



Richmond Retirement System

RRS

Building your financial future

A Pension Trust
Fund of the City
of Richmond,
Virginia

Comprehensive Annual Financial Report

For the fiscal year ended June 30, 2019

Comprehensive Annual Financial Report

for the fiscal year ended
June 30, 2019

Vision

Our vision is to be a recognized leader in pension fund management and administration, the standard by which others measure their progress and success. Every employee of the Richmond Retirement System (RRS) displays a devotion to maintaining excellence in public service and embraces the highest standards of excellence, accountability, dependability and integrity. All participating employers, along with active, former and vested members, should take pride in knowing that the RRS provides the best retirement services available and is an exemplary steward of their pension funds.

Mission

To deliver timely and effective communications and retirement services with integrity and professionalism to the members of the Richmond Retirement System (RRS), its Board of Trustees, City officials, departments, and City Council.

A publication of the
Richmond Retirement System,
A pension trust fund of the City of Richmond, Virginia



The Atrium of the Jefferson Hotel

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Historic Richmond Home



The Carillon

Introductory Section

In this section:

Awards

Letter of Transmittal

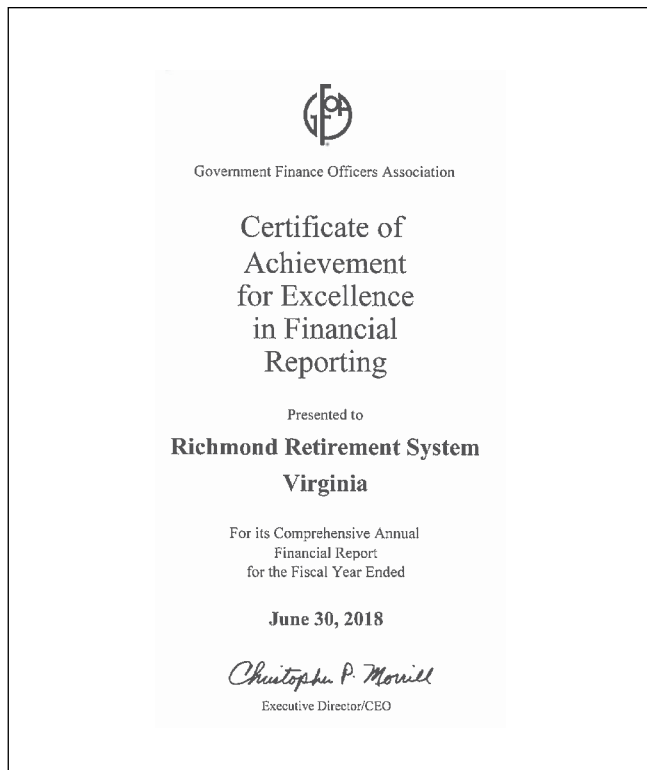
Organizational Chart

Board of Trustees

Executive Director

Investment Managers and
Other Service Providers

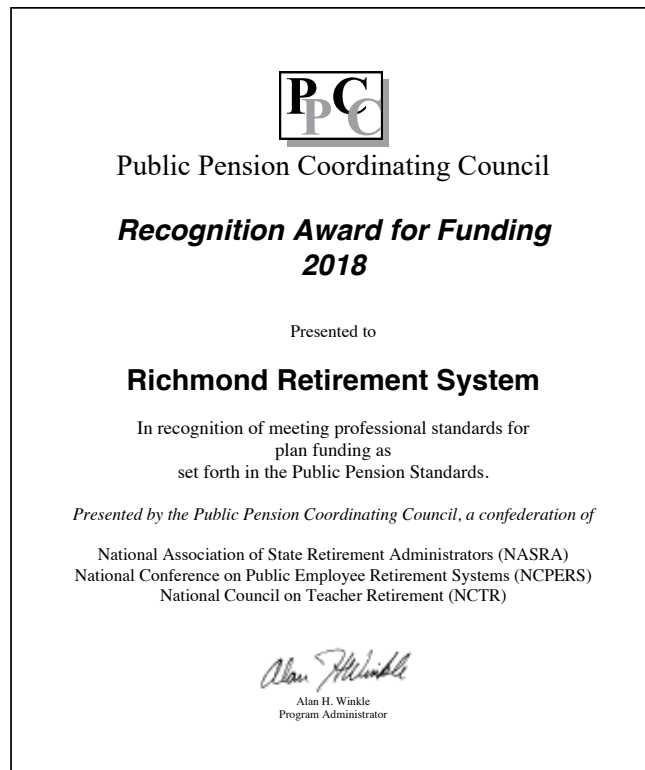
Awards



Certificate of Achievement for Excellence in Financial Reporting

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to the RRS for its Comprehensive Annual Financial Report (CAFR) for the fiscal year ended June 30, 2018. This was the 28th consecutive year that the RRS achieved this prestigious recognition.

To be awarded the certificate, a government unit must publish an easily readable and efficiently organized comprehensive annual report. This report must satisfy both generally accepted accounting principles and applicable legal requirements. The certificate is valid for a period of one year. The RRS's CAFR for the fiscal year ended 2019 continues to conform to the Certificate of Achievement Program requirements.



Public Pension Coordinating Council Achievement Award

The RRS received the 2018 Achievement Award from the Public Pension Coordinating Council (PPCC) in recognition of the agency's excellence in meeting the Public Pension Standards. Developed by PPCC, these standards are the benchmark for measuring excellence in defined benefit plan funding and administration.

This is the ninth award from the PPCC. The purpose of the award is to promote high professional standards for public employee retirement systems and publicly commend systems that adhere to these standards. The PPCC is a coalition of the National Association of State Retirement Administrators (NASRA), National Conference on Public Employee Retirement Systems (NCPERS) and the National Council on Teacher Retirement (NCTR).

Letter of Transmittal



October 25, 2019

To the Honorable Richmond City Council and
Mayor Levar M. Stoney
Richmond, VA 23219

On behalf of the Board of Trustees of the Richmond Retirement System (RRS or the System) and in accordance with City of Richmond code § 22-54, I am pleased to submit the RRS Comprehensive Annual Financial Report (CAFR) for the fiscal year ended June 30, 2019. The CAFR was prepared by the RRS, a pension trust fund of the City of Richmond, and management maintains responsibility for the accuracy and completeness of the presentation including all disclosures.

In addition to this Introductory Section, the RRS's CAFR contains a Financial Section, Investment Section, Actuarial Section, and Statistical Section. This Letter of Transmittal is designed to complement Management's Discussion and Analysis (MD&A) and should be read in conjunction with it. The MD&A can be found in the Financial Section and provides an in-depth analysis of the RRS's financial statements. The Financial Section also includes the report of the RRS's independent auditor, which states the auditor's opinion on the financial position of the RRS.

Overview

The RRS was first established in 1945 by Richmond City Council and reestablished by the acts of the Virginia General Assembly in 1998, 2005, 2008, and 2010. This is the 74th year of operations. The System administers its defined benefit plan in accordance with provisions outlined in both the Richmond City Charter (5B.01) and Chapter 22 of the Richmond Municipal Code. A single employer, the City of Richmond, and its component unit, The Richmond Behavioral Health Authority, participate in the RRS on behalf of their employees.

Accounting Basis and Internal Controls

Financial statements included in the CAFR have been prepared in accordance with generally accepted accounting principles (GAAP) for governmental accounting and reporting under the Governmental Accounting Standards Board (GASB).

The accrual basis of accounting is used in the preparation of the financial statements. Revenues are recognized when they are earned and become measurable; expenses are recognized when the liabilities are incurred. Investments are reported at fair value. In management's opinion, the financial statements present fairly the RRS's net position at June 30, 2019 and the changes in its plan net position.

continued on next page

RRS management is responsible for maintaining a system of adequate internal controls designed to provide reasonable, rather than absolute, assurance that the financial statements are free of any material misstatements. The concept of reasonable assurance recognizes that these controls should be cost-effective and that the cost of a control should not exceed the benefits derived from that control. In management's opinion, the internal controls in effect during fiscal year 2019 adequately safeguard the System's assets and provide reasonable assurance regarding the proper recording of financial transactions.

Funding

At June 30, 2019, the Plan Fiduciary Net Position as a percentage of the Total Pension Liability (Funded Status) was 61.0%, compared to 65.1% at June 30, 2018. During 2019, the city of Richmond contributed \$2 million in addition to fully funding the Actuarially Determined Contribution.

Investments

For the fiscal year ended June 30, 2019, the RRS's investment portfolio returned 4.2% on a net-of-fees (net) basis compared to an investment return of 7.2% net in the prior year. The fair market value of the RRS investment portfolio at June 30, 2019 was \$577.9 million, an increase of \$2.5 million from the prior year.

Major Initiatives and Awards

During the fiscal year ended June 30, 2019, an Experience Study was completed which included lowering the assumed rate of return from 7.5% to 7.0%; new, updated mortality tables were also implemented. RRS hired a new independent investment consultant, Callan. In addition, an Asset Liability Study was completed.

The Government Finance Officers Association (GFOA) awarded the RRS its Certificate of Achievement for Excellence in Financial Reporting for the 2018 Comprehensive Annual Financial Report. This national award is granted to entities whose comprehensive annual financial reports meet or exceed the GFOA's guidelines. Additionally, the RRS was awarded a Certificate of Funding and Administration by the Public Pension Coordinating Council (PPCC) for the fiscal year ended June 30, 2018.

Acknowledgments

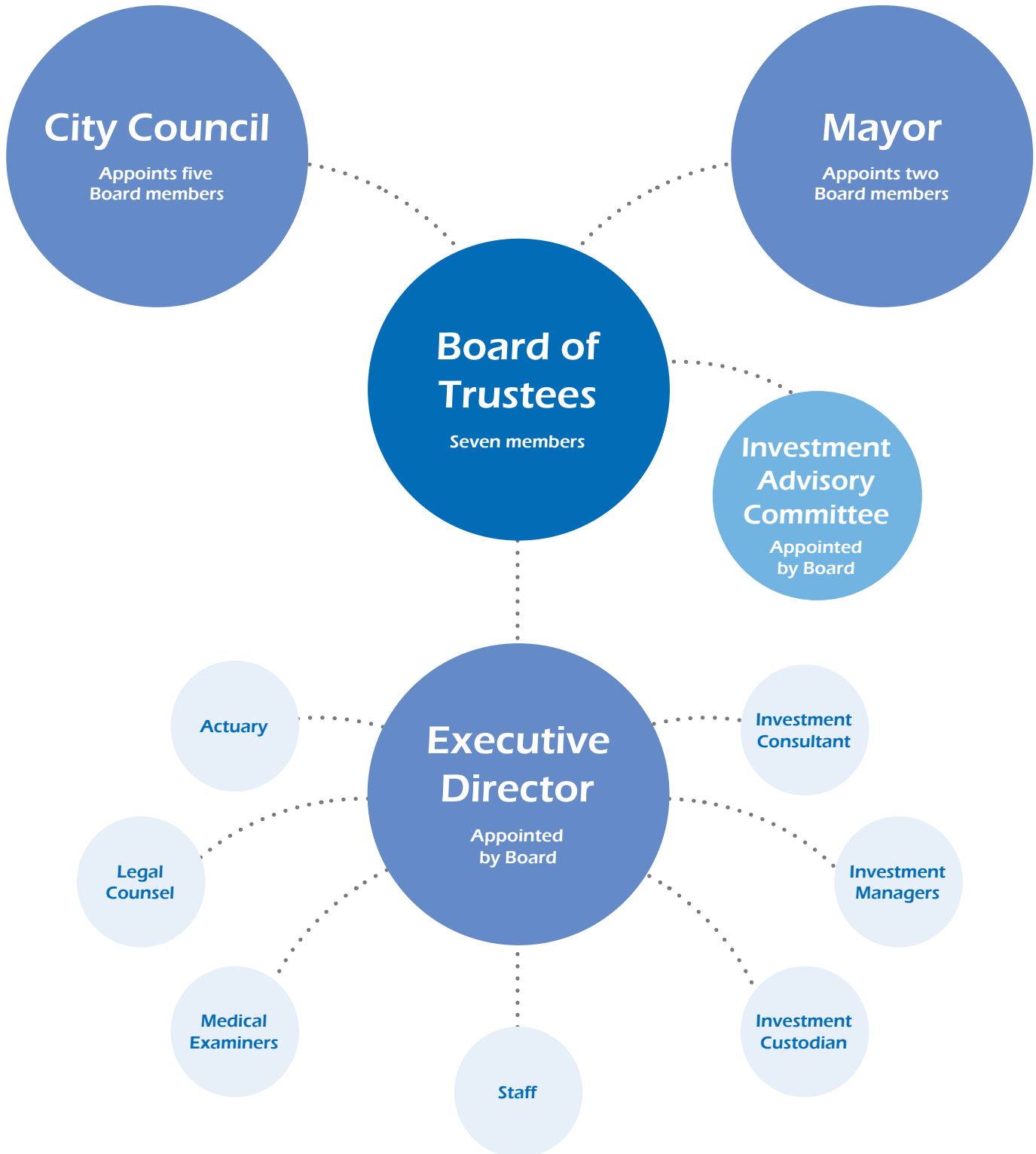
I would like to express my gratitude to the Board of Trustees, Investment Advisory Committee, and my staff. I would also like to thank City Council and the Mayor of the City of Richmond for your continued support of the Richmond Retirement System.

Respectfully submitted,



Leo F. Griffin, CPA
Executive Director

Organizational Chart



Board of Trustees



David H. Naoroz
Chairman

Lieutenant
Police Department
City of Richmond



Kevin W. Davenport
Vice Chairman

Vice President of Administration & Finance
and CFO
Virginia State University



Jess T. Ellington

Chief Investment Officer &
Senior Vice President
Atlantic Union Bankshares Corporation



Elizabeth Cabell Jennings,
CFA, CAIA

Senior Vice President &
Director of Institutional Investments
SunTrust



Nan Leake

Advisory Partner
Partners Group



Matthew E. Peanort

Program Manager
Police Department
City of Richmond



Michael Williams

Senior Wealth Advisor & Senior Vice President
South State Bank

Executive Director



Leo F. Griffin, CPA
Executive Director

Richmond Retirement System

Investment Advisory Committee

The Board of Trustees has established an Investment Advisory Committee (IAC) to provide recommendations to the Board on investments and investment policy. Members of the IAC serve at the pleasure of the Board of Trustees

The IAC meets quarterly and consists of five to seven members of which at least two are current members of the Board. The remainder of the IAC are persons who are not otherwise affiliated with RRS and who have demonstrated skill and expertise in institutional investments.

IAC members who are not members of the Board of Trustees serve up to two consecutive three-year terms for a total of six years. IAC members who also serve on the Board of Trustees have IAC terms that match their two consecutive three-year Board terms.

A list of IAC members can be found at:
www.richmondgov.com/retirement

Investment Managers and Other Service Providers*

Investment Managers

Domestic Equity

Fidelity Institutional Asset Management
Smithfield, RI

LSV Asset Management Chicago, IL

State Street Global Advisors Boston, MA

International Equity

Acadian Asset Management, Inc. Boston, MA

Allianz Global Investors LLC New York, NY

Axiom International Investors, LLC Greenwich, CT

Global Multi-Sector Fixed Income

Brandywine Global Investment Management, LLC
Philadelphia, PA

Loomis, Sayles & Co., L.P. Boston, MA

Stone Harbor Investment Partners, L.P. New York, NY

Opportunistic Fixed Income

Global Credit Advisors New York, NY

Rimrock Capital Management, LLC Irvine, CA

Hedge Fund

ABS Investment Management, LLC Greenwich, CT

Blackstone Alternative Asset Management Associates, LLC New York, NY

Graham Capital Management, LP Rowayton, CT

Pharo Management, LLC New York, NY

Protégé Partners OP Fund, Ltd. New York, NY

Private Equity

Coller Capital London, UK

EIG Global Energy Partners Washington, D.C.

Lexington Partners, Inc. Boston, MA

Private Advisors, LLC Richmond, VA

StepStone Group, LLC San Diego, CA

TPG Opportunities Partners, L.P. San Francisco, CA

Private Debt

Alcentra Ltd. London, UK

Audax Group, L.P. Boston, MA

CarVal Investors Hopkins, MN

Golub Capital New York, NY

Park Square Capital, LLP London, UK

Real Estate

CenterSquare Investment Management
Plymouth Meeting, PA

J.P. Morgan Asset Management New York, NY

Oaktree Capital Management Los Angeles, CA

Orion Capital Managers London, UK

Other Service Providers

Actuary

SageView Consulting Group, LLC Glen Allen, VA

Auditor

Moss Adams LLP Albuquerque, NM

Investment Consultant

Callan, LLC San Francisco, CA

Legal Counsel

K&L Gates LLP Seattle, WA

Troutman Sanders LLP Richmond, VA

McGuireWoods LLP Richmond, VA

Master Custodian

State Street Corporation Kansas City, MO

*The Investment Section, beginning on page 42, provides detailed information regarding investment performance, asset allocation, investment management fees and expenses, and an investment summary. The Schedule of Fees on page 49 provides detailed information regarding investment management fees and expenses.



Financial Section

The RRS administers retirement benefit plans for its active members, retirees, and beneficiaries. The purpose of the financial section is to present the plan's financial condition for the fiscal year. To support this information, the section includes Management's Discussion and Analysis as well as the Notes to the Financial Statements.

In this section:

Report of Independent Auditor
Management's Discussion and Analysis
Statement of Fiduciary Net Position
Statement of Changes in Fiduciary Net Position
Notes to Financial Statements
Summary of Significant Financial Policies
Deposits and Investments
Litigation
Plan Description
Contributions Required and Contributions Made

Report of Independent Auditor



To the Board of Trustees
Richmond Retirement System
Richmond, Virginia

Report on the Financial Statements

We have audited the accompanying financial statements of Richmond Retirement System (the System), a component unit of the City of Richmond, Virginia, which comprise the statements of fiduciary net position as of June 30, 2019 and 2018, the related statements of changes in fiduciary net position for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the System as of June 30, 2019 and 2018, and the respective change in fiduciary net position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

continued on next page

Other Matter

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the accompanying management's discussion and analysis, schedule of changes in the employer's net pension liability and related ratios, schedule of employer's contributions, schedule of investment returns, and notes to the schedules be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the System's basic financial statements. The schedule of administrative expenses, schedule of investment expenses, schedule of payments to investment consultant, and schedule of retirement benefits (collectively, the supplementary information) are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The supplementary information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the supplementary information is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Information

The introductory, investment, actuarial, and statistical sections are presented for purposes of additional analysis and are not a required part of the basic financial statements of the System. Such additional information has not been subjected to the auditing procedures applied in the audit of the basic financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

Mess Adams LLP

Albuquerque, New Mexico
October 15, 2019 except for consideration of
Supplementary and Other Information as to
which the date is October 25, 2019

Management's Discussion and Analysis

This section presents management's discussion and analysis of the Richmond Retirement System's (RRS, System, or Plan) financial performance during the fiscal year ended June 30, 2019. Please read it in conjunction with the accompanying financial statements and the related notes.

This report is prepared in accordance with the principles of governmental accounting and reporting promulgated by the Governmental Accounting Standards Board (GASB). Investments are stated at fair market value or net asset value and income includes the recognition of unrealized gains or losses. The accrual basis of accounting is used to record assets, liabilities, revenues, and expenses. Revenue recognition occurs when earned without regard to the date of collection. Expense recognition occurs when the corresponding liabilities are incurred, regardless of payment date. For ease of reading, the dollar amounts that appear in this narrative are typically rounded to the closest one thousand dollars.

[The financial section contains the following information:](#)

1. Basic Financial Statements including:

- a) Statements of fiduciary net position
- b) Statements of changes in fiduciary net position
- c) Notes to financial statements

2. Required Supplementary Information including:

- a) Schedule of changes in the employers' net pension liability and related ratios
- b) Schedule of employers' contributions
- c) Notes to the schedules
- d) Schedule of investment returns

3. Additional Information including:

- a) Schedule of administrative expenses
- b) Schedule of investment expenses

The basic financial statements are described as follows:

- The statement of fiduciary net position shows the account balances at year end and includes the net position restricted for pensions. The Plan's net position is restricted to the payment as shown in the schedule of changes in the employers' net pension liability and related ratios.
- The statement of changes in fiduciary net position shows the sources and uses of funds during the year corresponding to the change in net position from the previous year.
- The notes to the financial statements are an integral part of the financial statements and include additional detailed information and schedules to provide a better understanding of the financial statements.

The required supplementary information provides historical data and projected obligations that reflect the long-term nature of the Plan and trends over time.

- Schedule of changes in the employers' net pension liability and related ratios contains the items contributing to the changes in the pension liability and the Plan's net position. Ratios comparing the Plan's net position to the pension liability and the net pension liability to covered-employee payroll are also provided.
- Schedule of employers' contributions contains a history of employer contributions made to the Plan.
- Schedule of investment returns contains a history of the Plan's investment performance on a money-weighted basis.

Financial Highlights

- The System's net position increased by \$3.5 million and \$16.4 million during the years ended June 30, 2019 and 2018, respectively. Investments returned 4.2% (all returns are shown net-of-fees) for the year ended 2019 and 7.2% in 2018. In the year ended June 30, 2019, the S&P 500 Index rose 10.4%, while small cap stocks, as represented by the Russell 2000 Index, were hampered by the fear of slowing global growth and fell by negative 3.3%. Growth sectors fueled the advance in U.S. equities with select names in the technology sector seeing significant gains. International markets trailed the U.S. equity market and returned slightly positive returns. Bonds, represented by the Bloomberg Barclays Aggregate, gained 7.9% as the U.S. Treasury yield curve shifted lower across maturities.
- Total additions to net position were \$75.6 million in 2019, compared to \$87.4 million in the prior year. For 2019, revenue includes member and employer contributions of \$50.5 million and net investment income of \$25.1 million. Member and employer contributions increased by \$2.0 million in 2019 compared to a \$3.4 million increase in 2018.
- The Plan is closed to general employee membership and has a declining general employee membership payroll. Net investment income, which fluctuates year-to-year depending on market conditions, was \$13.7 million less in 2019 than in 2018. During 2019, U.S. equity was the top investment performer. Both public and private fixed income as well as private equity tracked closely behind. Non-U.S. equity was the only asset class to post a decline. Within U.S. equities, growth managers outpaced their value counterparts. At June 30, 2019, RRS had modest allocations to private equity and did not hold a dedicated U.S. equity growth fund. Exposure to equities located outside the U.S. detracted from performance.
- Total plan expenses in 2019 were \$72.0 million, a \$1.0 million increase from 2018. Total expenses are primarily driven by pension benefit payments, which compose 98% of total expenses. For the years ended June 30, 2019 and 2018, retiree benefits increased by \$837 thousand and \$521 thousand, respectively.



Financial Statements and Analysis

Summary of Financial Statements:

The table below provides a summary of the financial statements as of and for the year ended June 30:

Activity for the Fiscal Year Ended June 30	2019	2018	2017
Total Assets	\$ 598,422,666	\$ 594,012,689	\$ 576,228,678
Total Liabilities	(25,787,561)	(24,927,379)	(23,516,117)
Net Assets Position	<u>572,635,105</u>	<u>569,085,310</u>	<u>552,712,561</u>
Contributions	50,475,517	48,511,853	45,061,707
Net Investment Earnings	25,100,251	38,843,025	62,841,319
Total Additions	<u>75,575,768</u>	<u>87,354,878</u>	<u>107,903,026</u>
Benefits Payments	70,748,768	69,773,981	69,302,957
Administrative Expenses	1,277,205	1,208,148	1,141,301
Total Deductions	<u>72,025,973</u>	<u>70,982,129</u>	<u>70,444,258</u>
Total Additions	75,575,768	87,354,878	107,903,026
Total Deductions	(72,025,973)	(70,982,129)	(70,444,258)
Net Change	<u>\$ 3,549,795</u>	<u>\$ 16,372,749</u>	<u>\$ 37,458,768</u>
Contribution Rates			
General	50.03%	46.51%	43.08%
Police/Fire	41.02%	40.56%	38.36%

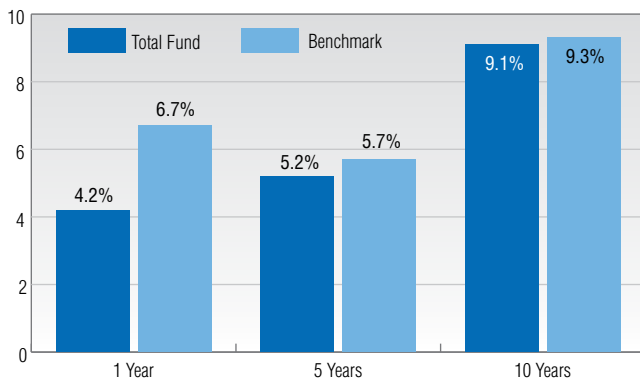
Revenues – Additions to Net Plan Position

- Total employer and member contributions increased by 4.0% in 2019 and increased by 7.7% in 2018. During 2019, the employers' contribution rate was 50.03% for general employees and 41.02% for police and fire. In 2018, the employers' contribution rate was 46.51% for general employees and 40.56% for police and fire. Member contribution rates vary depending on the benefit selected; the majority of general members contributed 1.0% in both years while the majority of police and firefighters contributed 1.5% in both years.
- The total net investment gain was \$25.1 million in 2019 compared to a \$38.8 million net investment gain in 2018. In 2019, the portfolio returned 4.2% underperforming its benchmark by 2.5%. In 2018,

the portfolio returned 7.2% and underperformed its benchmark by 0.2%. With the U.S. economy continuing its now-record expansion in 2019, investment managers struggled to match portfolio benchmarks. During the fiscal year, President Trump sharply increased previous tariffs on Chinese goods, which retriggered a trade war bringing further volatility to the global investment markets. Poor relative performance in 2019 carried over to the stated underperformance in the five- and ten-year time periods. Investment returns were below the System's benchmark for most time periods. Further investment data can be found in the Investment Section of this report beginning on p. 42.

Investment Performance (Net of Fees)

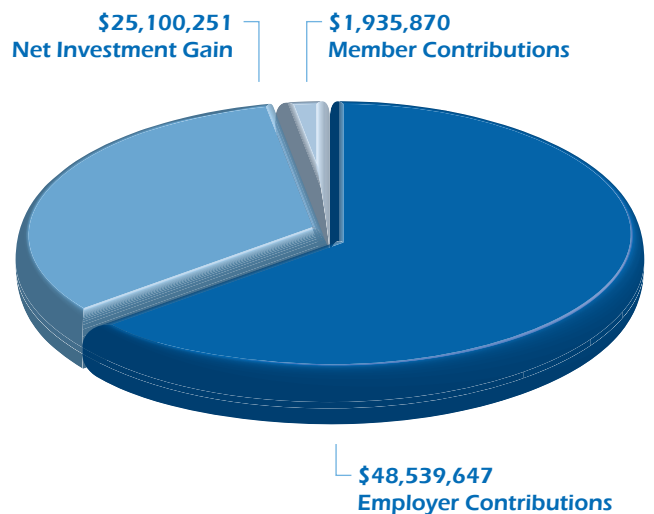
As of June 30, 2019



Callan uses a time-weighted performance calculation. Time period returns are determined by geometrically linking the holding period returns.

Revenues – Additions to Net Plan Position

Fiscal Year 2019

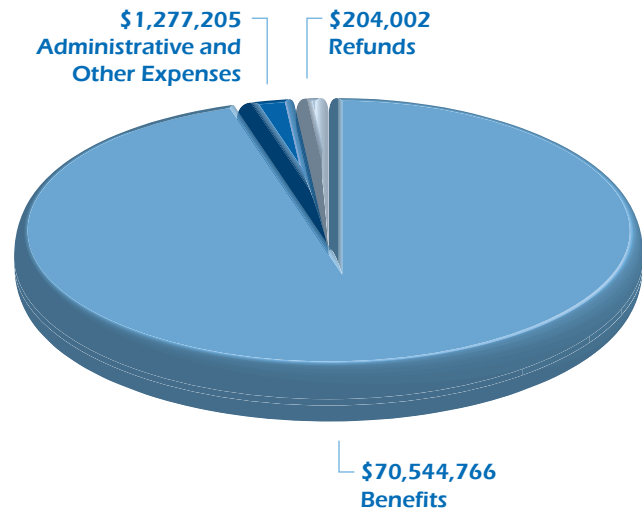


Expenses – Deductions from Net Plan Assets

- Retiree benefits paid increased by \$837 thousand (1.2%) in 2019 and increased by \$521 thousand (0.8%) in 2018. The number of retirees and beneficiaries decreased by 18 members in 2019 and increased by 21 in 2018.
- Refunds of contributions increased by \$137 thousand (206.3%) in 2019 compared to a decrease of \$50 thousand (42.8%) in 2018. Lump sum withdrawals from the Plan fluctuate from year to year based on the number of non-vested participants that leave the System and the average size of withdrawal.
- Net administrative expenses include salaries and benefits for the RRS staff, along with other costs associated with administering the Plan and are shown on the Schedule of Administrative Expenses on page 40. Administrative expenses increased by \$69 thousand or 6.0% in 2019 and increased by \$67 thousand or 5.9% in 2018. In 2019, salaries and benefits primarily contributed to the increase in administrative expenses; in 2018, the city instituted a technology allocation resulting in the System's increase in administrative costs for that year. Staff and the Board continue to be diligent about Plan operating expenses.

Expenses – Deductions from Net Plan Assets

Fiscal Year 2019



Notes to the Financial Statements

The notes to the financial statements are an integral part of this financial report and provide additional information essential for a full understanding of RRS's financial statements.

Funded Status

The funded status is the ratio of the fair value of plan assets to the actuarial liability, or pension obligation. In accordance with Governmental Accounting Standard No. 67, the funded status is determined using the Fiduciary Net Position (market value of assets) and the Total Plan Liability (Entry Age actuarial cost method).

An increase in the funded status over time usually indicates a plan is gaining financial strength. However, a decrease in the funded status will not necessarily indicate a plan is in financial decline. Changes in actuarial assump-

tions and performance of financial markets can significantly impact the funded status.

The primary concern to most pension plan participants is whether there will be enough money available to pay benefits. The City of Richmond has traditionally contributed the actuarially determined contribution (ADC) as determined by the RRS's actuary. City Code requires that contributions to the RRS consist of a normal contribution plus an accrued liability contribution, which combined equal the ADC.

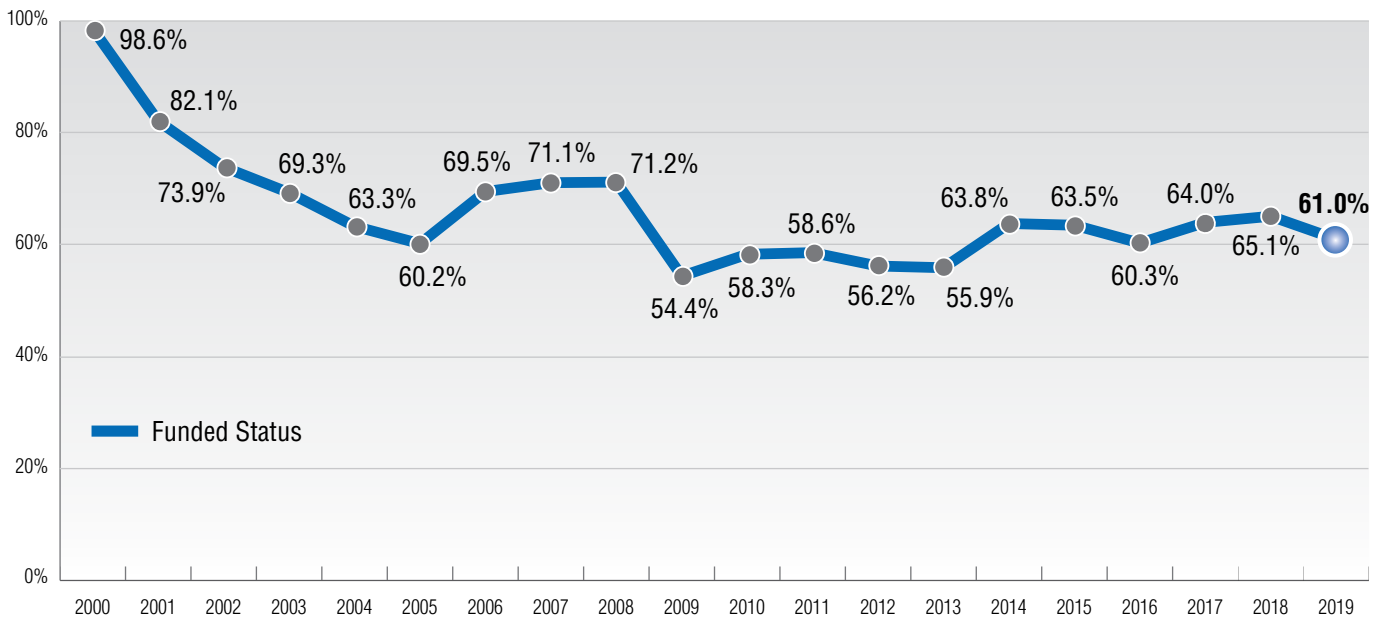
During 2019, the funded status fell from 65.1% in the prior year to 61.0%. Factors that contributed to the decrease in the 2019 funded status relate to changes in assumptions as a result of an Experience Study, which is performed every five years, as well as investment performance that fell short of the assumed rate of return.

The assumption changes that had the greatest impact on the funded status were a change in the assumed rate of return from 7.5% to 7.0% and the adoption of new mortality tables. RRS adopted the Pub-2010 Mortality Tables specific to public employer pension plans in 2019, which replaced the RP-2000 mortality table for healthy lives and the PBGC mortality tables for disabled lives. Over time, the benefit structure of the plan, coupled with contributions and investment returns, are primary drivers of the funded status.

Retiree Benefit Adjustment

During 2019, the RRS Board of Trustees changed its policy and no longer recommends ad hoc cost of living adjustments (COLAs). The Board acknowledged that it is responsible for the administration of the defined benefit retirement plan per Sec. 22-41 of the Municipal Code; whereas the City Council is responsible for benefits' policy including the granting of ad-hoc COLAs. Ad-hoc COLAs are a benefits' policy decision, which is outside the scope of the Board's responsibilities. The last ad hoc retiree COLA approved by the City Council occurred in 2008.

Schedule of Funding Status *As of June 30, 2019*



The funded status from 2000 to 2013 is calculated using methodology prior to the implementation of GASB 67.

Statement of Fiduciary Net Position

Defined Benefit Pension Trust Fund

As of June 30,

Assets	2019	2018
Cash and Short-Term Investments (Note II)	\$11,529,423	\$8,893,458
Receivables		
Receivables for Security Transactions	5,259,719	7,319,879
Employer Contributions	1,011,405	1,044,711
Interest and Dividends	225,206	264,603
Other Receivables	5,292	8,264
Total Receivables	6,501,622	8,637,457
Investments, at Fair Value (Note II)		
U.S. Equities	148,159,251	139,417,743
International Equities	100,842,560	104,730,927
U.S. Fixed Income	27,687,832	27,256,398
Global Fixed Income	103,751,377	98,473,242
Opportunistic Fixed Income	25,485,292	24,730,981
Real Estate Investment Trusts and Funds	35,364,309	35,958,505
Hedge Funds	75,944,723	77,992,802
Private Debt	37,559,835	45,537,178
Private Equity	23,070,051	21,293,255
Total Investments	577,865,230	575,391,031
Net Cash Collateral Received Under Securities Lending Program	2,165,902	670,173
Capital Assets		
Net Furniture, Fixtures & Equipment	152,657	178,100
Net Leasehold Improvement	207,832	242,470
Total Net Capital Assets	360,489	420,570
Total Assets	598,422,666	594,012,689
Liabilities		
DROP Payable	11,482,670	10,688,523
Payable for Security Transactions	9,499,135	11,230,514
Accounts Payable and Accrued Expenses	1,769,584	1,628,079
Investment Expenses Payable	613,000	458,798
Retirement and Death Benefits Payable	252,882	242,029
Total Accounts Payable	23,617,271	24,247,943
Payable for Collateral Received Under Securities Lending Program	2,170,290	679,436
Total Liabilities	25,787,561	24,927,379
Net Position Restricted for Pensions	\$572,635,105	\$569,085,310

The accompanying Notes to Financial Statements, which begin on page 22, are an integral part of this statement.

Statement of Changes in Fiduciary Net Position

Defined Benefit Pension Trust Fund

Year ended June 30,

Additions	2019	2018
City of Richmond (Note V)	\$47,439,885	\$45,459,066
Richmond Behavioral Health Authority	1,028,522	1,024,279
Other	71,240	65,557
Total Employer Contributions	48,539,647	46,548,902
Total Member Contributions	1,935,870	1,962,951
Total Contributions	50,475,517	48,511,853
Investment Income		
Net Increase in Fair Value of Investments (Note II)	23,703,925	38,489,471
Dividends	2,794,041	1,771,975
Interest	853,437	737,884
Total Investment Income before Investment Expense	27,351,403	40,999,330
Investment Expenses	(2,257,533)	(2,167,181)
Net Investment Income	25,093,870	38,832,149
Security Lending Income		
Gross Income	48,772	59,155
Less Borrower Rebates, Agent Fees, Appreciation/Depreciation	(42,391)	(48,279)
Net Security Lending Income	6,381	10,876
Total Net Investment Gain	25,100,251	38,843,025
Total Additions	75,575,768	87,354,878
Deductions		
Retirement Benefits	(70,544,766)	(69,707,384)
Refunds of Member Contributions	(204,002)	(66,597)
Administrative Expenses	(1,217,123)	(1,148,066)
Depreciation Expense	(60,082)	(60,082)
Total Deductions	(72,025,973)	(70,982,129)
Net Increase	3,549,795	16,372,749
Net Position Restricted for Pensions		
Beginning of Year	569,085,310	552,712,561
End of Year	\$572,635,105	\$569,085,310

The accompanying Notes to Financial Statements, which begin on the following page, are an integral part of this statement.

Notes to Financial Statements

I. Summary of Significant Financial Policies

(A) Financial Reporting Entity

The Richmond Retirement System (RRS) is a component unit of the City of Richmond (the City), Virginia. The RRS's operations are accounted for as a blended component unit in the City's financial reporting entity because it provides services for the benefit of the City's employees. Its operations are included in the City of Richmond's basic financial statements as a fiduciary pension trust fund.

(B) Administration and Management

The RRS is governed by the Board of Trustees (the Board), which administers the retirement program according to the requirements of the Code of the City of Richmond, and other governing law. The Board has full power to invest and reinvest the trust funds of the RRS through the adoption of the investment policies and guidelines that fulfill the Board's investment objectives to maximize long-term investment returns while targeting an acceptable level of risk.

The Board of Trustees consists of seven members; City Council appoints five members and the Mayor appoints two members. The Board appoints an Executive Director to administer and transact the RRS's business. The Board also retains outside investment managers and consultants to advise and assist in the implementation of these policies. State Street Corporation is the custodian of designated assets of the RRS.

The provisions of Chapter 22 of the Code of the City of Richmond govern the actual operations of the RRS.

The Board of Trustees also has oversight of the Defined Contribution 401(a) Plan established for employees who were hired or rehired on or after July 1, 2006. The Defined Contribution Plan's financial transactions are not recorded in the RRS's accounting system. Therefore, these programs are not included in the RRS's financial statements.

(C) Accounting Basis

The financial statements are presented in accordance with U.S. Generally Accepted Accounting Principles (GAAP) using the accrual basis of accounting and the economic resources measurement focus.

Under the accrual basis, revenues are recognized when earned and expenses are recognized when liabilities are incurred, regardless of the timing of related cash flows.

Member and employer contributions are recognized as revenue, when due, in the period in which employees' services are performed pursuant to the City of Richmond Code.

Investment income is recognized when earned by the plan. Benefits and refunds are recognized when due and payable in accordance with the City Code.

(D) Administrative Expenses and Budget

The Board of Trustees approves expenses related to the administration and management of the RRS. These expenses are included in a budget prepared using the full accrual basis of accounting. Expenses for goods and services received but not paid for prior to the RRS's fiscal year end are accrued for financial reporting purposes in accordance with GAAP.

Receivables for Security Transactions

Receivables from Security Transactions consist of foreign currency and investment security sales that have occurred but are pending the final settlement. The System recognizes these transactions when they occur.

Payable for Security Transactions

Payable from Security Transactions consist of foreign currency and investment security purchases that have occurred but are pending the final settlement. The System recognizes these transactions when the obligation occurs.

II. Deposits and Investments

(A) Deposits

On June 30, 2019 and 2018, the carrying amount of the RRS's deposits with financial institutions were \$2,406,127 and \$2,297,737, respectively; the bank's reporting balances were \$2,818,143 and \$2,653,410, respectively. All funds deposited in banks are protected under the provisions of the Virginia Securities for Public Deposit Act (the Act).

(B) Securities Lending Program

The RRS lends securities to firms on a temporary basis through its custodian bank, State Street Corporation (Custodian) to approved borrowers. During the fiscal year, the Custodian acted as an agent of the RRS and received cash or other collateral, including securities issued or guaranteed by the United States government, for the securities lent.

Borrowers were required to deliver collateral for each loan in amounts equal to at least 100% of the fair value of the loaned securities. The RRS did not impose any restrictions during the fiscal year on the amount of the loans that the Custodian made on its behalf, and the Custodian indemnified the RRS by agreeing to purchase replacement securities, or return the cash collateral, in the event the borrower failed to return the loaned security. There were no such failures by any borrowers during the fiscal year, nor were there any losses during the fiscal year resulting from a default of a borrower or the Custodian.

The RRS and the borrowers maintained the right to terminate all securities lending transactions on demand. The cash collateral received on each loan was invested, together with the cash collateral of other qualified tax-exempt plan lenders, in a collective investment pool. As the loans are terminable at will, the duration of the investments generally did not match the duration of the investments made with the cash collateral.

For the year ended June 30, 2019, the average duration of the short-term investments in the duration pool, which includes securities with a remaining maturity of 91 days or greater, was 1,697 days with weighted average maturity of 20 days. The average duration of the short-term invest-

ments in the liquidity pool, which primarily includes securities with the remaining maturity ranging from 3 to 84 days, was 105 days with weighted average maturity of 23 days.

For the year ended June 30, 2018, the average duration of the short-term investments in the duration pool, which includes securities with a remaining maturity of 91 days or greater, was 5,027 days with weighted average maturity of 403 days. The average duration of the short-term investments in the liquidity pool, which primarily includes securities with the remaining maturity ranging from 3 to 112 days, was 105 days with weighted average maturity of 114 days.

The following table shows the fair value measurements of the securities lent, cash collateral received, and the reinvested cash collateral.

Securities Lent	Fair Value of Underlying Securities Lent	Cash Collateral Received	Collateral Reinvestment Value
<i>at June 30, 2019</i>			
U.S. Government	\$1,208,944	\$1,233,250	\$1,230,756
U.S. Corporate Bonds & Equities	920,484	937,040	935,146
Total	\$2,129,428	\$2,170,290	\$2,165,902
<i>at June 30, 2018</i>			
U.S. Corporate Bonds & Equities	\$656,605	\$679,436	\$670,173

RRS also holds securities collateral that cannot be pledged or sold absent a borrower's default totaling \$688,902 and \$2,725,407 as of June 30, 2019 and 2018, respectively.

(C) Investments

1. Authorized Investments

The RRS invests in obligations of the U.S. government or its agencies, approved money market funds, other banks and savings and loan associations not exceeding federal insurance coverage, and commercial paper rated A-1 by Standard & Poor's or P-1 by Moody's. The RRS is also authorized to invest in fixed income securities; domestic and international equities; private debt; Real Estate Investment Trusts (REITs); private equity; private



James River rail bridge

real estate and hedge funds. Decisions as to individual equity security selection, security size and quality, number of industries and holdings, current income levels, turnover, and other tools employed by active managers are left to the managers' discretion, subject to the standards of fiduciary prudence, as set out in the respective manager's Investment Management Agreement. At June 30, 2019 and 2018, total unfunded commitments amounted to \$37.6 million and \$41.4 million, respectively.

2. Asset Allocation

The table below indicates the policy target asset allocation as of June 30, 2019 and 2018. In identifying the optimal asset mix strategy for the RRS, the Board of Trustees has adopted the aforementioned asset allocation policy. To ensure compliance with the policy, a rebalancing strategy is used.

Asset Class	Target Allocation	Target Range
U.S. Equity Total:	23.00%	
Large Cap Passive	8.00%	3% - 13%
Large Cap Growth	5.00%	0% - 10%
Large Cap Value	5.00%	0% - 10%
Small/Mid Cap Growth	5.00%	0% - 10%
International Equities Total:	15.00%	
Developed	8.00%	3% - 13%
Emerging	7.00%	2% - 12%
Fixed Income Total:	27.50%	
Global Multi-Sector	22.50%	17.5% - 27.5%
Opportunistic	5.00%	0% - 10%
Other Investments Total:	33.00%	
Hedge Funds	12.00%	7% - 17%
Private Equity	8.00%	3% - 13%
Private Debt	8.00%	3% - 13%
Real Estate	5.00%	0% - 10%
Cash Total:	1.50%	0% - 5%

3. Fair Value Measurements

The RRS categorizes the fair value measures of its assets within the fair value hierarchy established by generally accepted accounting principles outlined in GASB 72. The RRS has the following fair value measurements as of June 30, 2019 and 2018:

Investments Measured at Fair Value

as of June 30, 2019

	Fair Value at June 30, 2019	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
U.S. Equities				
Consumer Spending	\$3,216,573	\$3,216,573	\$ -	\$ -
Energy and Industrials	4,632,534	4,632,534	-	-
Information Technology	2,850,666	2,850,666	-	-
Financials	5,623,434	5,623,434	-	-
Health Care	2,598,298	2,598,298	-	-
Other	2,667,028	2,667,028	-	-
Total U.S. Equities	21,588,533	21,588,533	-	-
U.S. Fixed Income				
Corporate Bonds	17,426,201	13,671,838	3,754,363	-
Mortgage-Backed Securities	5,502,412	-	5,502,412	-
U.S. Treasury Obligations	4,759,219	4,759,219	-	-
Total U.S. Fixed Income	27,687,832	18,431,057	9,256,775	-
Global Fixed Income	7,947,829	4,007,227	3,940,602	-
Opportunistic Fixed Income	25,485,292	-	-	25,485,292
Real Estate Investment Trusts and Funds	8,252,322	6,131,966	-	2,120,356
Hedge Funds	27,324,159	-	-	27,324,159
Private Debt	37,559,835	-	-	37,559,835
Private Equity	23,070,051	-	-	23,070,051
Total Investments Measured at Fair Value Levels	178,915,853	<u>\$50,158,783</u>	<u>\$13,197,377</u>	<u>\$115,559,693</u>
Investments Measured at NAV Practical Expedient				
U.S. Equities	126,570,718			
International Equities	100,842,560			
Global Fixed Income	95,803,548			
Real Estate Investment Trusts and Funds	27,111,987			
Hedge Funds	48,620,564			
Total Investments Measured at NAV	<u>398,949,377</u>			
Total Investments at Fair Value	<u>\$577,865,230</u>			

Investments Measured at NAV Practical Expedient	Fair Value June 30, 2019	Redemption Frequency	Required Redemption Notice
U.S. Equities	\$126,570,718	Daily	3 - 5 days
International Equities	100,842,560	Daily	1 - 30 days
Global Fixed Income	95,803,548	Daily	1 - 10 days
Real Estate Investment Trusts and Funds	27,111,987	Quarterly	45 Days
Hedge Funds	48,620,564	Daily, Quarterly	1 - 95 days
Total Investments Measured at NAV Practical Expedient	<u>\$398,949,377</u>		

Investments Measured at Fair Value

as of June 30, 2018

	Fair Value at June 30, 2018	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
U.S. Equities				
Consumer Spending	\$3,724,252	\$3,724,252	\$ -	\$ -
Energy and Industrials	4,310,976	4,310,976	-	-
Information Technology	2,984,606	2,984,606	-	-
Financials	5,492,680	5,492,680	-	-
Health Care	2,926,269	2,926,269	-	-
Other	2,169,494	2,169,494	-	-
Total U.S. Equities	21,608,277	21,608,277	-	-
U.S. Fixed Income				
Corporate Bonds	16,858,870	13,008,597	3,850,273	-
Mortgage-Backed Securities	5,247,224	-	5,247,224	-
U.S. Treasury Obligations	5,150,304	5,150,304	-	-
Total U.S. Fixed Income	27,256,398	18,158,901	9,097,497	-
Global Fixed Income	8,280,449	3,863,684	4,416,766	-
Opportunistic Fixed Income	24,730,981	-	-	24,730,981
Real Estate Investment Trusts and Funds	9,229,162	5,868,869	-	3,360,293
Hedge Funds	31,263,701	-	-	31,263,701
Private Debt	45,537,178	-	-	45,537,178
Private Equity	21,293,255	-	-	21,293,255
Total Investments Measured at Fair Value Levels	189,199,401	<u>\$49,499,731</u>	<u>\$13,514,262</u>	<u>\$126,185,408</u>
Investments Measured at NAV Practical Expedient				
U.S. Equities	117,809,466			
International Equities	104,730,927			
Global Fixed Income	90,192,793			
Real Estate Investment Trusts and Funds	26,729,343			
Hedge Funds	46,729,101			
Total Investments Measured at NAV	<u>386,191,630</u>			
Total Investments at Fair Value	<u>\$575,391,031</u>			

Investments Measured at NAV Practical Expedient	Fair Value June 30, 2018	Redemption Frequency	Required Redemption Notice
U.S. Equities	\$117,809,466	Daily	3 - 5 days
International Equities	104,730,927	Daily	1 - 30 days
Global Fixed Income	90,192,793	Daily	1 - 10 days
Real Estate Investment Trusts and Funds	26,729,343	Quarterly	45 Days
Hedge Funds	46,729,101	Daily, Quarterly	1 - 95 days
Total Investments Measured at NAV Practical Expedient	<u>\$386,191,630</u>		

Level 1 investments are valued at active market quoted prices. Level 2 fixed income investments are valued using a pricing model that utilizes observed market inputs in determining the fair value as well as matrix yield curves. Level 3 investments are valued by market assumptions that are based on unobservable inputs. Fair value measurements for investments valued using the net asset value practical expedient (NAV practical expedient) are excluded from the fair value hierarchy in accordance with GASB No. 72.

U.S. Equities — Shares held in common stock and mutual funds are classified in Level 1 of the fair value hierarchy and valued using price quotes on active markets for those securities. Units held in commingled funds are valued using the NAV practical expedient of the commingled fund as reported by the investment managers. The NAV practical expedient is based on the fair value of the underlying assets owned by the fund, minus its liabilities, and then divided by the number of units outstanding.

International Equities — Include units in commingled funds that hold investments in securities of international issuers and emerging markets. Units held in these funds are valued using the NAV practical expedient as reported by the investment managers.

U.S. Fixed Income — Domestic fixed income securities include investments in corporate bonds, U.S. Treasury obligations, mortgage-backed securities issued by federal agencies and collateralized mortgage obligations, and mutual funds with underlying investments in fixed income securities. Investments in corporate bonds, mutual funds, and U.S. Treasury obligations are classified in Level 1 of the fair value hierarchy and valued using prices quoted on active markets for those securities.

Investments in mortgage-backed securities and other fixed income investments are valued using pricing models maximizing the use of observable inputs for similar securities which includes basing value on yields currently available on comparable securities of issuers with similar credit ratings and are classified in Level 2 of the fair value hierarchy.

Global Fixed Income — Global fixed income securities include mutual funds invested in fixed income securities of international issuers, mutual funds and commingled trusts invested in global fixed income securities. Investment managers have the ability to invest in a variety of industry spaces, such as government and corporate bonds, and across a multitude of countries, both developed and emerging markets. Investments in corporate bonds and mutual funds are classified in Level 1 of the fair value hierarchy and valued using prices quoted on active markets for those securities. Units held in commingled funds are valued using the NAV practical expedient of the commingled fund as reported by the investment managers.

Real Estate Investment Trusts and Funds — This category includes investments in real estate investment trusts (REITs) and real estate funds that invest in residential, office, retail, and industrial real estate or debt related to real estate acquisitions. Investments in REITs are classified in Level 1 of the fair value hierarchy and valued using prices quoted on active markets for those securities. Units held in real estate funds are valued using the NAV practical expedient of the commingled fund as reported by the investment managers. Real estate funds that are not valued at NAV practical expedient include significant unobservable inputs and are classified in Level 3 of the fair value hierarchy.

Hedge Funds — This category consists of investments in hedge fund-of-funds and direct investments. Investment managers in the fund-of-funds category have the ability to invest in underlying managers that focus on a variety of different strategies such as long/short, event-driven, leveraging, and other derivative instruments. The System's direct hedge fund managers focus on a global macro approach. Units held in investments valued using the NAV practical expedient are excluded from the fair value hierarchy and reported at the NAV provided by the investment managers. Investments in limited partnerships that are not valued at NAV are classified in Level 3 of the fair value hierarchy.

Private Debt and Private Equity — Private debt include investments in limited partnerships and portfolios focused on direct, distressed or mezzanine lending as governed by their respective investment agreements. Private equity includes limited partnerships and portfolios focused on small buyouts, secondary acquisitions, distressed companies, or sector focused investments. Investments in private debt and private equity represent partnership interests and capital investments valued as limited partnership ownership interests based on investment statements and other information provided by each investment manager. Investments in private debt and private equity are classified in Level 3 of the fair value hierarchy.

Opportunistic Fixed Income — Opportunistic fixed income includes investments in comingled funds primarily focused on fixed income securities. The funds can hold U.S. and international equities, U.S. and international corporate bonds, U.S. government bonds, and derivative contracts. The managers transact in these markets at opportune times to generate growth. Investments in the opportunistic fixed income funds represent partnership or membership interests and capital investments and are valued as limited partnership or membership ownership interests based on investment statements and other information provided by each investment manager. Opportunistic fixed income funds are classified in Level 3 of the fair value hierarchy.

4. Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligation to the

Credit Quality Fixed Income Securities

As of June 30, 2019 and 2018

Investment Type	Credit Rating Level	2019	2018
U.S. Fixed Income			
Corporate Bonds	AAA	\$ 79,362	\$ 119,671
	AA+:AA-	137,828	170,339
	A+:A-	1,042,175	1,189,590
	BBB+:BBB-	7,349,562	6,564,469
	BB+:BB-	129,014	127,810
	NR	126,836	118,896
		<u>8,864,777</u>	<u>8,290,775</u>
Mortgage Backed	AAA	523,693	1,064,965
	AA+:AA-	395,507	244,419
	B+:B-	225,360	201,185
	CCC	59,317	67,920
	NR	1,281,081	1,120,050
		<u>2,484,958</u>	<u>2,698,539</u>
U.S. Treasuries	NR	10,261,631	10,397,528
Other	NR	6,076,466	5,869,556
Total U.S. Fixed Income		\$27,687,832	\$27,256,398
Global Fixed Income			
Corporate Bonds	A+:A-	\$ 820,720	\$ 678,560
	BBB+:BBB-	1,222,508	817,939
	BB+:BB-	254,298	115,943
	NR	-	123,995
		<u>2,297,526</u>	<u>1,736,437</u>
Asset Backed	AAA	249,889	251,035
Comingled Funds	NR	101,203,962	96,485,770
Total Global Fixed Income		\$103,751,377	\$98,473,242
Opportunistic Fixed Income	NR	\$25,485,292	\$24,730,981
Total Fixed Income		\$156,924,501	\$150,460,621

RRS uses ratings from Standard & Poor's for the preparation of this chart.

RRS. The RRS has an investment policy for credit risk. The U.S. fixed income investments should emphasize high-quality and reasonable diversification. The investment managers are responsible for making an independent analysis of the credit worthiness of securities and their suitability as investments regardless of the classifications provided by rating agencies.

The RRS's fixed income portfolio credit quality and exposure levels as of June 30, 2019 and 2018 are summarized in the tables above.

Concentration of Credit Risk

This is the risk of loss that may be attributed to the magnitude of a government's investment in a single issue. There is no concentration of investments in any one issuer that represents 5% or more of plan net position available for benefits.

Custodial Credit Risk

This is the risk that in the event of the failure of the counterparty, the RRS will not be able to recover the value of its investment or collateral securities that are in the possession of an outside party.

The RRS does not have exposure to custodial credit risk because the cash collateral received in each loan was invested together with the cash collateral of other qualified tax-exempt plan lenders in a collective investment pool.

5. Interest Rate Risk

Interest rate risk is the risk that changes in interest rates will adversely affect the fair value of an investment. The RRS does not have a specific investment policy governing interest rate risk. The Effective Maturities of Fixed Income Securities by Investment Type tables below show the RRS's interest rate exposure at June 30, 2019 and 2018.

Effective Maturities of Fixed Income Securities by Investment Type as of June 30, 2019

Investment Type	Total Fair Value	1-5	5-10	10-30	>30
U.S. Fixed Income					
Corporate	\$8,864,776	\$1,679,717	\$4,234,588	\$2,950,471	\$ -
Mortgage Backed	2,484,959	-	-	2,484,959	-
U.S. Treasuries	10,261,631	3,520,741	658,443	2,219,351	3,863,096
Other	6,076,466	4,807,062	127,504	703,045	438,855
Total U.S Fixed Income	\$27,687,832	\$10,007,520	\$5,020,535	\$8,357,826	\$4,301,951
Global Fixed Income					
Corporate Bonds	\$ 2,297,525	\$ 1,022,813	\$ 681,680	\$ 593,032	-
Asset Backed	249,889	249,889	-	-	-
Commingled Funds	101,203,963	101,203,963	-	-	-
Total Global Fixed Income	\$103,751,377	\$102,476,665	\$681,680	\$593,032	\$ -
Opportunistic Fixed Income	\$25,485,292	\$25,485,292	\$ -	\$ -	\$ -
Total Fixed Income	\$156,924,501	\$137,969,477	\$5,702,215	\$8,950,858	\$4,301,951

Effective Maturities of Fixed Income Securities by Investment Type as of June 30, 2018

Investment Type	Total Fair Value	1-5	5-10	10-30	>30
U.S. Fixed Income					
Corporate	\$8,290,775	\$1,456,449	\$3,966,645	\$2,867,681	\$ -
Mortgage Backed	2,698,539	-	-	2,649,215	49,324
U.S. Treasuries	10,397,528	3,655,565	1,011,557	2,248,579	3,481,827
Other	5,869,556	4,717,822	-	656,779	494,955
Total U.S Fixed Income	\$27,256,398	\$9,829,836	\$4,978,202	\$8,422,254	\$4,026,106
Global Fixed Income					
Corporate Bonds	\$ 1,736,437	\$ 427,726	\$ 698,892	\$ 487,601	\$ 122,218
Asset Backed	251,035	251,035	-	-	-
Commingled Funds	96,485,770	96,485,770	-	-	-
Total Global Fixed Income	\$98,473,242	\$97,164,531	\$698,892	\$487,601	\$122,218
Opportunistic Fixed Income	\$24,730,981	\$24,730,981	\$ -	\$ -	\$ -
Total Fixed Income	\$150,460,621	\$131,725,348	\$5,677,094	\$8,909,855	\$4,148,324

6. Foreign Currency Risk

Foreign currency risk is the risk that changes in exchange rates will adversely affect the fair value of an investment. The System invests in mutual funds, commingled funds, pooled funds, and has separately managed portfolios that invest in foreign securities; at June 30, 2019 and 2018, the total fair value of these investments were \$205 and \$199 million, respectively.

At June 30, 2019 and 2018, the RRS had \$3.1 million and \$3.0 million of foreign currency holdings in its portfolio, respectively. The Board monitors foreign currency risk in accordance with the RRS investment policy.

III. Litigation

The RRS, including its Board of Trustees, officers and employees, is not involved in any ongoing claims or lawsuits that would have an adverse effect on the RRS's financial condition.

IV. Plan Description

The RRS was established by action of the Richmond City Council on February 1, 1945. The City Council appoints five members and the Mayor appoints two members of the Board of Trustees to administer the RRS. However, City Council retains the authority to establish or amend benefit provisions. The RRS is not subject to the provisions of the Employee Retirement Income Security Act of 1974.

The RRS is single-employer Defined Benefit Plan. The RRS has one participating employer, the City of Richmond, including its component unit Richmond Behavioral Health Authority. The plan covers all full-time permanent sworn public safety employees and a select group of Senior Executives as outlined in Chapter 22 of the City of Richmond Municipal Code. The plan is closed to general employees, hired on or after July 1, 2006. Members are vested after five years of creditable service or at their normal retirement age (age 65 for general employees; age 60 for public safety employees). The plan is contributory for employees. The following table demonstrates the changes in retirees and beneficiaries during the fiscal years ended June 30, 2019 and 2018.

Plan Membership

	For the Fiscal Year ended:		Increase/ (Decrease)	Percent Change
	2019	2018		
Active Vested DB Plan Members	1,448	1,522	(74)	-4.9%
Active Non-vested DB Plan Members	283	259	24	9.3%
Terminated Vested DB Plan Members	1,567	1,603	(36)	-2.2%
Retirees & Beneficiaries	<u>4,300</u>	<u>4,318</u>	<u>(18)</u>	<u>-0.4%</u>
Total:	<u>7,598</u>	<u>7,702</u>	<u>(104)</u>	<u>-1.4%</u>

A) Summary of Benefit and Contribution Provisions

Outlined on the following pages is a summary of the main provisions of the plan, set by Chapter 22 of the Code of the City of Richmond.

1. Definitions:

Average Final Compensation

The average annual creditable compensation of a member during the member's 36 consecutive months of creditable service in which such compensation was at its greatest amount or during the entire period of the member's creditable service, if less than three years.

Creditable Compensation

The base compensation payable to an eligible employee working in a full-time position, plus shift differentials, bonuses, severance pay and educational incentive pay but excluding overtime pay, imputed income under Section 79 of the Internal Revenue Service Code, and lump-sum payments for unused sick or vacation leave.

Creditable Service

Total service as an employee, whether or not continuous, but excluding any separate periods of service less than nine months in duration and any periods of leave without pay unless otherwise required by law. Effective July 1, 1999, 50% of unused sick leave counts as creditable service at retirement for current employees. Vested members who terminated City employment between July 1,

1998 and June 30, 1999 received 25% of unused sick leave as creditable service.

2. Retirement Plan Options:

a) Defined Benefit

The Defined Benefit Plan pays a monthly benefit at retirement based on the member's years of creditable service and average final compensation. General and public safety employees are required to pay contributions of 1.0% and 1.5% respectively, of their creditable compensation.

b) Enhanced Defined Benefit

The Enhanced Defined Benefit Plan option pays a monthly benefit at retirement based on the member's years of creditable service and average final compensation. This plan is optional for public safety officers and senior executives.

General employees are required to make contributions of 4.57% of their creditable compensation, and public safety employees are required to make contributions of 5.45% of their creditable compensation, until they terminate employment or retire in order to receive the benefits of the enhanced option. For public safety employees, the enhanced option allows eligibility for an unreduced early service retirement upon the completion of twenty (20) years of creditable service, regardless of age.

The benefit levels for both options is set by the formulas, regardless of the fund's investment performance. Participating entities contribute an amount each year that varies according to calculations by the actuary. The participating entities' contributions are invested by outside investment firms with the primary objective of ensuring the security, stability, and continued growth of assets for members' future benefits. The Code of the City of Richmond requires that the Plan be maintained on an actuarially sound basis.

3. Deferred Retirement Option Program (DROP):

Effective October 1, 2003, the DROP was implemented for public safety employees eligible for an unreduced retirement allowance. Effective July 1, 2015, eligible members may elect to participate for a maximum of six years, deferring receipt of unreduced retirement benefits while continuing employment with the City.

Upon a member's election to participate in the DROP, the amount of creditable service and the average final compensation become frozen for purposes of determining pension benefits. The participant is considered retired for all purposes related to the System and does not accrue additional retirement benefits, except for cost-of-living adjustments, if applicable.

Each DROP participant's monthly pension is tracked by an individual DROP account in lieu of being paid to the participant. Upon termination of employment, the participant will receive the DROP account balance and will begin receiving the monthly pension directly. The DROP account is not credited with investment gains and losses.

As of June 30, 2019 and 2018, the DROP liability was \$11,482,670 and \$10,688,523, respectively.

4. Retirement Eligibility:

A member is eligible for normal retirement upon attaining their normal retirement date (general employees, age 65; public safety employees, age 60). Early retirement is permitted at any time within the ten-year period prior to the normal retirement date, provided the member has completed five or more years of creditable service, any age with 30 years of creditable service (general employees), 25 years of creditable service (public safety employees participating in defined benefit plan), or 20 years of creditable service (public safety employees participating in the enhanced defined benefit plan option).

5. Retirement Allowance:

Upon retirement, a member becomes eligible to receive an annual allowance, payable in equal monthly installments. The annual allowance is computed as follows:

a) Normal Retirement Allowance:

General Employees: 1.75% (2% Enhanced option) of the member's average final compensation, multiplied by the number of years of creditable service up to 35 years.

Public Safety Employees: 1.65% of the member's average final compensation, multiplied by the number of years of creditable service up to 35 years. In addition, a supplement of .75% of the member's average final compensation, multiplied by the number of years of creditable service up to 25 years is payable from retirement until age 65.

b) Early Retirement Allowance:

If a member retires prior to their normal retirement age, the allowance is determined as follows: for general employees, the benefit is reduced by five-twelfths of 1% for each complete month by which retirement precedes the earlier of age 65 or the date on which the employee would have completed 30 years of service had the member remained employed. For public safety employees, the benefit is reduced by five-twelfths of 1% for each complete month by which retirement precedes either age 60 or the date on which the employee would have completed 25 years of service had the member remained in service in the Defined Benefit Plan (or 20 years of service had the member remained in service in the Enhanced Defined Benefit Plan), whichever is earlier.

c) Workers' Compensation Offset:

In no instance may a member who receives both (a) a compensation award pursuant to the Virginia Workers' Compensation Act, and (b) a retirement allowance before the attainment of age 65 from the RRS, receive a benefit which would cause the sum of the Workers' Compensation award and retirement allowance to exceed the member's average final compensation at the time the member separated from active service. After attainment of age 65, the member shall be entitled to the full retirement allowance.

If a member in receipt of a retirement allowance elects to receive a lump-sum settlement in lieu of periodic payments for disability under the Virginia Workers' Compensation Act, the member's service retirement allowance shall continue to be reduced in the same amount required by Section 22-202(5) for the number of months equivalent to the lump-sum award amount divided by the amount of the original Workers' Compensation award.

6. Retirement Benefit Payment Options:

The member may elect, with the approval of the Board, one of the following options, in which case the amount payable is the actuarial equivalent of the Basic Benefit otherwise payable.

a) Joint and Survivor Option:

A reduced allowance is payable to the member during their lifetime; with the same amount or a designated

fraction thereof continued after the member's death to a designated contingent beneficiary, if living.

b) Pop-Up Joint and Survivor Option:

A reduced allowance is payable to the member during their lifetime; with the same amount or a designated fraction thereof continued after the member's death to a designated contingent beneficiary, if living. If the designated contingent beneficiary predeceases the member, the allowance is increased to the amount that would have been payable in the absence of the election of an optional form of benefit.

c) Smooth-Out Option:

An increased retirement allowance is paid prior to age 65 and a decreased retirement allowance thereafter. The purpose of this option is to provide for a more level total retirement income before and after age 65, taking into account the primary federal Social Security benefits.

d) Level Option:

A reduced allowance is paid level for the lifetime of the member. This option is available to current public safety employees and to former vested general employees who terminated service prior to March 1, 1997.

7. Disability Retirement Eligibility:

Any member in service who has five or more years of creditable service may retire, or may be retired by the member's appointing authority, at any time prior to the member's normal retirement date on account of permanent disability, provided that the medical examiners certify that the member has been completely incapacitated by reason of sickness or injury from performing the duties required by the participating employer, and provided further that if the disability is service connected (i.e., if it arises from a cause that would be compensable under the Virginia Workers' Compensation Act), the five-year service requirement does not apply. The service requirement is also waived for public safety employees if the disability arises from respiratory or heart disease or from hypertension, unless it is certified that such disability was not suffered in the line of duty.

8. Disability Retirement Allowance:

a) Non-Service Connected Disability

The annual allowance, payable monthly, is computed in

the same way as a normal retirement allowance prior to the changes effective March 1, 1997, with the following modifications: “Disability Average Compensation” is used in place of Average Final Compensation. In essence, this is the annual rate of compensation in effect at the date of disability, graded into average final compensation for members who become disabled within three years of their normal retirement date. Creditable Service is replaced by “Disability Credited Service,” which is the smaller of: i. The number of years of creditable service the member would have completed at age 60 if the member had remained in service until that time, or ii. The larger of: a. 20 years, or b. twice the member’s actual years of creditable service except that if the disability occurs after age 60, disability credited service is equal to the number of years of creditable service. A deduction for Social Security is made prior to age 65 if the member is entitled to total and permanent disability benefits under Social Security. The early service reduction factor of five-twelfths of 1% per month early retirement reduction is not imposed. The additional pre-age 65 allowance for public safety employees is not payable.

In no instance may a member who receives a compensation award pursuant to the Virginia Workers’ Compensation Act and a non-service connected disability retirement allowance from the City receive a benefit which would cause the sum of the disability retirement allowance and Workers’ Compensation award to exceed the member’s average final compensation at the time the non-service connected disability caused separation from active service.

b) Service Connected Disability

The annual allowance payable monthly, is computed in the same way as a normal retirement allowance prior to the changes effective March 1, 1997, with the following modifications: The disability retirement allowance is computed as two-thirds of the member’s disability average compensation. This allowance shall be reduced dollar for dollar by the amount of compensation, if any, awarded to the member under the Virginia Workers’ Compensation Act for as long as such compensation is payable. If any member who retired on or after July 1, 1989, elects to receive a lump-sum settlement in lieu of periodic payments for disability under the Virginia Workers’ Compensation Act, the member’s retirement allowance shall continue to be reduced in the same

amount and for the number of months equivalent to the lump-sum award divided by the amount of the original Workers’ Compensation award. A deduction for Social Security is made prior to age 65 if the member is entitled to total and permanent disability benefits under Social Security. The early service reduction factor of five-twelfths of 1% per month early retirement reduction is not imposed. The additional pre-age 65 allowance for public safety employees is not payable.

9. Death Benefits Before Retirement:

If a member who became an employee of the participating employer on or before June 13, 1988 and has one or more years of creditable service dies before retirement, a death benefit is payable equal to \$16.67 multiplied by the number of months of creditable service of the member, subject to a maximum of \$1,000.

If a member who is eligible for an early or normal retirement dies prior to actual retirement and no benefit of the type described in the paragraph below is payable, the surviving spouse is entitled to receive an allowance for life equal to that amount which would have been paid if the full Joint and Survivor Option had been in effect at the time of the member’s death. The additional allowance paid from retirement to age 65 to public safety employees is not included in this benefit.

If a member dies at any time before retirement from a cause that would be compensable under the Virginia Workers’ Compensation Act, an allowance is payable to the surviving spouse or to the member’s children under the age of 18 equal to that which would have been payable if the full Joint and Survivor Option had been in effect at the time of the member’s death. The allowance is calculated by projecting creditable service to that which the member would have earned had they remained in service until age 65 with the same final average compensation in effect at the time of their death. The benefit is reduced by any compensation awarded under the Virginia Worker’s Compensation Act.

10. Death Benefits after Retirement:

The beneficiary of a retired member with at least one year of creditable service will receive, at the member's death, a death benefit of \$16.67 multiplied by the number of months of creditable service of the member, subject to a maximum of \$1,000.

An allowance for life, as described in the preceding paragraphs, is also payable to the widow or widower of a member who retired for disability after attaining early retirement age but dies before reaching normal retirement age. In this case, the member's average final compensation as of the disability retirement date is used, but it is assumed the member's service continued to the last day of the month in which the member died.

11. Ad Hoc Cost-of-Living Allowances (COLA):

Ad hoc COLAs are issued at the discretion of City Council.

12. Benefits for City Officials and Department Heads:

Effective March 1, 1997, certain City of Richmond officials and department heads can make additional contributions to the RRS in order to receive two years of credit for each year of service in a covered position (up to a maximum of 15 additional years).

V. Contributions Required and Contributions Made

For fiscal years ended June 30, 2019 and 2018, the Entry Age Actuarial Cost Method was used in determining employer contribution rates, calculated by the RRS actuary. The annual contribution percentages include amortization of the unfunded actuarial liability. The employer contribution rates calculated for fiscal year ended June 30, 2019 were 41.02% for sworn public safety officers and 50.03% for general employees. The employer contributions rates calculated for fiscal year ending June 30, 2018 were 40.56% for sworn public safety officers and 46.51% for general employees.

The City Code requires that contributions to the RRS consist of a normal contribution plus an accrued liability contribution, which, combined, equal the actuarially determined contribution.

Contributions totaling \$50,475,517, including \$1,935,870 in member contributions, were made from July 1, 2018 to June 30, 2019 in accordance with the actuarially determined contribution requirements stated above. Contributions made during the fiscal year ended June 30, 2018 were \$48,511,853, including \$1,962,951 in member contributions.

Funding Policy

The Richmond City Code of 1993, as amended, requires the City to contribute to the RRS, annually, an amount as determined by the actuary equal to the sum of the "normal contribution" and the "actuarial liability contribution."

The actuarial liability contribution is the amount necessary to amortize the unfunded actuarial liability and any increase or decrease in the unfunded actuarial liability in future years due to changes in actuarial assumptions, changes in RRS provisions, including the granting of ad hoc COLA increases, or actuarial gains or losses amortized over a closed period not to exceed 30 years.

Net Pension Liability

The components of the Employer's net pension liability at June 30, 2019 and 2018 were as follows:

	2019	2018
Total Pension Liability	\$938,077,477	\$874,789,363
Plan Fiduciary Net Position	(572,635,105)	(569,085,310)
Net Pension Liability	<u>\$365,442,372</u>	<u>\$305,704,053</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (Funded Status)	61.0%	65.1%

Actuarial Assumptions

The actuarial method used to determine the net pension liability was the Entry Age Actuarial Cost Method.

As a result of the completion of an experience study for the five years ended June 30, 2018, the Board adopted changes in actuarial assumptions and methods. For the purposes of determining net pension liability, fair value of investments was used. Significant actuarial assumptions used in determining the actuarial liability include: (a) a 7.0% and 7.5% investment rate of return for 2019 and 2018, respectively, (b) projected salary increases of

2.5% to 4.0% for general employees and 4.5% to 6.5% for police and fire employees, (c) the assumption that benefits will not increase after retirement.

Long-Term Expected Rate of Return

The long-term expected rate of return on RRS investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of geometric return for each major asset class included in the pension plan's target asset allocation as of June 30, 2019 are summarized in the table on below.

Asset Class	June 30, 2019 10 Year Assumptions Geometric Return
Large Cap Equities	7.00%
SMID Cap Equities	7.25%
Developed Intl Equities	7.00%
Emerging Intl Equities	7.25%
Hedge Funds	5.50%
Private Equity	8.50%
Global Multi-Sector Fixed Income	3.75%
Opportunistic Fixed Income	3.75%
Private Debt	6.50%
Real Estate (core)	6.25%
Cash	2.50%

Annual Money-Weighted Rate of Return

For the fiscal years ended June 30, 2019 and 2018, the annual money-weighted rates of return were 5.1% and 7.1%, respectively. Annual money-weighted rate of return is calculated net of all investment management expenses and additional plan investment related expenses that are reported by the plan's custodian or were provided to the Investment Consultant by the RRS. The methodology used to determine the money weighted rate of return is different from the calculation of the fiscal year rate of return. Cash flows have a larger impact on the money-weighted rate of return than the fiscal year rate of return, which uses a time-weighted calculation.

Discount Rate

The discount rate used to measure the total pension liability was 7.0% and 7.5% as of June 30, 2019 and June 30, 2018, respectively. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that the City, and its component unit, contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

The following presents the net pension liability along with the funded status of the system, calculated using the current discount rate of 7.0%, as well as using a discount rate that is one percentage point lower (6.0%) and one percentage point higher (8.0%) than the current rate:

	1% Decrease (6.00%)	Current Discount Rate (7.00%)	1% Increase (8.00%)
Net Pension Liability	\$454,508,389	\$365,442,372	\$288,683,899
Funded Status	55.8%	61.0%	66.5%



Richmond skyline at sunrise

Required Supplementary Information

Financial Section, continued

In this section:

- Schedule of Changes in the Employers' Net Pension Liability and Related Ratios
- Schedule of Employers' Contributions
- Notes to the Schedules
- Schedule of Investment Returns

Schedule of Changes in the Employers' Net Pension Liability and Related Ratios*

Total Pension Liability	2019	2018	2017	2016	2015	2014
Service cost	\$10,690,477	\$10,306,295	\$10,254,351	\$10,452,587	\$9,471,988	\$10,648,531
Interest	63,004,086	62,230,250	61,563,762	61,275,821	61,557,532	62,395,219
Changes of Benefit Terms	-	-	-	-	-	8,705,940
Differences Between Expected and Actual Experience	(1,116,866)	8,033,833	6,602,613	1,284,630	(6,133,948)	1,651,751
Changes of Assumptions	61,459,185	-	-	-	-	(26,784,600)
Benefit Payments, Including Refunds of Member Contributions	(70,748,768)	(69,773,981)	(69,302,957)	(69,049,286)	(68,268,268)	(67,320,865)
Net Change in Total Pension Liability	63,288,114	10,796,397	9,117,769	3,963,752	(3,372,696)	(10,704,024)
Total Pension Liability – Beginning	874,789,363	863,992,966	854,875,197	850,911,445	854,284,141	864,988,165
Total Pension Liability – Ending (a)	<u>\$938,077,477</u>	<u>\$874,789,363</u>	<u>\$863,992,966</u>	<u>\$854,875,197</u>	<u>\$850,911,445</u>	<u>\$854,284,141</u>

Plan Fiduciary Net Position

Contributions – Employer	\$48,539,647	\$46,548,902	\$42,911,076	\$44,926,043	\$46,684,500	\$42,342,620
Contributions – Member	1,935,870	1,962,951	2,150,631	1,976,022	2,347,163	2,118,493
Net Investment Income	25,100,251	38,843,025	62,841,319	(1,498,570)	15,641,333	76,463,285
Benefit Payments, Including Refunds of Member Contributions	(70,748,768)	(69,773,981)	(69,302,957)	(69,049,286)	(68,268,268)	(67,320,865)
Administrative Expense	(1,277,205)	(1,208,148)	(1,141,301)	(1,161,281)	(1,248,162)	(1,318,016)
Other	-	-	-	-	-	-
Net Change in Plan Fiduciary Net Position	\$3,549,795	\$16,372,749	\$37,458,768	\$(24,807,072)	\$(4,843,434)	\$52,285,517
Plan Fiduciary Net Position – Beginning	569,085,310	552,712,561	515,253,793	540,060,865	544,904,299	492,618,782
Plan Fiduciary Net Position – Ending (b)	<u>\$572,635,105</u>	<u>\$569,085,310</u>	<u>\$552,712,561</u>	<u>\$515,253,793</u>	<u>\$540,060,865</u>	<u>\$544,904,299</u>
Employer's Net Pension Liability – Ending (a) - (b)	\$365,442,372	\$305,704,053	\$311,280,405	\$339,621,404	\$310,850,580	\$309,379,842
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	61.0%	65.1%	64.0%	60.3%	63.5%	63.8%
Covered Payroll	\$108,326,347	\$107,814,490	\$107,363,266	\$108,015,367	\$111,738,352	\$110,748,076
Employer's Net Pension Liability as a Percentage of Covered Payroll	337.4%	283.5%	289.9%	314.4%	278.2%	279.4%

*See Notes to the Schedules on page 38.

*This schedule will display ten years of data as the information becomes available.

Schedule of Employers' Contributions*

	2019	2018	2017	2016	2015	2014
Actuarially Determined Contribution	\$46,539,647	\$46,548,902	\$42,911,076	\$44,926,043	\$46,684,500	\$42,342,620
Contributions in Relation to the Actuarially Determined Contribution	48,539,647	46,548,902	42,911,076	44,926,043	46,684,500	42,342,620
Contribution Deficiency (Excess)	<u>\$(2,000,000)</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Covered Payroll	\$108,326,347	\$107,814,490	\$107,363,266	\$108,015,367	\$111,738,352	\$110,748,076
Contributions as a Percentage of Covered Payroll	44.81%	43.17%	39.97%	41.59%	41.78%	38.23%

*This schedule will display ten years of data as the information becomes available.

Notes to the Schedules

Valuation Date

Actuarially determined contribution rates are calculated as of July 1, two years prior to the end of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates

	2019
Actuarial Cost Method	Entry Age Normal
Amortization Period	Level percent of pay over a closed period not to exceed 30 years for police and fire employees; level dollar amount over a closed period not to exceed 30 years for general members.
Remaining Amortization Period	Re-amortize unfunded liability over 12 years as of July 1, 2019.
Asset Valuation Method	Five-year spread of actual over expected investment earnings with the restriction that the resulting value must be within 90%-110% of market value.
Inflation	2.50%
Salary Increases – General Employees	2.50% to 4.00%
Salary Increases – Police and Fire Employees	4.50% to 6.50% for FY 2019, 2.50% to 4.50% in future years.
Investment Rate of Return	7.00%
Retirement Age – General Employees	20% in 1st year of unreduced retirement eligibility; 10% at age 55 increasing to 100% at age 75
Retirement Age – Police and Fire Employees	25% in 1st year of unreduced retirement eligibility; 10% at age 50 increasing to 100% at age 65
Mortality – General Employees	Pub-2010 Below Median Income Table for General Employees
Mortality – Police and Fire Employees	Pub-2010 Below Median Income Table for Safety Employees

Schedule of Investment Returns*

	2019	2018	2017	2016	2015	2014
Annual Money-Weighted Rate of Return, Net of Investment Expense	5.1%	7.1%	12.2%	-0.3%	2.4%	15.5%

**Annual money-weighted rate of return is calculated net of all investment management expenses and additional plan investment related expenses that are reported by the plan's custodian or were provided to Callan by the RRS. The methodology used to determine the money weighted rate of return is different from the calculation of the fiscal year rate of return (which was 4.2% net of fees). Cash flows have a larger impact on the money-weighted rate of return than the fiscal year rate of return, which uses a time-weighted calculation.*

**This schedule will display ten years of data as the information becomes available.*



Virginia Museum of Fine Arts

Supporting Schedules

Financial Section, continued

In this section:

- Schedule of Administrative Expenses
- Schedule of Investment Expenses
- Schedule of Payments to Investment Consultant
- Schedule of Retirement Benefits

Schedule of Administrative Expenses

Year Ended June 30, 2019

Personnel Services	
Salaries and wages	\$678,938
Social Security and Medicare	34,460
Retirement contributions	125,808
Group life and health insurance	90,232
Total Personnel Services	929,438
Professional Services	
Actuarial	87,036
Legal services	14,015
Auditing and accounting services	49,200
Business services	6,254
Medical examiners	454
Total Professional Services	156,959
	3,113
Communications	
Other	
Board/staff development and travel	46,946
Technology	5,314
Supplies	8,459
Dues and membership	8,075
Depreciation	60,082
Total Other	128,876
Total Administrative Expenses before Allocation to Information Technology	1,218,386
Allocation to Information Technology	58,819
Total Administrative and Depreciation Expenses	\$1,277,205

Schedule of Investment Expenses

Year Ended June 30, 2019

Investment Managers:

LSV Asset Management	\$124,600
Stone Harbor Investment Partners	81,189
CenterSquare Investment Management	30,877

Commingled Funds:

Acadian Asset Management	517,157
JP Morgan Asset Management	274,350
Loomis, Sayles & Co. (Credit Opportunistic)	199,260
Brandywine Global Investment Management, LLC	176,711
Fidelity Investments	197,260
State Street Global Advisors	23,529
Coller	<u>55,789</u>

Total Investment Managers Expenses* \$1,680,722

Investment Custodian

State Street Corporation \$259,727

**Mutual fund, commingled trust, and limited partnership fees are not reflected in this schedule; instead, these investment expenses are netted against investment income in the Statement of Changes in Fiduciary Net Position to arrive at a net investment income amount.*

Schedule of Payments to Investment Consultant

Year Ended June 30, 2019

Investment Consultant:

NEPC	\$102,084
Callan	<u>191,000</u>
Total Investment Consultant Expenses*	<u><u>\$293,084</u></u>

During the fiscal year ended June 30, 2019, the RRS did not direct any soft dollar transactions.

Schedule of Retirement Benefits

Year Ended June 30, 2019

Benefit Payments:

Regular Pension	\$60,043,441
Disability Pension	3,930,140
Survivor Pension	2,155,914
Death Benefits	124,228
DROP Expense	<u>4,291,043</u>
Total Benefits	<u><u>\$70,544,766</u></u>



Virginia War Memorial

Investment Section

The Investment Section provides detailed information regarding the performance of the investment pool. This information includes asset allocation, investment management fees and expenses, and an investment summary.

In this section:

- Investment Consultant Report
- Investment Policy Summary
- Schedules of Investment Results
- Asset Allocation
- Schedule of Investments
- Schedule of Fees
- Investment Summary

Investment Consultant Report

Callan

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August 30, 2019

Board of Trustees

Richmond Retirement System

730 East Broad Street

Suite 900

Richmond, VA 23219

RE: Fiscal Year End 2019

Dear Trustees,

Callan LLC is pleased to present the Richmond Retirement System's ("RRS") investment results for fiscal year-end June 30, 2019. As of fiscal year-end, the RRS's investment market value totaled \$588.6 million, an increase of approximately \$6.5 million since June 30, 2018. This increase includes approximately \$24.4 million in net withdrawals.

Total Fund Objectives

The RRS investment program's objective is to provide plan participants with retirement benefits. This is accomplished by the implementation of a carefully planned and executed long-term investment program. The Board of Trustees ("Board"), with input provided by an Investment Advisory Committee ("IAC"), has exclusive control of all retirement system investments and is responsible for establishing investment objectives, strategies, and policies.

The Board is charged with the responsibility of investing RRS' assets to provide for the benefits of the members of the System. To achieve that goal, the Board follows a policy of preserving capital, while seeking means of enhancing revenues and protecting against undue losses in any particular investment area. The Board diversifies the investment of the assets among classes of securities to reduce risk while maximizing the long-range return.

Fiscal Year 2019 Market Review

During the fiscal year, the U.S. economy continued its now-record expansion. The Federal Reserve shifted to a relatively new policy objective — to "sustain the expansion" — and U.S. Treasury and stock markets rejoiced in tandem. In the U.S. the Bloomberg Barclays Aggregate Bond Index rose 7.9% for the 12-month period. U.S. Treasury yields hit multi-year lows in June, and the 10-year closed June 30th at 2.0% (the lowest since 11/2016). U.S. equity markets approached record levels as investors were heartened by the potential for imminent Fed rate cuts. Growth sectors fueled the advance with select names in the information technology sector seeing significant increases. While the

continued on next page

S&P 500 Index rose 10.4%, small cap stocks, as represented by the Russell 2000 Index, were plagued by the fear of slowing global growth, fell by -3.3%. Non-U.S. markets trailed the U.S. equity market but were able to eke out small positive returns. The MSCI EAFE Index and MSCI Emerging Markets Index rose 1.1% and 1.2%, respectively. Private real estate as measured by the NCREIF Property Index returned 6.5%.

Total Fund Rates of Return

For the fiscal-year-ending June 30, 2019, the RRS Total Fund returned 4.2% on a net-of-fee basis underperforming the policy benchmark return of 6.7% by 251 basis points. Over the trailing three-year period, the RRS Total Fund trailed the policy benchmark by 45 basis points net-of-fees with an annualized return of 7.9%, and by 56 basis points over the trailing five-year period with an annualized net-of-fee return of 5.2%. For the trailing ten-years, the RRS Total Fund returned 9.1% on a net-of-fee basis lagging the policy benchmark return of 9.3% by 27 basis points.

Investment Policy

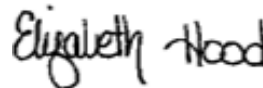
The RRS Total Fund continues to evolve through an ongoing review of the asset allocation and asset class components. During the fiscal year 2019, the System conducted a search for a new investment advisor and engaged Callan LLC as its new investment consultant on November 1st. Upon hire, Callan completed an asset-liability study resulting in the Board's adoption of a new asset allocation mix that is predominately weighted to public and private equity and debt as well as alternative assets like real estate. The goal of the new asset allocation structure is to enhance return and seek greater diversification benefits. Furthermore, within fiscal year 2020 the Board plans to implement the new asset allocation policy, conduct asset class investment manager structure evaluations, conduct investment manager searches for both traditional and alternative asset classes, and revise the Plan's Investment Policy Statement.

The performance returns for the Richmond Retirement System presented in this report have been calculated by Callan using custodial bank statements. The performance is calculated using a time-weighted rate of return methodology based upon the market value of assets.

Kind regards,



Brian Smith, CFA



Elizabeth Hood, CFA

Investment Policy Summary

Introduction

The Board is responsible for the overall management of the assets of the fund. The Trustees approve the Investment Policy Statement (IPS) and provide overall direction in executing the policy. The Trustees review investment results in relationship to investment expectations and actuarial assumptions and experience to determine if future changes are needed to either the IPS or the implementation of the IPS.

Purpose of the IPS

The purpose of the IPS is to assist the Board in effectively supervising, monitoring, and evaluating the investment of the fund assets. The IPS:

1. Makes a clear distinction between the responsibilities of the Board and the service providers hired to help implement the Fund's Investment Policy — the investment consultant, the investment managers, and the bank custodian/trustee.
2. Describes the Fund's risk tolerance, as defined by the asset classes that are considered allowable investments and the percentage allocations to each asset class.
3. Sets forth the criteria to be placed on diversification of portfolio investments.
4. Describes the investment practices that apply to the individual portfolios managed by each of the investment managers.
5. Provides rate-of-return objectives and criteria to monitor and evaluate the performance results achieved by the investment managers.
6. Establishes effective communication procedures between the Board and the investment managers, investment consultant, and bank custodian/trustee.
7. Creates a formal review process for reviewing this Investment Policy Statement.

Objectives

The assets are invested to meet the following objectives:

1. To ensure funds are available to meet current and future obligations of the plan when due.
2. To earn an investment return greater than the actuarial return assumption over time.
3. To assure the Fund's fiscal health.

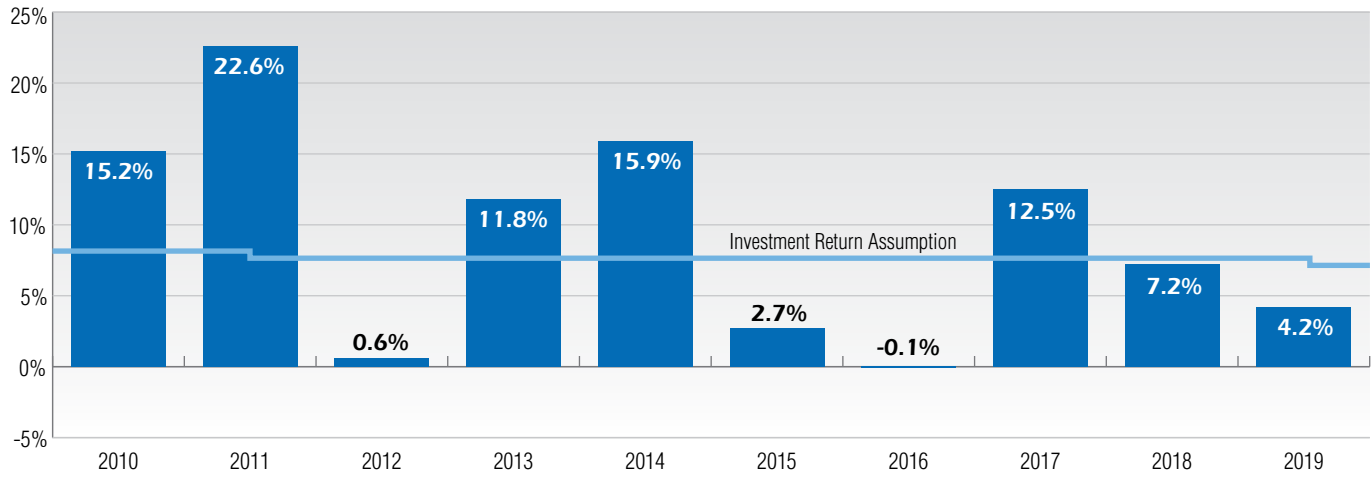
Time Horizon

For purposes of planning, the time horizon for investments is long-term. Capital values fluctuate over shorter periods and the Board recognizes that the possibility of capital loss does exist. The Board has adopted a long-term investment horizon in order to carefully weigh the probability of investment loss against the long-term potential for investment gains. Fund assets will be invested in a prudent manner to ensure diversification of investment risks and opportunities.

For a copy of the Investment Policy Statement, please contact the Richmond Retirement System at 730 East Broad Street, Suite 900, Richmond, VA 23219.

Schedules of Investment Results

Fiscal Year Returns (Net of Fees)



*Effective July 1, 2011 the investment return assumption was changed to 7.5% (from 8%)
Effective June 30, 2019, the investment return assumption was lowered again from 7.5% to 7.0%.*



James River Park Pipeline Walkway

Investment Performance* (Net of Fees)

One, Three, Five & Ten Years Ending June 30, 2019

	1 Year	3 Years	5 Years	10 Years
Total Fund				
RRS	4.2%	7.9%	5.2%	9.1%
RRS Custom Benchmark ¹	6.7%	8.4%	5.7%	9.3%
Total U.S. Equity				
RRS	7.6%	12.8%	9.1%	13.8%
RRS Custom Benchmark ²	9.0%	14.0%	10.2%	14.7%
Total International Equity				
RRS	-3.2%	9.9%	2.9%	6.9%
RRS Custom Benchmark ³	1.3%	9.4%	2.2%	6.5%
Total Fixed Income				
RRS	6.1%	4.0%	2.8%	6.0%
RRS Custom Benchmark ^{3,4}	8.1%	2.8%	3.2%	4.4%
Total Hedge Funds				
RRS	2.7%	4.0%	2.0%	3.6%
RRS Custom Benchmark ⁵	1.1%	4.3%	2.2%	3.2%
Total Real Estate				
RRS	3.9%	6.1%	8.1%	n/a
RRS Custom Benchmark ⁶	6.4%	7.6%	9.8%	n/a
Total Private Equity				
RRS	6.1%	14.1%	12.1%	n/a
RRS Custom Benchmark ⁷	12.6%	14.7%	12.3%	n/a
Total Private Debt				
RRS	6.0%	8.3%	7.7%	n/a
RRS Custom Benchmark ⁸	4.2%	5.4%	3.9%	n/a

Benchmarks:

¹ The RRS Custom Benchmark is a blend of the Asset Class Benchmarks at policy weights.

² The U.S. Equity Benchmark is the Russell 3000 Index.

³ The International Equity Benchmark is the MSCI ACWI ex U.S. Index.

⁴ The Fixed Income Benchmark is the Bloomberg Barclays Capital Universal Index.

⁵ The Hedge Funds Benchmark is the HFRI Fund of Funds Composite Index.

⁶ The Real Estate Benchmark is the NCREIF ODCE Index.

⁷ The Private Equity Benchmark is the Cambridge Associates U.S. All Private Equity Index lagged by three months.

⁸ The Private Debt Benchmark is the Credit Suisse Leveraged Loan Index lagged by three months.

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

Asset Allocation

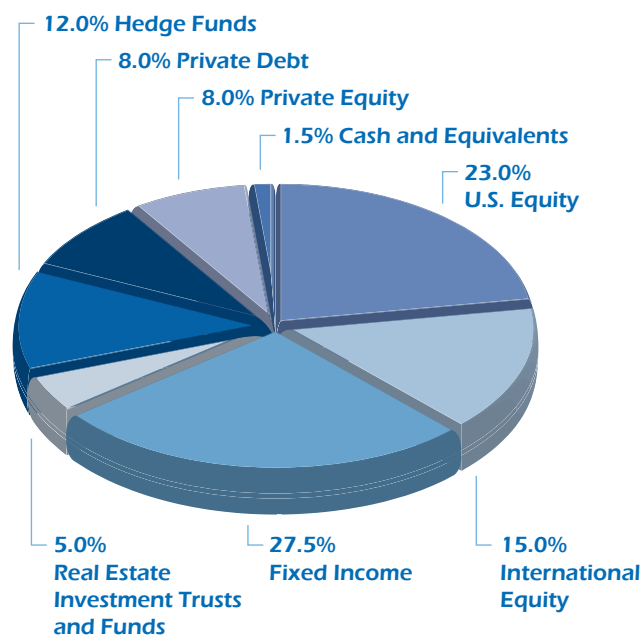
As of June 30, 2019

Asset Class	Target Allocation	Actual Allocation*
U.S. Equity		
Large Cap Passive U.S. Equities	13.00%	15.74%
Large Cap U.S. Value	5.00%	3.84%
SMID Cap Growth U.S. Equities	5.00%	5.66%
Total	23.00%	25.24%
International Equity		
Developed International Equities	8.00%	12.30%
Emerging International Equities	7.00%	4.88%
Total	15.00%	17.18%
Total Fixed Income	27.50%	26.73%
Alternatives		
Hedge Funds	12.00%	12.94%
Private Equity	8.00%	3.94%
Private Debt	8.00%	6.40%
Real Estate Investment Trusts and Funds	5.00%	6.02%
Total	33.00%	29.30%
Total Cash and Equivalents	1.50%	1.55%
Total	100.00%	100.00%

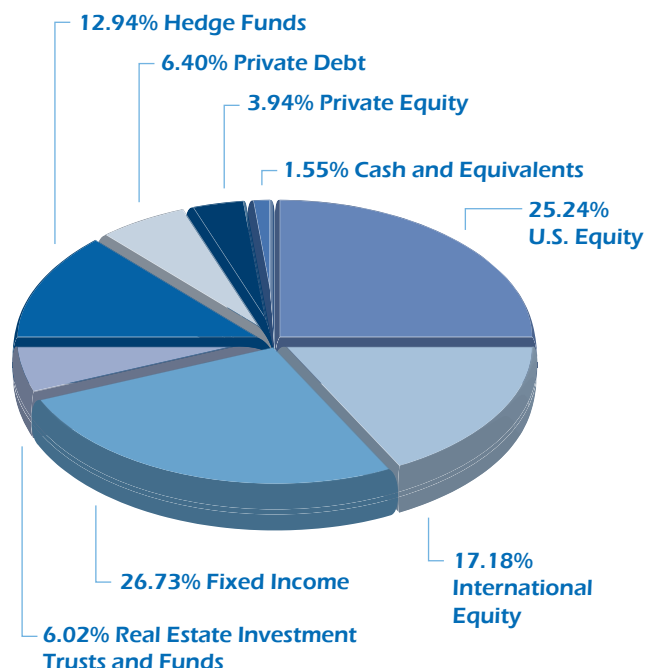
*Actual allocation based upon fair market value presented in the Statement of Fiduciary Net Position.

*May not add to 100% due to rounding.

Target Allocation



Actual Allocation



Schedule of Investments

Ten Largest Equity Holdings at June 30, 2019

Description	Share/Par	Fair Value
Pfizer, Incorporated	15,600	\$675,792
JP Morgan Chase & Company	5,900	659,620
Citigroup Incorporated	8,800	616,264
Bank of America Corporation	20,400	591,600
Verizon Communications, Incorporated	10,100	577,013
Intel Corporation	11,400	545,718
Exelon Corporation	8,900	426,666
Chevron Corporation	3,100	385,764
Amgen, Incorporated	2,000	368,560
Johnson & Johnson	2,600	362,128
Total Ten Largest Equity Holdings		\$5,209,125

Fair Value of Cash, Investment Payables & Receivables, and Investments, June 30, 2019 **\$584,532,459**

Percentage of Ten Largest Equity Holdings **0.89%**

A complete listing of the holdings at June 30, 2019 is available from the RRS's executive office.

Ten Largest Fixed Income Holdings at June 30, 2019

Description	Share/Par	Fair Value
Fannie Mae Mortgage Pass-Through 3.5% due 15 Jul 2049	1,350,000	\$1,380,213
U.S Treasury Notes 2% due 15 Nov 2021	1,300,000	1,308,476
Fannie Mae Mortgage Pass-Through 4% due 15 Jul 2049	1,050,000	1,085,217
Fannie Mae Mortgage Pass-Through 3% due 15 Jul 2049	1,075,000	1,084,181
U.S Treasury Notes 1.125% due 28 Feb 2021	1,000,000	988,710
U.S Treasury Notes 1.625% due 15 Feb 2026	550,000	541,965
U.S Treasury Notes 1.5% due 15 April 2020	425,000	423,241
U.S Treasury Notes 1.875% due 31 Mar 2022	400,000	401,764
U.S Treasury Notes 2.375% due 31 Jan 2023	375,000	383,378
U.S Treasury Notes 3% due 15 Nov 2045	350,000	383,033
Total Ten Largest Fixed Income Holdings		\$7,980,178

Fair Value of Cash, Investment Payables & Receivables, and Investments, June 30, 2019 **\$584,532,459**

Percentage of Ten Largest Fixed Income Holdings **1.37%**

A complete listing of the holdings at June 30, 2019 is available from the RRS's executive office.

**Schedule does not include equity and fixed income securities held by mutual funds and commingled trusts.*

Schedule of Fees

For Fiscal Year Ending June 30, 2019

	Assets Under Management	Related Fees*
Investment Manager's Strategy		
U.S. Equities	\$148,159,251	\$279,164
Global Fixed Income	103,751,377	259,604
International Equities	100,842,560	511,985
Hedge Funds	75,944,723	-
Real Estate Investment Trusts and Funds	35,364,309	301,359
U.S. Fixed Income	27,687,832	116,677
Private Debt	37,559,835	-
Opportunistic Fixed Income	25,485,292	187,105
Private Equity	<u>23,070,051</u>	<u>-</u>
Total Long-Term Investments	<u>577,865,230</u>	<u>1,655,895</u>
Cash and Cash Equivalents	<u>9,123,297</u>	<u>24,827</u>
Total Investments	<u>586,988,527</u>	<u>1,680,722</u>
Net Cash Collateral from Securities Lending	2,165,902	-
Investment Payables	(10,112,135)	-
Investment Receivables	5,484,925	-
Other Receivables	<u>5,240</u>	<u>-</u>
Total	<u>\$584,532,459</u>	<u>\$1,680,722</u>
Other Investment Service Fees		
Consultant		\$293,084
Custodian		259,727
Securities Lending Agent		4,254
Other		<u>24,000</u>
Total Investment Service Fees		<u>\$2,261,788</u>

*Mutual fund and limited partnership fees are not reflected in this schedule; instead, these investment expenses are netted against investment income in the Statement of Changes in Plan Net Position to arrive at a net investment income amount.

*The RRS paid commissions of \$10,928 to 29 separate brokers during the fiscal year. Barclays Capital, Inc. received 51% of the commissions.

Investment Summary

	Fair Value	% of Total Fair Value
<i>As of June 30, 2019</i>		
Equities		
<i>U.S. Equities</i>		
Information Technology	\$2,850,666	0.49%
Consumer	3,216,573	0.55%
Financial	5,623,434	0.96%
Healthcare	2,598,298	0.44%
Industrials	2,386,744	0.41%
Energy	1,508,063	0.26%
Utilities	737,727	0.13%
Telecommunications	1,248,434	0.21%
Materials	1,418,594	0.24%
Other/Commingled Funds	<u>126,570,718</u>	<u>21.56%</u>
Total U.S. Equities	148,159,251	25.24%
International Equities	<u>100,842,560</u>	<u>17.18%</u>
Total Equities	249,001,811	42.42%
Fixed Income		
<i>U.S. Fixed Income</i>		
Corporate Bonds	8,864,776	1.51%
Mortgage Pass-Through	5,502,412	0.94%
U.S Treasury	4,759,219	0.81%
CMO	2,484,959	0.42%
Asset Backed	1,269,404	0.22%
Other	<u>4,807,062</u>	<u>0.82%</u>
Total U.S. Fixed Income	27,687,832	4.72%
Global Fixed Income	103,751,377	17.68%
Opportunistic Fixed Income	<u>25,485,292</u>	<u>4.34%</u>
Total Fixed Income	156,924,501	26.73%
Other Investments		
Hedge Funds	75,944,723	12.94%
Real Estate and Related Debt	35,364,309	6.02%
Private Debt	37,559,835	6.40%
Private Equity	<u>23,070,051</u>	<u>3.93%</u>
Total Other Investments	171,938,918	29.29%
Total Investments	577,865,230	98.45%
Short-Term Investments		
Cash and Cash Equivalents	<u>9,123,297</u>	<u>1.55%</u>
Total Investments and Cash Equivalents	\$586,988,527	100.00%

*May not add to 100% due to rounding.



The Valentine Museum



The Fan Neighborhood

Actuarial Section

The Actuarial Section presents information relating to the funded status of the pension plan. Additionally, this section provides detailed information about actuarial assumptions, includes retirement trend data, and summarized provisions and changes.

In this section:

- Actuary's Report
- Actuarial Assumptions and Methods
- Schedule of Active Members Valuation Data
- Schedule of Beneficiaries Added to and Removed from Rolls
- Analysis of Financial Experience

Actuary's Report



4510 Cox Road, Suite 200
Glen Allen, VA 23060
sageviewadvisory.com

September 26, 2019

Board of Trustees
The Richmond Retirement System
Richmond, Virginia

Ladies and Gentlemen:

Actuarial valuations of the Richmond Retirement System are performed annually. The results of the latest actuarial valuation of the System, which was prepared as of July 1, 2019, are summarized in this letter.

The valuation reflects the benefits in effect on the valuation date, and was prepared on the basis of the data submitted by the City using generally accepted actuarial principles and methods.

The Financing Objective and City's Contribution Rate

The financing objective of the System is to:

- (a) Fully fund all current costs based on the normal contribution rate payable by the City determined under the funding method; and
- (b) Liquidate the unfunded actuarial liability based on actuarial liability contributions payable by the City over an amortization period of no more than 30 years, with contributions increasing 3% per year for Police/Fire employees and level contributions for General employees.

The July 1, 2019 valuation develops contribution rates for the fiscal year ending June 30, 2021. These contribution rates, which are based on the estimated covered payroll as of July 1, 2019, are as follows:

	General Employees	Police & Fire	Total
Bi-Weekly	61.67%	38.40%	48.01%

The above rates will be adjusted as follows:

- (a) To reflect the actual budgeted payroll for the fiscal year ending June 30, 2021 if it is materially different than the estimated covered payroll on which they are based, and
- (b) To reflect the impact of the 2019 Voluntary Retirement Incentive Program (VRIP) once member elections are received.

continued on next page



The contribution rates and amounts displayed above, once adjusted, are sufficient to support the benefits of the System and administrative expenses and achieve the financing objective set forth above.

Net Pension Liability

Under GASB 67, the Net Pension Liability is the excess, if any, of the Total Pension Liability over the Fiduciary Net Position. The Total Pension Liability is determined under the Entry Age actuarial cost method. The Net Pension Liability as of June 30, 2019 and June 30, 2018 is as follows:

	June 30, 2019	June 30, 2018
Total Pension Liability	\$938,077,477	\$874,789,363
Fiduciary Net Position	\$572,635,105	\$569,085,310
Net Pension Liability	\$365,442,372	\$305,704,053
Fiduciary Net Position as a Percentage of Total Pension Liability	61.0%	65.1%

Legislative and Administrative Changes

There was an ordinance adopted that provided for a Voluntary Retirement Incentive Program (VRIP) which allows eligible members to receive additional benefits effective November 1, 2019 if they elect to participate. The impact of the VRIP will be reflected in the Net Pension Liability as of June 30, 2020.

Actuarial Assumptions and Methods

Actuarial assumptions are adopted by the Board, upon review of recommendations made by the actuary. An experience study was conducted for the five-year period ended June 30, 2018. This study resulted in the Board adopting several changes in assumptions, at the recommendation of the actuary, in order to better anticipate emerging experience. Included in the changes was an update to the mortality tables used to the Pub-2010 Below-Median Income tables for both General and Public Safety plan participants. Additionally, the Board reviewed the investment return assumption and voted to lower the assumption from 7.5% to 7.0%. These changes in assumptions resulted in a net increase in actuarial liability of \$61,459,185.

The unfunded actuarial liability as of July 1, 2019 is being amortized over a period of 12 years; with contributions increasing 3% per year for Police & Fire employees and level contributions for General employees.

For purposes of determining contribution rates, the difference between actual investment earnings and expected investment earnings is recognized over a five-year period, with the restriction that the actuarial asset value cannot be less than 90% or more than 110% of market value. This smoothing method is utilized in order to smooth the impact of short term market fluctuations on the System’s contribution rates and funded status. For purposes of financial reporting beginning with the fiscal year ended June 30, 2014, assets are reported at fair market value.

continued on next page



Samples of the actuarial assumptions and descriptions of the actuarial cost method and asset valuation method are set forth in the outline of actuarial assumptions and methods included in the report.

System Assets and Participant Data

The individual data for members of the System as of the valuation date were reported to the actuary by the City. While we did not verify the data at their source, we did perform tests for internal consistency and reasonableness in comparison with the data submitted for the previous valuation. It is our understanding that the independent auditor of the System has also made an examination of the data.

The value of assets in the trust fund taken into account in the valuation was based on statements prepared for us by the Retirement System Staff which will be audited by the independent auditor of the System. Assets have been reduced by the value of DROP accounts as those accounts are recognized as benefits payable from the System.

Financial Results and Membership Data

Detailed summaries of the financial results of the valuation and membership data used in preparing the valuation are shown in the valuation report and the related membership data schedules. We were responsible for providing information for all schedules included in the Actuarial Section as well as certain schedules included in other sections of the consolidated annual financial report for the fiscal year ended June 30, 2018. These schedules include the Schedule of Active Members Valuation Data, Schedule of Beneficiaries Added to and Removed from Rolls, and the Reasons for Change in Contribution Rates.

Defined Contribution Plan

The City also sponsors a 401(a) Defined Contribution Plan for General employees hired on or after July 1, 2006 and other employees who have elected to participate in that plan in lieu of the Richmond Retirement System's defined benefit plan. We have prepared an analysis of the Defined Contribution Plan with respect to Virginia Code Title 51.1-800 and believe it is in compliance.

Funding Adequacy

The results of the valuation indicate the rate of contribution payable by the City, when taken together with the current assets of the System including member contributions, is adequate to fund the actuarial liabilities on account of all benefits payable under the System in accordance with generally accepted actuarial principles utilizing the assumptions and methods adopted by the Board.

To the best of our knowledge, this report is complete and accurate and the System is being operated on an actuarially sound basis. All costs and liabilities have been determined in conformance with generally accepted actuarial principles

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and on the basis of actuarial assumptions and methods which are each individually reasonable taking into account past experience and reasonable expectations of future experience. The assumptions and methods used for funding purposes meet the parameters set by the Actuarial Standards of Practice.

Future liability and asset values may differ from the results shown in this report for many reasons including, but not limited to, actual experience differing from assumed experience, changes in actuarial assumptions or methods, plan amendments, regulatory changes or changes in contribution strategy. An impact analysis of such potential changes is not included in this report. Potential plan risks are discussed in Table 15 in compliance with ASOP 51.

The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained in this report. We are not aware of any direct or material indirect financial interest or relationship, including investments or other services, that could create a conflict of interest or that would impair the objectivity of our work.

We appreciate the opportunity to be of service to the Richmond Retirement System and are available to answer questions regarding this report or to provide further details as may be requested.

Respectfully submitted,

SageView Consulting Group

Handwritten signature of William M. Dowd in black ink.

William M. Dowd, FCA, EA
Managing Principal

Handwritten signature of William J. Reid in black ink.

William J. Reid, FCA, EA
Principal

Actuarial Assumptions and Methods

Actuarial Cost Method

For fiscal year ended June 30, 2019 the actuarial cost method used to determine the actuarial liability and the normal cost is the Entry Age Actuarial Cost Method.

The accrued liability and the normal cost are used to determine the City of Richmond's contribution requirement. The July 1, 2017 valuation developed contribution rates for the fiscal year ending June 30, 2019 using the Entry Age Actuarial Cost Method.

The investment return assumption of 7% was adopted for the year ended June 30, 2019. Other actuarial assumptions and methods are as follows:

Actuarial Assumptions

Interest

7.0% per annum, compounded annually; adopted July 1, 2019.

Mortality

Active Lives and Service Retirements

General Employees:
Pub-2010 Below-Median Income Mortality Table for General Employees

Police and Fire Employees:
Pub-2010 Below-Median Income Mortality Table for Public Safety Employees

Disabled Lives

General Employees:
Pub-2010 Below-Median Income Mortality Table for Disabled General Employees

Police and Fire Employees:
Pub-2010 Below-Median Income Mortality Table for Disabled Public Safety Employees

Turnover

General Employees:
An attained age table with the following typical rates:

Age	Rate
25	-
35	0.0950
45	0.0550
55	0.0300
60	0.0100

Police and Fire Employees:
An attained age table with the following typical rates:

Age	Rate
25	0.0794
35	0.0434
45	0.0096
55	0.0015
60	-

Retirement

General Employees:
A select and ultimate table with the following typical rates; 20% for the first year in which the employee is eligible for unreduced immediate retirement benefits, and:

Age	Rate
55-56	0.100
57	0.080
58-60	0.060
61	0.120
62-64	0.150
65	0.250
66	0.300
67-69	0.200
70	0.400
71-73	0.300
74	0.500
75	1.000

Police and Fire Employees:

A select and ultimate table with the following typical rates; 25% for the first year in which the employee is eligible for unreduced immediate retirement benefits, and:

Age	Rate
50	0.100
51-53	0.080
54-55	0.120
56	0.090
57	0.150
58	0.200
59	0.300
60	0.400
61-63	0.500
64	0.750
65	1.000

Disability**General Employees:**

An attained age table with the following typical rates:

Age	Rate
25	-
35	0.000100
45	0.001500
55	0.008500
60	0.014200

Police and Fire Employees:

An attained age table with the following typical rates:

Age	Rate
25	0.000100
35	0.000200
45	0.001000
55	0.001300

Duty Disability**General Employees:**

An attained age table with the following typical rates:

Age	Rate
25	0.000017
35	0.000017
45	0.000059
55	0.000252

Police and Fire Employees:

An attained age table with the following typical rates:

Age	Rate
25	0.000035
35	0.000047
45	0.000170
55	0.000746

Salary Increases**General Employees:**

An attained age table with the following typical rates:

Age	Rate
25	0.04000
35	0.04000
45	0.03500
55	0.03000
60	0.02500

Police and Fire Employees:

An attained age table with the following typical rates:

Age	Rate
25	0.04500
35	0.03500
45	0.03000
55	0.02500
60	0.02500

Cost-of-Living Adjustments

None assumed.

Asset Valuation Basis

For purposes of determining contribution rates, five-year spread of the difference between actual investment earnings and assumed investment earnings at 7% was used. The resulting actuarial asset value cannot be less than 90% or greater than 110% of market value.

*The Schedule of Funding Status on page 19 presents the funding progress for each of the ten most recent years based on actuarial methods and assumptions used for funding purposes.

*See the Schedule of Changes in the Employers' Net Pension Liability and Related Ratios on page 37.

Schedule of Active Members Valuation Data

General Defined Benefit Plan Members *(Dollars in Thousands)*

Valuation Date	Members	Annual Payroll	Average Salary	Percent Increase (Decrease)
6/30/19	738	\$44,286	\$60	1.1
6/30/18	800	\$47,493	\$59	3.3
6/30/17	873	\$50,169	\$57	1.5
6/30/16	941	53,267	57	1.6
6/30/15	1,014	56,518	56	4.5
6/30/14	1,075	57,323	53	3.4
6/30/13	1,256	64,794	52	0.2
6/30/12	1,375	70,773	51	1.6
6/30/11	1,510	76,521	51	1.1
6/30/10	1,644	82,411	50	1

Police and Fire Defined Benefit Plan Members *(Dollars in Thousands)*

Valuation Date	Members	Annual Payroll	Average Salary	Percent Increase (Decrease)
6/30/19	993	\$62,902	63	3.0
6/30/18	981	\$60,321	61	5.9
6/30/17	985	\$57,195	58	2.9
6/30/16	970	54,749	56	2.7
6/30/15	1005	55,220	55	1.8
6/30/14	990	53,425	54	0.2
6/30/13	963	51,872	54	-2.3
6/30/12	985	54,287	55	0
6/30/11	988	54,450	55	-2.7
6/30/10	972	55,062	57	-1.4

Defined Contribution 401(a) Plan Members *(Dollars in Thousands)*

Valuation Date	Members	Annual Payroll	Average Salary	Percent Increase (Decrease)
6/30/19	2,297	\$119,416	\$52	0.9
6/30/18	2,179	\$112,220	52	1.5
6/30/17	2,051	\$104,053	51	1.3
6/30/16	1,938	97,097	50	0.2
6/30/15	1,890	94,457	50	3.4
6/30/14	1,865	90,102	48	0
6/30/13	1,765	85,235	48	2.7
6/30/12	1,735	81,603	47	-1.2
6/30/11	1,656	78,861	48	1.2
6/30/10	1,632	76,819	47	1.4

Schedule of Beneficiaries Added to and Removed from Rolls

(Dollars in Thousands)

Ended	Added	Annual Allowances Added	Removed	Annual Allowances Removed	Total	Annual Allowances	% Change	Average Annual Allowances	Retirees as a Percent of Active Members	
									Number	Pay
6/30/19	157	\$3,008	175	\$2,544	4,300	\$70,519	0.7%	\$16	248.4%	65.8%
6/30/18	161	\$3,332	140	\$2,400	4,318	\$70,055	1.3%	\$16	242.4%	65.0%
6/30/17	128	\$2,268	153	\$2,179	4,297	\$69,123	0.1%	\$16	231.3%	64.4%
6/30/16	153	\$2,272	145	\$1,596	4,322	\$69,034	1.0%	\$16	226.2%	63.9%
6/30/15	163	\$1,667	161	\$1,517	4,314	\$68,358	0.2%	\$16	213.7%	61.2%
6/30/14	285	\$5,087	143	\$1,654	4,312	\$68,208	5.3%	\$16	208.8%	61.6%
6/30/13	182	\$1,917	143	\$1,483	4,170	\$64,775	0.7%	\$16	187.9%	55.5%
6/30/12	206	2885	153	\$1,630	4,131	64341	2.0%	\$16	175.0%	51.4%
6/30/11	217	\$4,038	136	\$1,462	4,078	\$63,086	4.3%	\$15	163.3%	48.2%
6/30/10	205	\$3,580	171	\$1,581	3,997	\$60,511	3.4%	\$15	152.8%	44.0%



Inside the State Capitol Building

Analysis of Financial Experience

Reasons for Change in the Net Pension Liability

The net pension liability was \$365,442,372 as of June 30, 2019. The increase from the prior year was primarily due to a change in assumptions after performing an experience study and actual investment return on the value of assets being less than the expected return.

Reasons for Change in the Funded Status

The funded status decreased from 65.1% as of June 30, 2018 to 61.0% as of June 30, 2019. The decrease from the prior year was primarily due to a change in assumptions after performing an experience study and actual investment return on the value of assets being less than the expected return.

Information for plan provisions regarding benefits can be found in Note IV beginning on page 30. Additionally, the assumptions methods used in the actuarial valuation can be found in Note V beginning on page 34 and in the required supplementary information. Actuarial

assumptions used for funding purposes are the same as those used for financial purposes.

Reasons for Change in Contribution Rates

The overall employer contribution rate, as of the beginning of the year, increased from 40.29% for the fiscal year ending June 30, 2018 to 41.51% for the fiscal year ending June 30, 2019. The increase of 1.22% is due to the following reasons:

Contribution Rate Fiscal Year Ended 2018	40.29%
Decrease due to investment loss on actuarial value of assets:	-0.28%
Decrease/Increase due to changes in assumptions:	0.00%
Decrease/Increase due to changes in methods:	0.00%
Decrease/Increase due to changes in benefit provisions:	0.00%
Increase due to reduction in covered payroll	1.17%
Increase due to other experience factors:	0.33%
Total:	1.22%
Contribution Rate Fiscal Year Ended 2019	41.51%



Richmond's Canal Walk

Statistical Section

The Statistical Section presents detailed historical information regarding the pension plan administered by the RRS. This information includes a ten-year overview of changes in net position, plan membership, contributions, plan additions and deductions, benefits and refunds. Included in this analysis is statistical information regarding retirees.

In this section:

- Schedule of Changes and Growth in Net Position
- Schedule of Retirees and Beneficiaries
- Schedule of Participating Employer and Component Unit (Current Year and Ten Years Ago)
- Schedule of Average Benefit Payments
- Schedule of Membership

Schedule of Changes and Growth in Net Position

Pension Trust Fund *(Dollars in Thousands)*

For the year ended June 30

	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010
Net Position Available — Beginning of Year	\$569,085	\$552,713	\$515,254	\$540,061	\$544,904	\$492,619	\$461,761	\$489,987	\$417,669	\$386,358
Additions										
Employer Contributions	48,540	46,549	42,911	44,926	46,537	42,295	40,402	38,884	39,718	32,079
Member Contributions	1,936	1,963	2,151	1,976	2,347	2,118	2,093	2,217	2,421	2,486
Investment Income (Loss)	25,100	38,843	62,841	(1,498)	15,641	76,463	54,219	1,896	93,770	59,128
Total Additions	75,576	87,355	107,903	45,404	64,525	120,876	96,714	42,997	135,909	93,693
Deductions										
Benefit Payments	70,545	69,707	69,186	68,846	68,140	67,274	64,673	70,037	62,392	61,222
Refunds	204	68	117	203	128	47	102	49	81	118
Administrative/Depreciation Expenses	1,277	1,208	1,141	1,162	1,100	1,270	1,081	1,135	1,117	1,043
Total Deductions	72,026	70,983	70,444	70,211	69,368	68,591	65,856	71,221	63,590	62,383
Change in Net Position	3,550	16,372	37,459	(24,807)	(4,843)	52,285	30,858	(28,225)	72,318	31,310
Net Position Available — End of Year	\$572,635	\$569,085	\$552,713	\$515,254	\$540,061	\$544,904	\$492,619	\$461,761	\$489,987	\$417,669

Schedule of Retirees and Beneficiaries June 30, 2019

Amount of Monthly Benefit	Number of Retirees	Type of Retirement ¹							Option Selected ²					
		A	B	C	D	E	F	G	Life	1	2	3	4	5
\$1-\$100	356	-	20	325	10	1	-	-	314	15	2	6	0	19
\$101-\$200	359	4	33	311	5	1	1	4	292	25	3	2	2	35
\$201-\$300	247	14	49	165	7	1	9	2	194	13	1	5	2	32
\$301-\$400	230	7	79	118	9	-	10	7	160	15	1	3	2	49
\$401-\$500	180	15	63	75	3	4	18	2	130	10	0	1	0	39
\$501-\$600	174	13	69	63	9	6	12	2	115	2	1	7	2	47
\$601-\$700	151	13	69	49	7	1	10	2	100	5	0	4	2	40
\$701-\$800	132	16	66	27	7	1	14	1	76	3	1	2	1	49
\$801-\$900	132	13	70	21	11	6	9	2	76	5	1	2	2	46
\$901-\$1000	130	17	71	22	1	5	11	3	69	3	0	2	4	52
Over \$1000	2,209	347	1,603	62	41	86	69	1	1,478	135	50	100	97	349
Total	4,300	459	2,192	1,238	110	112	163	26	3,004	231	60	134	114	757

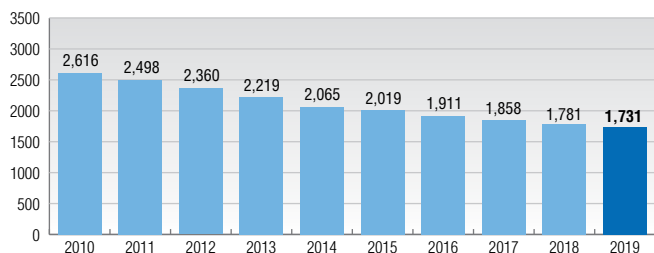
¹Types of Retirement

- A Normal Retirement* — A general employee age 65 or a sworn public safety officer age 60 or older.
- B Early Service* — A general employee at least age 55, with five years of creditable service, or a sworn public safety officer at least age 50, with five years of creditable service.
- C Deferred Service* — A former vested general employee age 65 or older or a former vested sworn public safety officer age 60 or older.
Deferred Early Service — A former vested general employee at least age 55 but less than age 65 or a sworn public safety officers at least age 50 but less than age 60.
- D Beneficiary (normal, early, deferred retirement)* — Surviving beneficiary of a deceased retiree who is receiving a retirement allowance payable monthly for life.
- E Compensable Disability* — An employee who retires from active service due to a job-related disability.
- F Ordinary Disability* — A vested employee who retires from active service due to a non-job-related disability.
- G Beneficiary (disability)* — Beneficiary of a deceased disability retiree who is receiving a retirement allowance payable monthly for life.

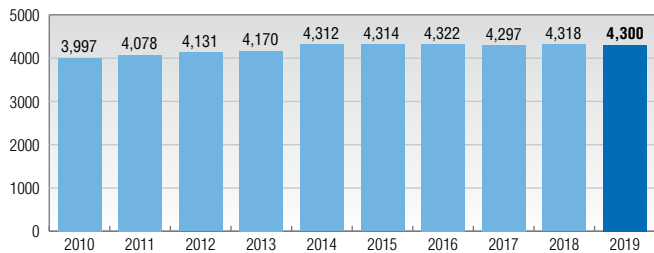
²Option Selected

- LIFE* — Basic Benefit
- Option 1* — 100% Joint and Survivor Benefit
- Option 2* — 75% Joint and Survivor Benefit
- Option 3* — 50% Joint and Survivor Benefit
- Option 4* — 25% Joint and Survivor Benefit
- Option 5* — Social Security (Smooth-Out)

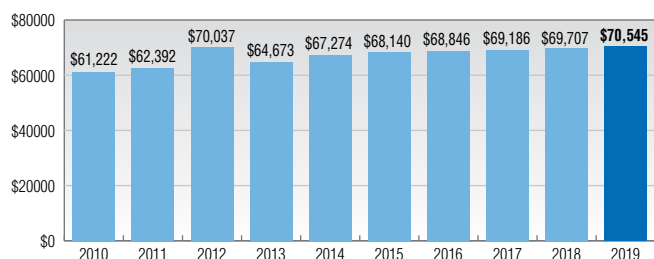
Number of Active Defined Benefit Plan Members



Number of Retirees and Beneficiaries



Retirement Benefits (Dollars in Thousands)



Schedule of Participating Employer and Component Unit Current Year and Ten Years Ago

Participating Employer and Component Unit	2019		2009	
	Covered Employees	Percentage of Total System	Covered Employees	Percentage of Total System
City of Richmond	1,706	98.6%	2,706	97.3%
Richmond Behavioral Health Authority	25	1.4%	76	2.7%
Total	1,731	100.0%	2,782	100.00%

Benefit Payment Options:

Basic Benefit

This form of payment provides a monthly benefit for life. However, when member dies, all benefits stop. There are no monthly payments to a beneficiary after death.

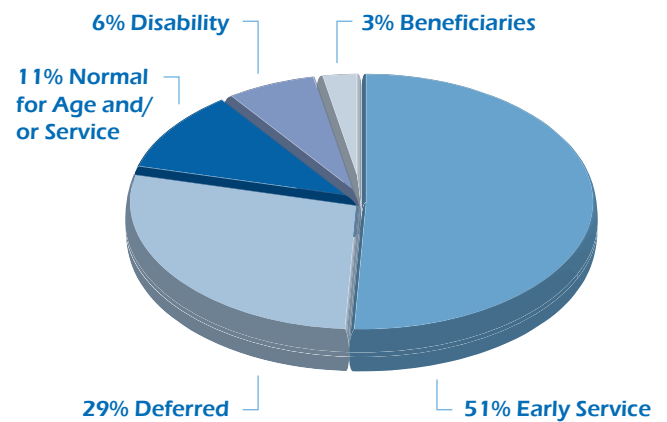
Social Security (Smooth-Out) Option

This form of payment provides an increased monthly benefit prior to age 65. When a member reaches age 65, retirement benefits will be reduced by the projected amount of their primary Social Security benefit. The purpose of this option is to provide for a more level total retirement income before and after age 65, taking into account the federal Social Security benefits. There are no monthly payments to a beneficiary after the member's death.

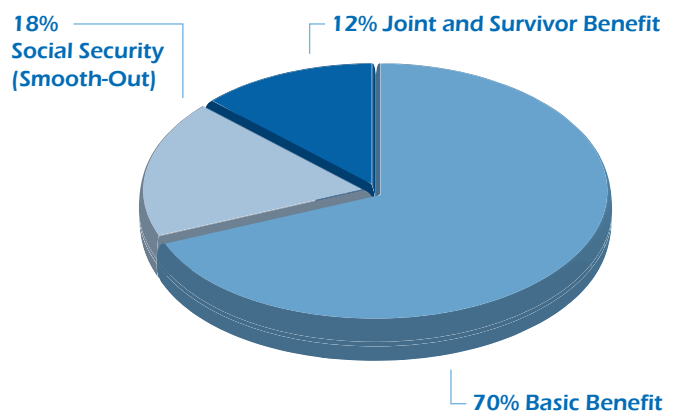
Joint and Survivor Benefit Option

This form of payment provides a reduced benefit during a member's lifetime. Upon the member's death, the same amount or a designated fraction (25%, 50% or 75%) will continue to be paid to a designated beneficiary, if living.

Retirement Types



Benefit Payment Options



Schedule of Average Benefit Payments

Retirement Effective July 1, 2010 to June 30, 2019

	Years of Creditable Service						
	0-5	5-10	10-15	15-20	20-25	25-30	30+
FY 2019							
Average monthly benefit	\$488	\$343	\$744	\$1,352	\$1,546	\$3,399	\$3,224
Average final salary	\$85,690	\$34,903	\$39,025	\$47,110	\$50,916	\$72,880	\$62,348
Number of retired members	6	43	21	16	12	30	24
FY 2018							
Average monthly benefit	\$255	\$238	\$910	\$1,266	\$1,718	\$2,991	\$3,331
Average final salary	\$41,363	\$25,826	\$53,314	\$49,956	\$50,019	\$65,135	\$67,468
Number of retired members	2	27	22	16	8	20	38
FY 2017							
Average monthly benefit	\$146	\$293	\$816	\$1,352	\$1,952	\$3,214	\$2,713
Average final salary	\$52,541	\$31,507	\$44,095	\$60,070	\$56,857	\$66,133	\$52,548
Number of retired members	2	22	26	15	13	17	21
FY 2016							
Average monthly benefit	\$0	\$217	\$1,019	\$1,395	\$1,769	\$3,227	\$3,538
Average final salary	\$0	\$26,320	\$53,657	\$48,659	\$56,612	\$69,436	\$65,794
Number of retired members	0	28	15	18	20	36	22
FY 2015							
Average monthly benefit	\$616	\$270	\$734	\$1,081	\$1,298	\$2,994	\$2,834
Average final salary	\$116,696	\$29,673	\$46,794	\$51,058	\$57,990	\$64,902	\$56,033
Number of retired members	3	40	33	19	8	20	19
FY 2014							
Average monthly benefit	\$0	\$270	\$631	\$1,265	\$1,920	\$2,624	\$2,824
Average final salary	\$0	\$28,316	\$38,490	\$45,144	\$49,749	\$55,108	\$50,571
Number of retired members	0	41	40	15	24	39	100
FY 2013							
Average monthly benefit	\$199	\$264	\$508	\$819	\$1,499	\$2,582	\$3,142
Average final salary	\$75,193	\$30,468	\$31,411	\$40,595	\$50,062	\$61,874	\$58,771
Number of retired members	2	37	30	16	21	30	38
FY 2012							
Average monthly benefit	\$322	\$299	\$457	\$677	\$2,032	\$2,792	\$2,722
Average final salary	\$40,323	\$33,962	\$33,936	\$31,863	\$52,933	\$60,187	\$50,971
Number of retired members	1	32	25	18	15	31	68
FY 2011							
Average monthly benefit	\$26	\$285	\$562	\$1,041	\$1,884	\$3,026	\$2,814
Average final salary	\$30,691	\$29,926	\$29,721	\$51,322	\$55,280	\$64,226	\$52,330
Number of retired members	1	43	22	23	28	34	62
FY 2010							
Average monthly benefit	\$105	\$204	\$472	\$709	\$2,007	\$3,122	\$2,766
Average final salary	\$28,580	\$25,991	\$35,365	\$33,647	\$55,308	\$64,977	\$51,989
Number of retired members	1	33	18	16	27	37	48

Schedule of Membership June 30, 2019

Active Defined Benefit Plan Members – By Departments and Agencies

Animal Care & Control	2
Assessor of Real Estate	7
Citizen Service & Response	3
City Attorney's Office	10
City Auditor	2
City Clerk	2
City Council	2
Department of Community Wealth Building	2
Department of Budget & Strategic Planning	2
Department of Community Development	27
Department of Economic Development	3
Department of Emergency Communications	10
Department of Finance	14
Department of Fire & Emergency Services	355
General Employees	3
Firefighters	352
Department of Health	1
Department of Human Resources	7
Department of Information Technology	15
Department of Parks, Recreations & Community Facilities	68
Department of Procurement Services	2
Department of Public Utilities	203
Department of Public Works	140
Department of Social Services	87
Housing & Community Development	6
Inspector General	1
Juvenile Justice Services	15
Office of the Chief Administrative Officer	1
Minority Business Enterprise	1
Office of the Mayor	2
Public Library	24
Richmond Behavioral Health Authority	25
Richmond Police Department	688
General Employees	47
Police Officers	641
Richmond Retirement System	1
Human Services	3
Total	1,731
Retired Members	
General Employees	3,041
Police & Fire Employees	1,256
City Council Members	3
Total	4,300
Terminated Vested Defined Benefit Plan Members	
General Employees	1,307
Police & Fire Employees	260
City Council Members	-
Total	1,567
Active Defined Contribution 401(a) Plan Members	
General Employees	2,252
Police & Fire Employees	45
Total	2,297
Terminated Vested Defined Contribution 401(a) Plan members	347
Total Membership	10,242

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Richmond Retirement System

RRS

Building your financial future