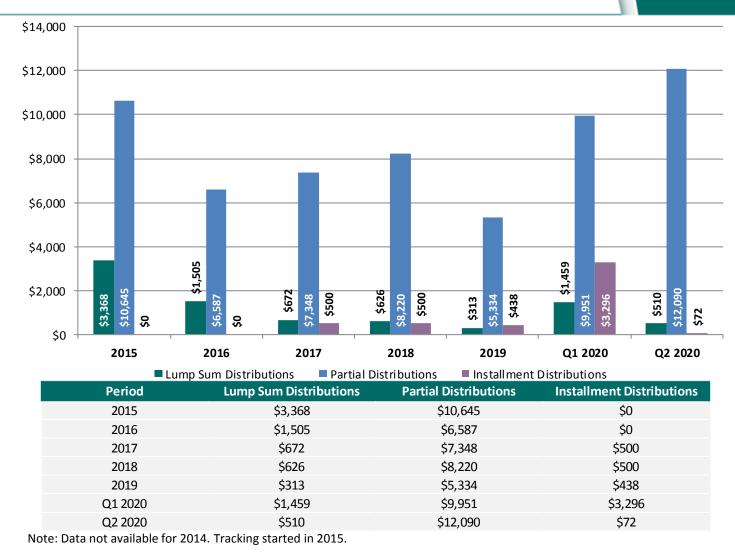
Small Balance payouts started in Q2 2019.

^{*} Q2 distribution counts do not include Coronavirus-Related Distributions that totaled 34 lump sum distributions and 121 partial distributions in the Hybrid 457 Plan.

Hybrid 457 Plan – Average Distribution Amount

Note: Rollover Distributions Excluded and Reported on Subsequent Pages





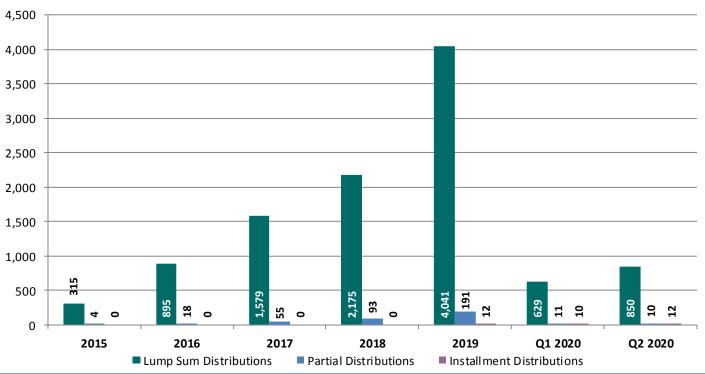
^{*} Q2 distribution amounts do not include Coronavirus-Related Distributions that totaled \$56,848.64 for lump sum distributions and \$350,108.75 for partial distributions in the 401(a) Cash Match Plan.

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Hybrid 401(a) Plan – Distributions by Type



Note: Rollover Distributions Excluded and Reported on Subsequent Pages

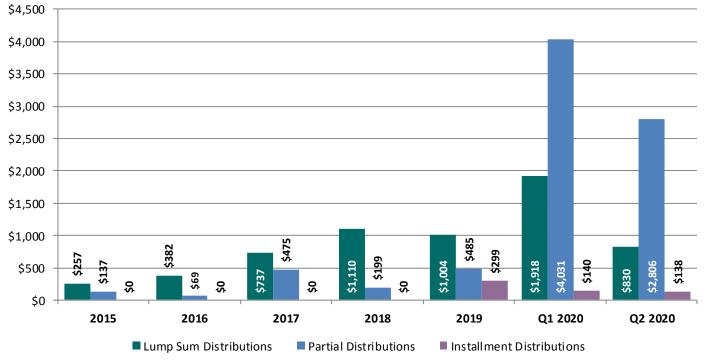


Period	Lump Sum Distributions	Partial Distributions	Installment Distributions
2015	315	4	0
2016	895	18	0
2017	1,579	55	0
2018	2,175	93	0
2019	4,041	191	12
Q1 2020	629	11	10
Q2 2020	850	10	12

Hybrid 401(a) Plan – Average Distribution **Amount**



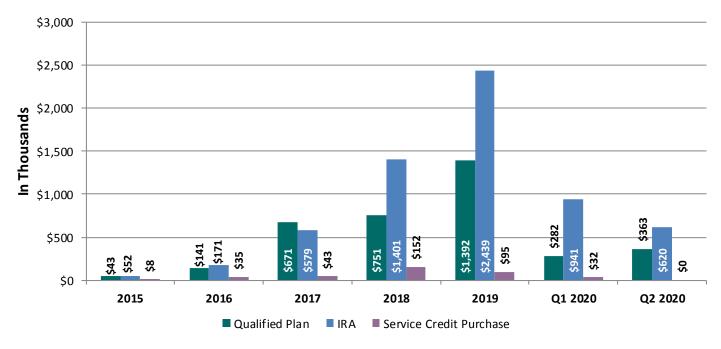




Period	Lump Sum Distributions	Partial Distributions	Installment Distributions
2015	\$257	\$137	\$0
2016	\$382	\$69	\$0
2017	\$737	\$475	\$0
2018	\$1,110	\$199	\$0
2019	\$1,004	\$485	\$299
Q1 2020	\$1,918	\$4,031	\$140
Q2 2020	\$830	\$2,806	\$138

Hybrid 401(a) & 457 Plans – Rollover Distribution Destinations – Total Amounts

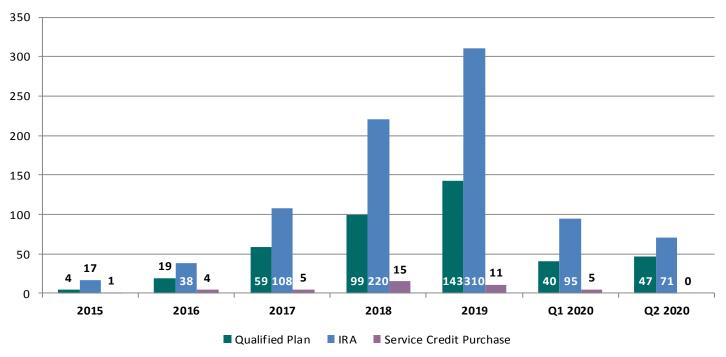




Period	Qualified Plan	IRA	Service Credit Purchase	Total
2015	\$43	\$52	\$8	\$103
2016	\$141	\$171	\$35	\$347
2017	\$671	\$579	\$43	\$1,293
2018	\$751	\$1,401	\$152	\$2,305
2019	\$1,392	\$2,439	\$95	\$3,926
Q1 2020	\$282	\$941	\$32	\$1,255
Q2 2020	\$363	\$620	\$0	\$983

Hybrid 457 Plan – Rollover Distribution Destinations





Period	Qualified Plan	IRA	Service Credit Purchase	Total Rollover Distributions
2015	4	17	1	22
2016	19	38	4	61
2017	59	108	5	172
2018	99	220	15	334
2019	143	310	11	464
Q1 2020	40	95	5	140
Q2 2020	47	71	0	118

Hybrid 457 Plan – Rollover Distribution **Average Amounts**

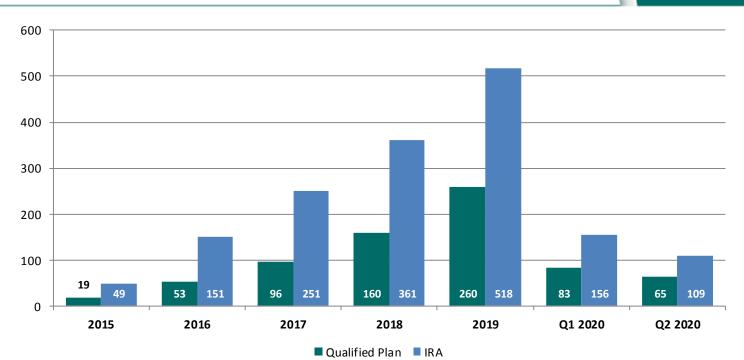




Period	Qualified Plan	IRA	Service Credit Purchase	Average Rollover Distribution
2015	\$8,769	\$1,867	\$7,576	\$3,381
2016	\$5,461	\$1,981	\$8,831	\$3,514
2017	\$9,669	\$2,815	\$8,581	\$5,334
2018	\$4,732	\$3,298	\$10,149	\$4,031
2019	\$4,862	\$3,429	\$8,603	\$3,993
Q1 2020	\$2,863	\$4,068	\$6,389	\$3,807
Q2 2020	\$3,379	\$3,462	\$0	\$3,429

Hybrid 401(a) Plan – Rollover Distribution Destinations



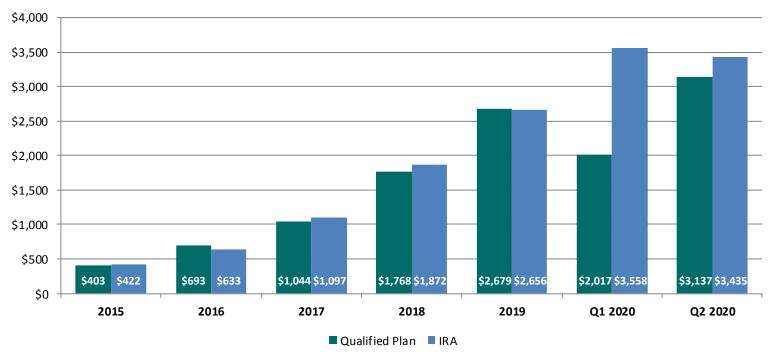


Period	Qualified Plan	IRA	Total Rollover Distributions*
2015	19	49	68
2016	53	151	204
2017	96	251	347
2018	160	361	521
2019	260	518	778
Q1 2020	83	156	239
Q2 2020	65	109	174

^{*} Service Credit Purchases are not allowed from the Hybrid 401 plan.

Hybrid 401(a) Plan – Rollover Distribution Average Amounts





Period	Qualified Plan	IRA	Average Rollover Distribution*
2015	\$403	\$422	\$416
2016	\$693	\$633	\$648
2017	\$1,044	\$1,097	\$1,083
2018	\$1,768	\$1,872	\$1,840
2019	\$2,679	\$2,656	\$2,664
Q1 2020	\$2,017	\$3,558	\$3,023
Q2 2020	\$3,137	\$3,435	\$3,324

^{*} Service Credit Purchases are not allowed from the Hybrid 401 plan.

VRS Defined Contribution Plans

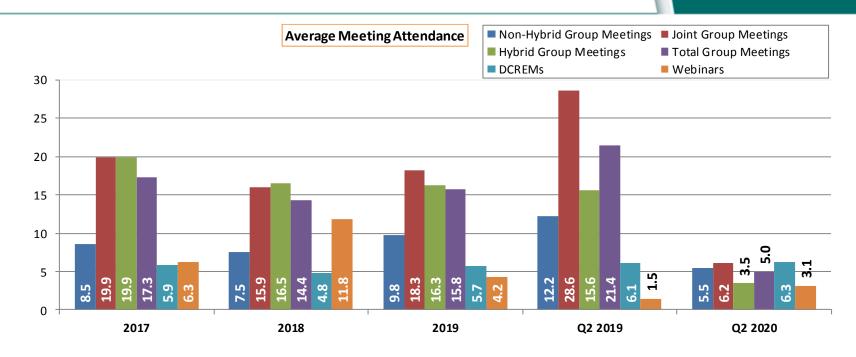


Field Education Services

Note: All data is as of 6/30/2020 unless otherwise stated.

Virginia Service Center – 2020 Activity





	20	017	20	18	20	19	Q2-2	019	Q2-	2020
Туре	Number of Meetings	Attendance								
Non-Hybrid Group Meetings	480	4,087	396	2,968	409	3,998	113	1,384	83	457
Joint Group Meetings	976	19,463	972	15,503	877	16,007	269	7,706	87	537
Hybrid Group Meetings	623	12,424	552	9,085	599	9,739	157	2,453	95	329
Total Group Meetings	2,079	35,974	1,920	27,556	1,885	29,744	539	11,543	265	1,323
DCREM (Publicly Scheduled)	252	1,487	235	1,135	185	1,049	69	422	71	446
Webinars	53	332	54	638	81	344	23	34	127	400

Field Activity 2014 – 2020



Individual Counseling Sessions/Office Activity						
Period	Number of Counseling		Virginia Service Center Calls Handled	Virginia Service Center Walk-ins		
Q2 2020	Non-Hybrid Hybrid	1,007 625	526	0*		
Q1 2020	Non-Hybrid Hybrid	1,447 709	633	45*		
2019	Non-Hybrid Hybrid	4,601 3,410	2,042	221		
2018	Non-Hybrid Hybrid	5,248 3,070	1,734	151		
2017	Non-Hybrid Hybrid	5,947 3,125	1,552	201		
2016	Non-Hybrid Hybrid	5,720 2,639	1,693	251		
2015	Non-Hybrid Hybrid	5,483 1,480	2,390	177		

^{*} Virginia Service Center closed to participants for Walk-ins on March 23, 2020 due to the COVID-19 pandemic. Reopen TBD.

Survey Highlights – Q2 2020



Audience

- COV 457 Presentations (83 group meetings)
- Hybrid Presentations (95 group meetings)
- Joint Group Presentations (87 group meetings)
- Individual Meetings (1,007 Non-Hybrid, 625 Hybrid)
- Survey: 229 Respondents (140 Non-Hybrid, 89 Hybrid)

Responses — Meetings

- 97% strongly agreed or agreed: presenter was professional, prepared, clearly explained concepts, kept employees engaged and met employee's expectations
- 99% strongly agreed or agreed: seminar provided a clear understanding of the content, was of value, was recommendable to a co-worker, and met their expectations

Responses – Individual Consultations

- 99% of participants who met individually with reps strongly agreed or agreed: presenter was professional, prepared, knowledgeable, allowed ample time, and met their overall expectations
- 97% of participants who met individually with reps strongly agreed or agreed: their concerns were addressed, the presenter provided value, they would recommend to a co-worker, and the personalized consultation met their expectations

Survey Highlights – Q2 2020



Action Taken as result of:	Mee	Meetings		onsultations
	Hybrid	Non-Hybrid	Hybrid	Non-Hybrid
Enrolled in the retirement program	0.0%	0.0%	0.0%	8.0%
Began making voluntary contributions	8.0%	0.0%	18.0%	0.0%
Increased contributions	14.0%	13.0%	31.0%	20.0%
Reviewed my investment options	35.0%	19.0%	29.0%	31.0%
Reallocated my account	3.0%	9.0%	4.0%	11.0%
Signed up for standard catch-up	0.0%	2.0%	0.0%	1.0%
Signed up for e-Delivery	3.0%	0.0%	2.0%	4.0%
Updated beneficiary information	8.0%	4.0%	24.0%	14.0%
Took no action	43.0%	53.0%	24.0%	24.0%
Other	19.0%	17.0%	22.0%	28.0%

^{*&}quot;Other" includes inquiries such as: Indicative Data, Account Access or Disbursements.

 $Note: Survey\ totals\ may\ equal\ less\ than\ 100\%\ because\ respondents\ may\ not\ complete\ all\ sections\ of\ the\ survey.\ Survey\ totals$

VRS Defined Contribution Plans



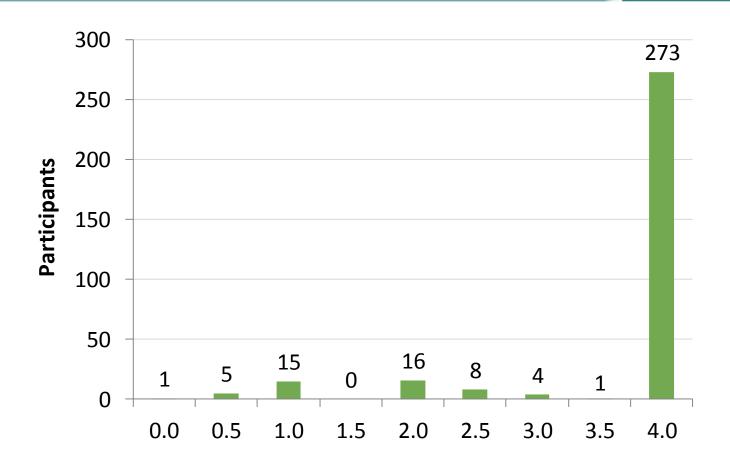
Online Resources

Note: All data is as of 6/30/2020 unless otherwise stated.

Hybrid Voluntary Preset

Since Inception: June 2018





Hybrid Voluntary Deferral %

Hybrid 457 Splash Screen

Launched December 17, 2019



Take Action With Voluntary Contributions!

As a Hybrid Retirement Plan member, you are eligible for an employer match on your voluntary contributions. When you contribute 4 percent, your employer contributes 2.5 percent. The sooner you start saving, the better prepared you'll be for your future.

To take full advantage of the employer match, make the maximum 4 percent voluntary contribution to your Hybrid 457 Deferred Compensation Plan before contributing to the Commonwealth of Virginia 457 Deferred Compensation Plan or any other supplemental retirement plan offered by your employer. Also, contributions to multiple 457 plans count toward the IRS annual contribution limit.

MEET YOUR MATCH

Contribute 4% for a 2.5% savings match!



Select One:

I'm ready to save 4 percent and maximize my hybrid voluntary contributions.

Save 4 percent now

I want to increase my hybrid voluntary contributions by a different amount.

Choose an amount to save

I am not interested in saving more for my future at this time.

Wait to save

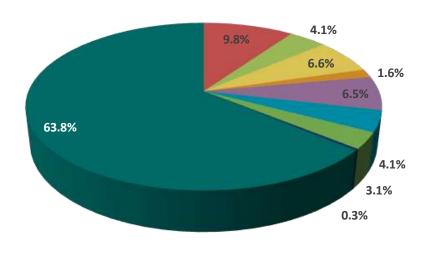
Members Who Saw the Splash Screen & Subsequent Action



Since Launch of Latest Campaign: December 17, 2019

Hybrid members who were not maxing out their contributions at 4% and saw the splash screen

	Button Options:				
Action	Save 4% Now	Choose an amount to save	Wait to Save		
Increased Contributions	335	159	231		
Decreased Contributions	3	28	86		
Remained the Same	12	1	4		





SmartStep - COV Plan

- Launched November 2018
 - 1,053 Participants have signed up
 - Average Pre-Tax SmartStep Election \$56
 - Average Roth SmartStep Election \$17



SmartStep - Hybrid Plan

- Launched October 2017
 - 2,072 Members have signed up
 - Average SmartStep Election 1.08%
 - 51.16% of members elected 0.5%
 - 27.56% of members elected 1.0%

VRS Defined Contribution Plans ORPHE Quarterly Review



Reports for Quarter ending June 30, 2020

These reports are prepared by the providers and presented by DC Plans Administration.

- Financial Transactions Report TIAA
- Participant Use of Funds TIAA
 - All Funds
 - Selected Funds

ORPHE - TIAA Financial Transactions

Prepared by TIAA as of June 30, 2020 (Page 1 of 2)

GRA



Virginia Retirement System						
Incoming	Tra	nsfer to				
Rollovers/	Αl	ternate				
Transfers	С	arrier	Net	Transfers		
5,471.43	\$	-	\$	370,148.13		
32,541.83	\$	-	\$	(183,101.96)		
7,844.13	\$	-	\$	(599,679.35)		
-	\$	-	\$	(52,131.99)		
-	\$	-	\$	(28,812.80)		
183,423.90	\$	-	\$	74,809.87		
-	\$	-	\$	(66,067.87)		
37,116.94	\$	-	\$	(55,463.99)		
-	\$	-	\$	(3,144.21)		
-	\$	-	\$	3,144.21		
-	\$	-	\$	(621,110.42)		
7,367.04	\$	-	\$	(159,434.05)		
-	\$	-	\$	43,444.95		
-	\$	-	\$	45,618.01		
203,291.84	\$	-	\$	253,899.68		
5,753.67	\$	-	\$	375,951.61		
697.41	\$	-	\$	133,422.24		
-	\$	-	\$	1,018,804.58		
-	\$	-	\$	(792,041.44)		
-	\$	-	\$	(900,957.14)		

Contributions

718,920.57

"Other - represent ba	lances in TPA and
Interest Only products	under the TIAA
Traditional fund and Fo	rfeiture/Revenue
Credit Account balance	es in the CREF
Money Market fund and	BlackRock Sh
Term Investment Whim	ds

Account Name

BlackRock Equity Index Fund J

Other**

Grand Total

16,534,133.35

03/31/2020 Prior Closing Balances

RC

16,534,133.35

RA

[&]quot;Other Activity - represent Plan Servicing Credits of \$10,097.14 and External Transfers of (\$10,543.02)

ORPHE – TIAA Financial Transactions





								Earnings -		6/30/2020 Closing Balances								
Account Name	Distribution	Fees		Dividends	Ot	her Activity ~	۔ (Gains/Losses	s	GRA		RA		RC		Other**	Gr	and Total
BlackRock Equity Index Fund J	\$ (62,717.21) \$	(6,4	29.75)	\$ -	\$	8.08	\$	3,470,852.81	\$	-	\$	-	\$	21,030,387.41	\$	-	\$	21,030,387.41
BlackRock LifePath Index 2025O	\$ (111,363.02) \$	(4,3	44.74)	\$ -	\$	-	\$	1,887,150.12	\$	-	\$	-	\$	18,134,762.92	\$	- :	\$	18,134,762.92
BlackRock LifePath Index 2030O	\$ (20,835.87) \$	(5,5)	BO.64)	\$ -	\$	-	\$	2,610,653.75	\$	-	\$	-	\$	22,330,827.32		-	\$	22,330,827.32
BlackRock LifePath Index 2035O	\$ (81,644.92) \$	(5,4	69.71)	\$ -	\$	-	\$	2,186,952.89	\$	-	\$	-	\$	16,587,278.98		-	\$	16,587,278.98
BlackRock LifePath Index 20400	\$ (54,503.64) \$	(6,2	35.30)	\$ -	\$	-	\$	2,670,021.51	\$	-	\$	-	\$	18,429,603.34	\$	-	\$	18,429,603.34
BlackRock LifePath Index 2045O	\$ (136,382.12) \$	(6,7	77.53)	\$ -	\$	-	\$	2,238,339.32	\$	-	\$	-	\$	14,621,540.91	\$	-	\$	14,621,540.91
BlackRock LifePath Index 2050O	\$ (39,916.85) \$	(5,5	41.20)	\$ -	\$	-	\$	1,201,357.43	\$	-	\$	-	\$	7,654,062.57	\$	-	\$	7,654,062.57
BlackRock LifePath Index 2055O	\$ (6,092.68) \$		24.03)		\$	(10,543.02)	\$	517,013.62	\$	-	\$	-	\$	3,308,665.73		-	\$	3,308,665.73
BlackRock LifePath Index 2060O	\$ (229.18) \$	(1,3	66.92)	\$ -	\$	-	\$	84,209.07	\$	-	\$	-	\$	553,882.89	\$	-	\$	553,882.89
BlackRock LifePath Index 2065O	\$ (144.50) \$	1	81.43)	\$ -	\$	-	\$	5,415.85	\$	-	\$	-	\$	37,337.35	\$	- :	\$	37,337.35
BlackRock LifePath Index Ret O	\$ (338,260.71) \$		73.47)	\$ -	\$	4.24	\$	2,387,981.11	\$	-	\$	-	\$	27,055,605.69		- :	\$	27,055,605.69
BlackRock MS AC IMI Idx NoLe M	\$ (80,076.10) \$	(10,7	54.03)	\$ -	\$	34.86	\$	4,529,819.03	\$	-	\$	-	\$	28,130,877.34	\$	- 1	\$	28,130,877.34
BlackRock MSCIACWlexUSIMIIM	\$ (132,048.90) \$	(6,8)	77.18)	\$ -	\$	7.72	\$	1,934,286.95	\$	-	\$	-	\$	13,303,034.88	\$	-	\$	13,303,034.88
BlackRock Russell 2500 Index M	\$ (16,277.83) \$	(9	06.19)	\$ -	\$	2.88	\$	1,230,923.28	\$	-	\$	-	\$	5,847,690.74	\$	-	\$	5,847,690.74
BlackRock Sh Term Investment W	\$ (132,876.87) \$	(1,6	32.23)	\$ 10,761.9	5 \$	6.03	\$	-	\$	-	\$	-	\$	6,326,213.17	\$	3,471.44	\$	6,329,684.61
BlackRock US Debt Ind M	\$ (49,120.99) \$	(2,4	21.56)	\$ -	\$	40.87	\$	209,028.49	\$	-	\$	-	\$	7,636,839.99	\$	-	\$	7,636,839.99
BlackRock US Tre Inf Pro Sec M	\$ (17,389.16) \$	(1,2	63.19)	\$ -	\$	-	\$	155,542.55	\$	-	\$	-	\$	3,833,857.74	\$	-	\$	3,833,857.74
CREF Bond Market R3	\$ (446,099.34) \$		-	\$ -	\$	-	\$	1,324,256.87	\$	27,182,888.51	\$	1,472,049.56	\$	-	\$	-	\$	28,654,938.07
CREF Equity Index R3	\$ (486,353.35) \$		-	\$ -	\$	-	\$	11,867,043.83	\$	63,449,539.94	\$	1,940,702.80	\$	-	\$	-	\$	65,390,242.74
CREF Global Equities R3	\$ (185,138.93) \$		-	\$ -	\$	-	\$	7,715,454.47	\$	39,497,108.39	\$	1,522,904.04	\$	-	\$	-	\$	41,020,012.43
CREF Inflation-Linked Bond R3	\$ (82,865.37) \$		-	\$ -	\$	-	\$	531,969.19	\$	14,407,588.64	\$	1,378,568.27	\$	-	\$	-	\$	15,786,156.91
CREF Money Market R3	\$ (262,685.32) \$		-	\$ -	\$	-	\$	9,777.82	\$	15,531,158.98	\$	1,773,904.48	\$	43,330.87	\$	11,109.05	\$	17,359,503.38
CREF Stock R3	\$ (2,037,438.60) \$		-	\$ -	\$	-	\$	32,898,791.98	\$	161,926,046.67	\$	23,740,257.94	\$	-	\$	-	\$	185,666,304.61
TIAA Real Estate	\$ (321,545.76) \$	(2,5	65.68)	\$ -	\$	3,957.05	\$	(596,303.92)	\$	31,097,188.38	\$	1,879,102.45	\$	6,754,452.10	\$	-	\$	39,730,742.93
TIAA Traditional	\$ (1,729,001.47) \$	(6,	746.11)	\$ -	\$	6,035.41	\$	2,244,226.95	\$	165,343,397.67	\$	35,556,053.77	\$	16,596,774.55	\$	9,384,281.97	\$	226,880,507.96
TIAA-CREF Self Directed Acct	\$ - \$, .	- '	\$ -	\$	-	\$	52,137.86	\$	-	\$	-	\$	1,122,567.19	\$	-	\$	1,122,567.19
Total	\$ (6,831,008.69) \$	(84,79	0.89)	\$ 10,761.95	5 \$	(445.88)	\$	83,366,902.83	\$	518,434,917.18	\$	69,263,543.31	\$	239,339,593.68	\$	9,398,862.46	\$ 8	36,436,916.63
CREF Growth R3	\$ (105,867.95) \$		-	\$ -	\$	-	\$	4,249,741.92	\$	17,125,899.63	\$	1,535,499.22	\$	_	\$	- 1	\$	18,661,398.85
CREF Social Choice R3	\$ (42,468,40) \$		-	\$ -	\$		\$	1.147.231.87	\$	9.173.915.39		148,299,90			\$	-	\$	9.322.215.29
Total	\$ (148,336.35) \$		-	\$ -	\$	-	\$		\$		\$	1,683,799.12		-	\$	-	\$	27,983,614.14
Grand Total	\$ (6,979,345.04)	(84,79	0.89)	\$ 10,761.9	5 \$	(445.88)	\$	88,763,876.62	\$	544,734,732.20	\$	70,947,342.43	\$	239,339,593.68	\$	9,398,862.46	\$ 8	64,420,530.77

[&]quot;Other - represent balances in TPA and Interest Only products under the IIAA Traditional fund and Forleiture/Revenue Credit Account balances in the CREF Money Market fund and BlackRock Sh Term Investment W

[&]quot;Other Activity - represent Plan Servicing Credits of \$10,037, 14 and External Transfers of (\$10,543.02)

ORPHE – TIAA Participant Use of Funds (All Funds)



Prepared by TIAA as of June 30, 2020 (Page 1 of 2)

VIRGINIA ORP
PARTICIPANT COUNT REPORT
AS OF JUNE 30, 2020
PLAN - 101850 & 500964
ALL LINES OF BUSINESS

						RETIREMENT					% Change from
	GRA	INTEREST ONLY	RA	RETIREMENT	TPA	CHOICE TPA	NUMBER OF	Percentage of	Prior Quarter - 1st		7/1/04 to Current
FUND NAME	CONTRACTS	CONTRACTS	CONTRACTS	CHOICE (84)	CONTRACTS	(84)	PARTICIPANTS	account holders.	QTR 2020	7/1/2004	Quarter
BlackRock Equity Index Fund J				1269			1269	15.2%	1259	0	N/A
BlackRock LifePath Index 20250				352			352	4.2%	352	0	N/A
BlackRock LifePath Index 20300				445			445	5.3%	452	0	N/A
BlackRock LifePath Index 20350				463			463	5.6%	466	0	N/A
BlackRock LifePath Index 20400				489			489	5.9%	493	0	N/A
BlackRock LifePath Index 20450				521			521	6.3%	521	0	N/A
BlackRock LifePath Index 20500				389			389	4.7%	389	0	N/A
BlackRock LifePath Index 20550				252			252	3.0%	253	0	N/A
BlackRock LifePath Index 20600				88			88	1.1%	86	0	N/A
BlackRock LifePath Index 20650				5			5	0.1%	1	0	N/A
BlackRock LifePath Index Ret O				531			531	6.4%	549	0	N/A
BlackRock MS AC IMI Idx NoLe M				1803			1803	21.6%	1821	0	N/A
BlackRock MSCIACWlexUSIMIIM				1012			1012	12.1%	1022	0	N/A
BlackRock Russell 2500 Index M				175			175	2.1%	159	0	N/A
BlackRock Sh Term Investment W				421			421	5.1%	411	0	N/A
BlackRock US Debt Ind M				1011			1011	12.1%	1010	0	N/A
BlackRock US Tre Inf Pro Sec M				678			678	8.1%	675	0	N/A
CREF Bond Market R3	1713		98				1811	21.7%	1822	971	86.51%
CREF Equity Index R3	1891		79				1970	23.6%	2001	1,049	87.80%
CREF Global Equities R3	2078		91				2169	26.0%	2206	1,799	20.57%
CREF Growth R3	835		47				882	10.6%	891	2,038	-56.72%
CREF Inflation-Linked Bond R3	1208		70				1278	15.3%	1285	379	237.20%
CREF Money Market R3	1272		148				1420	17.0%	1432	793	79.07%
CREF Social Choice R3	438		17				455	5.5%	460	1,004	-54.68%
CREF Stock R3	3340		521				3861	46.3%	3918	3,677	5.00%
TIAA Real Estate	2601		130	1444			4175	50.1%	4227	1,396	199.07%
TIAA Traditional	4008	31	842	1518	253	10	6662	80.0%	6707	3,589	85.62%
TIAA-CREF Self Directed Acct				21			21	0.3%	14	0	N/A
TOTAL INACTIVE PARTICIPANTS							5108	61%	5113	3,168	61.24%
TOTAL ACTIVE PARTICIPANTS							3224	39%	3258	2,988	7.90%
TOTAL PARTICIPANTS	'						8332	100%	8371	6,156	35.35%

ORPHE – TIAA Participant Use of Selected Funds

Virginia Retirement System

Prepared by TIAA as of June 30, 2020 (Page 2 of 2)

VIRGINIA ORP
PARTICIPANT COUNT REPORT
AS OF JUNE 30, 2020
PLAN - 101850 & 500964
ALL LINES OF BUSINESS

			$\overline{}$		$\overline{}$			$\overline{}$	$\overline{}$	$\overline{}$	
FUND NAME	GRA CONTRACTS	INTEREST ONLY CONTRACTS		RETIREMENT CHOICE (84)		RETIREMENT CHOICE TPA (84)	NUMBER OF PARTICIPANTS	Percentage of account holders.	Prior Quarter - 1st QTR 2020	7/1/2004	% Change from 7/1/04 to Current Quarter
BlackRock Equity Index Fund J				1269		\\\-\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	1269	15.2%	1259	0	N/A
BlackRock LifePath Index 2025O				352			352	4.2%	352	0	N/A
BlackRock LifePath Index 2030O				445	1		445	5.3%	452	0	N/A
BlackRock LifePath Index 2035O				463			463	5.6%	466	0	N/A
BlackRock LifePath Index 20400				489	1		489	5.9%	493	0	N/A
BlackRock LifePath Index 2045O				521			521	6.3%	521	0	N/A
BlackRock LifePath Index 2050O				389			389	4.7%	389	0	N/A
BlackRock LifePath Index 2055O				252			252	3.0%	253	0	N/A
BlackRock LifePath Index 20600				88			88	1.1%	86	0	N/A
BlackRock LifePath Index 2065O				5			5	0.1%	1	0	N/A
BlackRock LifePath Index Ret O				531			531	6.4%	549	0	N/A
BlackRock MS AC IMI Idx NoLe M				1803			1803	21.6%	1821	0	N/A
BlackRock MSCIACWlexUSIMIIM				1012			1012	12.1%	1022	0	N/A
BlackRock Russell 2500 Index M				175			175	2.1%	159	0	N/A
BlackRock Sh Term Investment W				421			421	5.1%	411	0	N/A
BlackRock US Debt Ind M				1011			1011	12.1%	1010	0	N/A
BlackRock US Tre Inf Pro Sec M				678			678	8.1%	675	0	N/A
CREF Bond Market R3	1713		98				1811	21.7%	1822	971	86.51%
CREF Equity Index R3	1891		79				1970	23.6%	2001	1,049	87.80%
CREF Global Equities R3	2078		91				2169	26.0%	2206	1,799	20.57%
CREF Inflation-Linked Bond R3	1208		70				1278	15.3%	1285	379	237.20%
CREF Money Market R3	1272		148				1420	17.0%	1432	793	79.07%
CREF Stock R3	3340		521				3861	46.3%	3918	3,677	5.00%
TIAA Real Estate	2601		130	1444			4175	50.1%	4227	1,396	199.07%
TIAA Traditional	4008	31	842	1518	253	10	6662	80.0%	6707	3,589	85.62%
TIAA-CREF Self Directed Acct				21			21	0.3%	14	0	N/A
TOTAL INACTIVE PARTICIPANTS	· '	·			<u> </u>	·	5108	61%	5113	3,168	61.24%
TOTAL ACTIVE PARTICIPANTS		·				·	3224	39%	3258	2,988	7.90%
TOTAL PARTICIPANTS					<u> </u>	<u> </u>	8332	100%	8371	6,156	35.35%

VRS Defined Contribution Plans End of Quarterly Review





Master Page # 182 of 182 - Defined Contribution Plans Advisory Committee (DCPAC) Meeting 8/27/2020