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, 2018

Comprehensive Annual Financial Report

for the fiscal year ended
June 30, 2018

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

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Footbridge over the James River


Cathedral Of The Sacred Heart viewed from Monroe Park

Introductory Section

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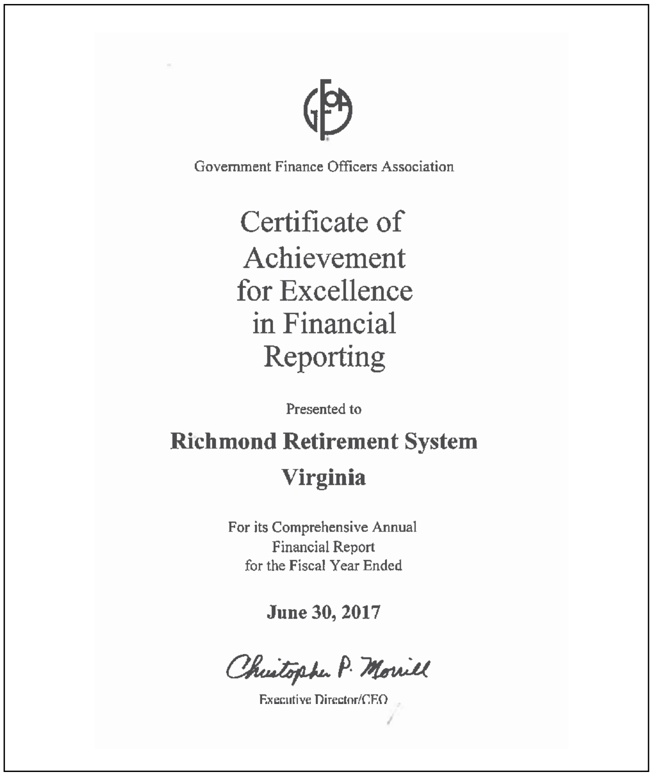
Awards



Government Finance Officers Association

Certificate of Achievement for Excellence in Financial Reporting

Presented to

Richmond Retirement System

Virginia

For its Comprehensive Annual Financial Report for the Fiscal Year Ended

June 30, 2017

Christopher P. Morrill

Executive Director/CEO

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, 2017. This was the 27th 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 2018 continues to conform to the Certificate of Achievement Program requirements.

PPCC

Public Pension Coordinating Council

Recognition Award for Funding 2017

Presented to

Richmond Retirement System

In recognition of meeting professional standards for plan funding as set forth in the Public Pension Standards.

Presented by the Public Pension Coordinating Council, a confederation of

National Association of State Retirement Administrators (NASRA)
National Conference on Public Employee Retirement Systems (NCPERS)
National Council on Teacher Retirement (NCTR)

Alan H. Winkle
Program Administrator

Public Pension Coordinating Council Achievement Award

The RRS received the 2017 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 eighth 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 26, 2018

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, 2018. 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 73nd 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 RRS's net position at June 30, 2018 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 2018 adequately safeguard the System's assets and provide reasonable assurance regarding the proper recording of financial transactions.

Funding

At June 30, 2018, the Plan Fiduciary Net Position as a percentage of the Total Pension Liability was 65.1%, compared to 64.0% at June 30, 2017.

Investments

For the fiscal year ended June 30, 2018, RRS's investment portfolio returned 7.2% on a net-of-fees (net) basis compared to an investment return of 12.5% net in the prior year. The fair market value of the RRS investment portfolio at June 30, 2018 was $575.4 million, an increase of $15.9 million from the prior year.

Major Initiatives and Awards

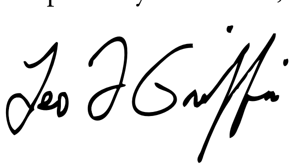
During the current and prior fiscal years, RRS restructured its domestic and international portfolio and gained efficiencies and economies of scale by reducing the number of funds and fund managers.

The Government Finance Officers Association (GFOA) awarded the RRS its Certificate of Achievement for Excellence in Financial Reporting for the 2017 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, 2017.

Acknowledgments

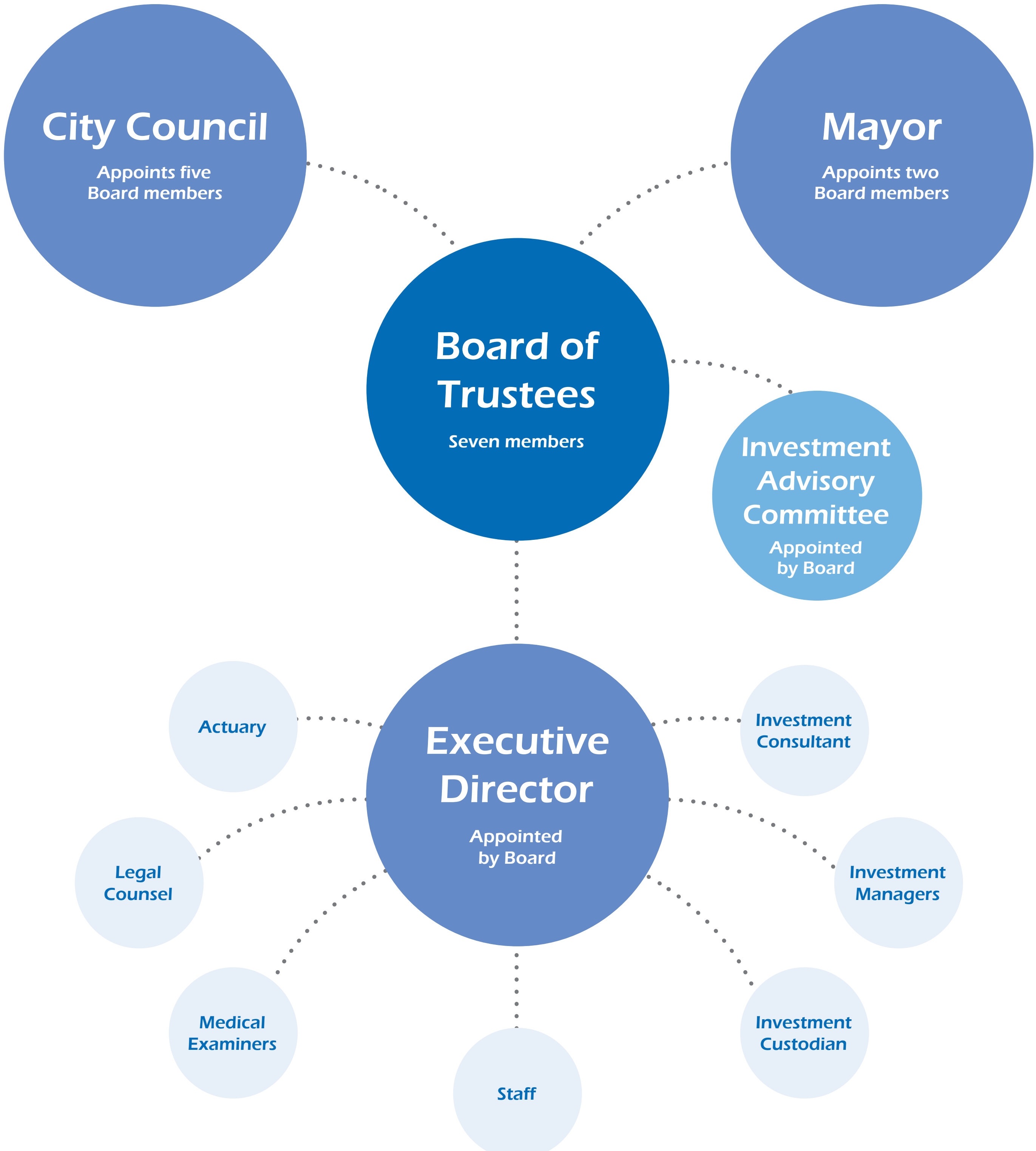
I would like to express my gratitude to the Board of Trustees, Investment Advisory Committee, and my staff. I would also like to thank City Council and the Mayor of the City of Richmond for your continued support of the Richmond Retirement System.

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

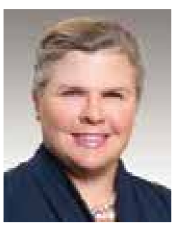
Vice President of Administration & Finance and CFO

Virginia State University

Jess T. Ellington*

Chief Investment Officer & Senior Vice President

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

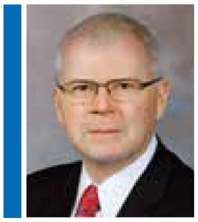
Michael Williams*

Senior Wealth Advisor & Senior Vice President

South State Bank

**Eligible for reappointment*

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 QP 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

NEPC, LLC Boston, MA

Legal Counsel

K&L Gates LLP Seattle, WA

Troutman Sanders LLP Richmond, VA

Master Custodian

State Street Corporation Boston, MA

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

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

MOSSADAMS

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, 2018 and 2017, the related statements of changes in fiduciary net position for the years and 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. 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, 2018 and 2017, and the respective changes in financial position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

continued on next page

Other Matters

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, notes to the schedules, and schedule of investment returns be presented to supplement the 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.

Moss Adams LLP

Albuquerque, New Mexico
October 15, 2018, except for consideration of
Supplementary and Other Information as to
which the date is October 26, 2018

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, 2018. 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 employer's 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 employer's 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 employer's 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 $16.4 million and $37.5 million during the years ended June 30, 2018 and 2017, respectively. Investments returned 7.2% net-of-fees (net) for the year ended 2018 and net 12.5% in 2017. In the year ending June 30, 2018, a strengthened U.S. Dollar, trade policy uncertainty, concerns over anti-establishment political change, along with historically low real interest rates caused investor uncertainty resulting in volatile global markets. Conversely, global markets rebounded to all-time highs resulting in stronger investment performance at June 30, 2017.

- Total additions to net position were $87.4 million in 2018, compared to $107.9 million in the prior year. For 2018, revenue includes member and employer contributions of $48.5 million and net investment income of $38.8 million. Member and employer contributions increased by $3.4 million in 2018 compared to a $1.8 million decrease in 2017. 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 $24 million less in 2018 than in 2017. Private Equity was the top investment performer during 2018 followed by U.S. equity and international equity. International equities, private equity and domestic equity returns were the largest contributors to investment performance in 2017.

- Total plan expenses in 2018 were $71 million, a $540 thousand increase from 2017. Total expenses are primarily driven by pension benefit payments, which compose over 98% of total expenses. For the years ended June 30, 2018 and 2017, retiree benefits increased by $521 thousand and $340 thousand, respectively.

Lewis Ginter Botanical Gardens

Financial Statements and Analysis

Summary of Financial Statements:

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

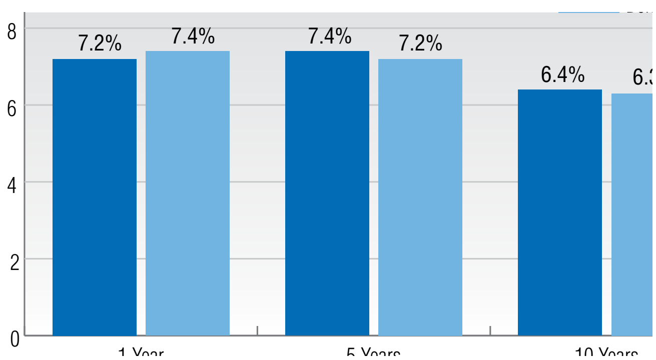
Activity for the Fiscal Year Ended June 30	2018	2017	2016
Total Assets	$ 594,012,689	$ 576,228,678	$560,310,816
Total Liabilities	(24,927,379)	(23,516,117)	(45,057,023)
Net Assets	**569,085,310**	**552,712,561**	**515,253,793**
Contributions	48,511,853	45,061,707	46,902,065
Net Investment Earnings	38,843,025	62,841,319	(1,498,570)
Total Additions	**87,354,878**	**107,903,026**	**45,403,495**
Benefits Payments	69,773,981	69,302,957	69,049,286
Administrative Expenses	1,208,148	1,141,301	1,161,281
Total Deductions	**70,982,129**	**70,444,258**	**70,210,567**
Total Additions	87,354,878	107,903,026	45,403,495
Total Deductions	(70,982,129)	(70,444,258)	(70,210,567)
Net Change	**$ 16,372,749**	**$ 37,458,768**	**$(24,807,072)**
Contribution Rates			
General	**46.51%**	**43.08%**	**44.20%**
Police/Fire	**40.56%**	**38.36%**	**38.93%**

Revenues — Additions to Net Plan Position

- Total employer and member contributions increased by 7.7% in 2018 and decreased by 3.9% in 2017. During 2018, the employer's contribution rate was 46.51% for general employees and 40.56% for police and fire. In 2017, the employer's contribution rate was 43.08% for general employees and 38.36% 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 $38.8 million in 2018 compared to a $62.8 million net investment gain in 2017. In 2018, the portfolio returned 7.2% underperforming its benchmark by 0.2%. In 2017, the portfolio returned 12.5% beating its benchmark by 1.3%. As shown on the graph below, both the five and ten-year investment returns were above the System's benchmark. Ten-year absolute performance continues to be weighed down by losses incurred during the credit crisis. Further investment data can be found in the Investment Section of this report beginning on p. 42. In 2018, the U.S. economy continued its near historically long growth streak as the Federal Reserve Bank maintained its path of tightening monetary policy through increasing interest rates while the Tax Cuts and Jobs Act of 2017 provided fiscal stimulus. Global capital markets continued to be largely driven by accommodative Central Bank policy. As a result, U.S. equities posted their ninth consecutive year of positive returns and outperformed international equities. Volatile global markets became a mainstay in the year ending June 30, 2018.

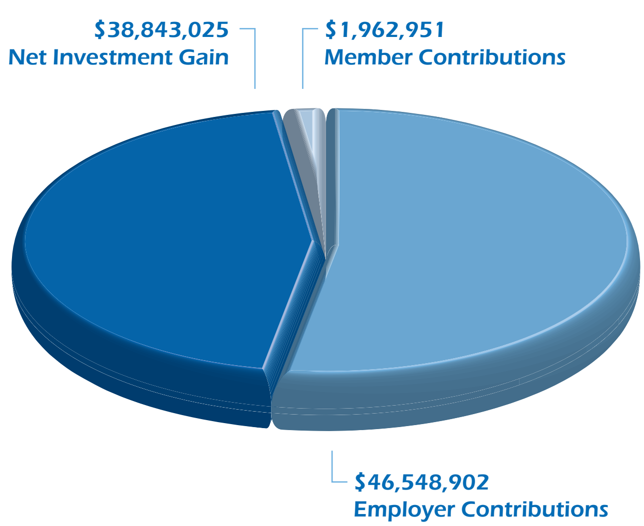
Investment Performance (Net of Fees)

As of June 30, 2018



Revenues — Additions to Net Plan Position

Fiscal Year 2018

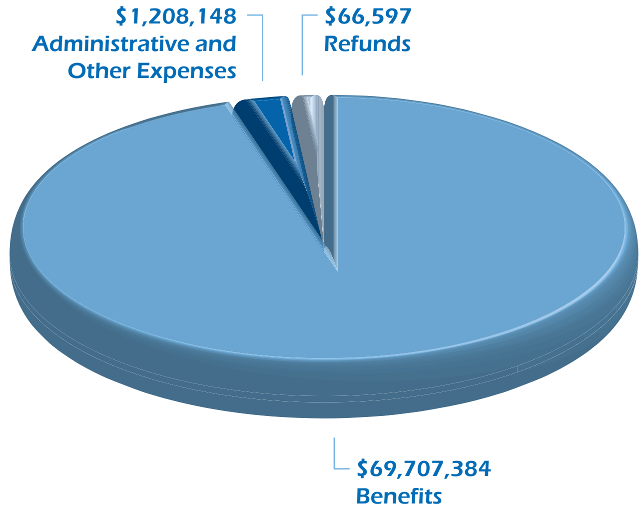


Expenses — Deductions from Net Plan Assets

- Retiree benefits paid increased by $521 thousand (0.8%) in 2018 and increased by $340 thousand (0.5%) in 2017. The number of retirees and beneficiaries increased by 21 members in 2018 and decreased by 25 in 2017.
- Refunds of contributions decreased by $50 thousand (42.8%) in 2018 compared to a decrease of $86 thousand (42.6%) in 2017. 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 $67 thousand or 6.2% in 2018 and decreased by $20 thousand or 1.8% in 2017. In 2018, the city began an information technology allocation resulting in the System's increase in administrative costs. Staff and the Board continue to be diligent about Plan operating expenses.

Expenses — Deductions from Net Plan Assets

Fiscal Year 2018



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. For the fiscal years ended on or before June 30, 2014, the funded status represented the ratio of the actuarial value of the assets to the liability using the Projected Unit Credit actuarial cost method. Beginning with the fiscal year ended June 30, 2014, and 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 assumptions and performance of financial markets can significantly impact the funded status.

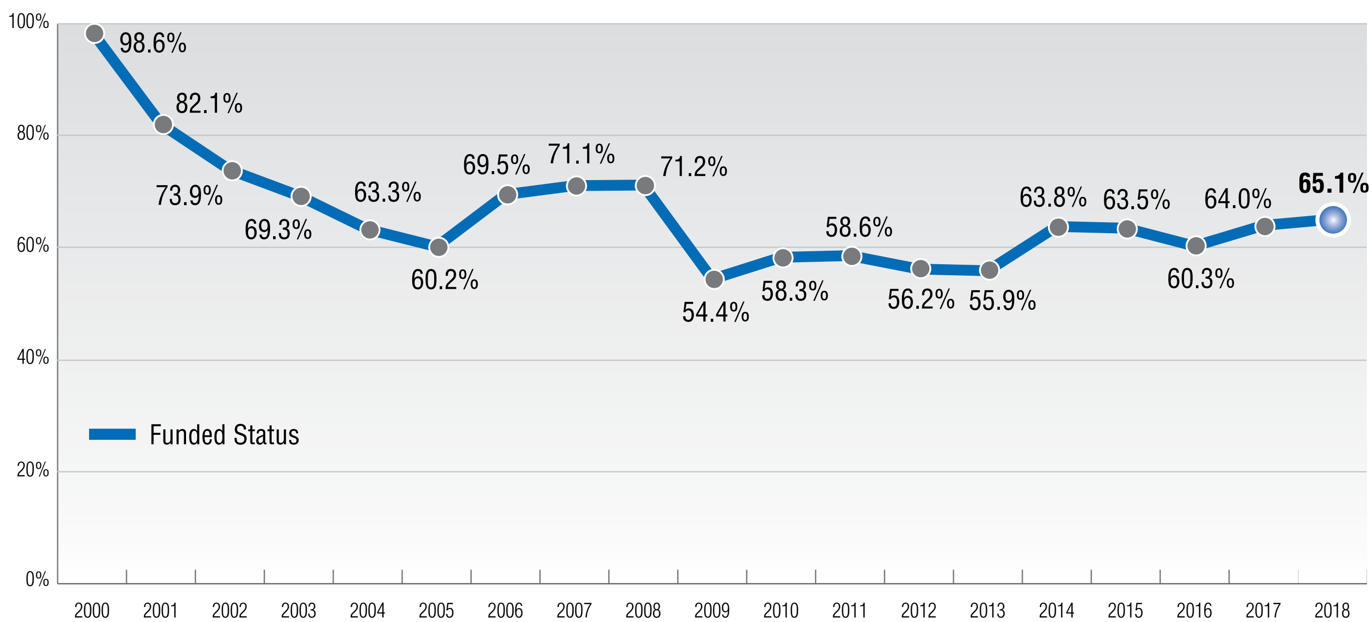
The primary concern to most pension plan participants is whether there will be enough money available to pay benefits. The City of Richmond has traditionally contributed the actuarially determined contribution (ADC) as determined by the RRS's actuary. City Code requires that contributions to the RRS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

The sudden drop in the 2009 funded status was a result of investment losses incurred during the global financial crisis. At 65.1%, the 2018 funded status is at its highest level since 2008. The benefit structure of the plan, coupled with contributions and investment returns, are primary drivers of the funded status.

Retiree Benefit Adjustment

City Council (Council) has the ultimate authority to issue ad hoc COLAs. Based on their adopted policy, the RRS Board of Trustees may recommend an ad hoc adjustment to the Council if the funded status is 80% or greater and remains above 80% after the ad hoc adjustment is granted. The funded status was less than 80% as of June 30, 2018; hence, the Board has not recommended an ad hoc COLA to Council. The last ad hoc retiree adjustment occurred in 2008. Based on the current funded status, the Board does not anticipate recommending ad hoc adjustments in the near future. It will take continued significant favorable experience in the investment markets or an increase in contribution levels to raise the funded status above 80% in the short term.

Schedule of Funding Status *As of June 30, 2018*



Statement of Fiduciary Net Position

Defined Benefit Pension Trust Fund

As of June 30,

Assets	2018	2017
Cash and Short-Term Investments (Note II)	**$8,893,458**	**$8,366,630**
Receivables		
Receivables for Security Transactions	7,319,879	3,312,163
Employer Contributions	1,044,711	993,374
Interest and Dividends	264,603	228,223
Other Receivables	8,264	197,693
Total Receivables	**8,637,457**	**4,731,453**
Investments, at Fair Value (Note II)		
U.S. Equities	139,417,743	146,149,662
International Equities	104,730,927	99,593,267
U.S. Fixed Income	27,256,398	29,173,877
Global Fixed Income	98,473,242	95,890,621
Opportunistic Fixed Income	24,730,981	29,346,429
Real Estate Investment Trusts and Funds	35,958,505	34,161,445
Hedge Funds	77,992,802	68,926,564
Private Debt	45,537,178	38,609,273
Private Equity	21,293,255	17,681,710
Total Investments	**575,391,031**	**559,532,848**
Net Cash Collateral Received Under Securities Lending Program	**670,173**	**3,117,095**
Capital Assets		
Net Furniture, Fixtures & Equipment	178,100	203,543
Net Leasehold Improvement	242,470	277,109
Total Net Capital Assets	**420,570**	**480,652**
Total Assets	**594,012,689**	**576,228,678**
Liabilities		
DROP Payable	10,688,523	11,104,551
Payable for Security Transactions	11,230,514	7,016,231
Accounts Payable and Accrued Expenses	1,628,079	1,532,131
Investment Expenses Payable	458,798	499,500
Retirement and Death Benefits Payable	242,029	237,346
Total Accounts Payable	**24,247,943**	**20,389,759**
Payable for Collateral Received Under Securities Lending Program	**679,436**	**3,126,358**
Total Liabilities	**24,927,379**	**23,516,117**
Net Position Restricted for Pensions	**$569,085,310**	**$552,712,561**

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	2018	2017
Employer Contributions (Note V)	$45,459,066	$41,773,649
Richmond Behavioral Health Authority	1,024,279	1,077,226
Other	65,557	60,201
Total Employer Contributions	**46,548,902**	**42,911,076**
Total Member Contributions	**1,962,951**	**2,150,631**
Total Contributions	**48,511,853**	**45,061,707**
Investment Income		
Net Increase in Fair Value of Investments (Note II)	38,489,471	60,990,637
Dividends	1,771,975	2,066,020
Interest	737,884	1,681,783
Total Investment Income before Investment Expense	**40,999,330**	**64,738,440**
Investment Expenses	(2,167,181)	(1,981,157)
Net Investment Income	**38,832,149**	**62,757,283**
Security Lending Income		
Gross Income	59,155	135,706
Less Borrower Rebates, Agent Fees, Appreciation/Depreciation	(48,279)	(51,670)
Net Security Lending Income	**10,876**	**84,036**
Total Net Investment Gain	**38,843,025**	**62,841,319**
Total Additions	**87,354,878**	**107,903,026**
Deductions		
Retirement Benefits	(69,707,384)	(69,186,440)
Refunds of Member Contributions	(66,597)	(116,517)
Administrative Expenses	(1,148,066)	(1,081,219)
Depreciation Expense	(60,082)	(60,082)
Total Deductions	**(70,982,129)**	**(70,444,258)**
Net Increase	**16,372,749**	**37,458,768**
Net Position Restricted for Pensions		
Beginning of Year	552,712,561	515,253,793
End of Year	**$569,085,310**	**$552,712,561**

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. Additional information about the Defined Contribution 401(a) Plan is provided in the statistical section of this report.

(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) Actuarial Basis and Contribution Rates

The funding policy for the pension plan provides for periodic employer contributions at actuarially determined rates as a percentage of payroll and will accumulate sufficient assets to meet the costs of all benefits when due. Member and employer contributions are required by Sections 22-112 – 22-114 of the City Code.

The July 1, 2016 valuation developed contribution rates for the fiscal year ending June 30, 2018, using the Entry Age Actuarial Cost Method, in accordance with GASB 67. This method is also used in the RRS's fiscal year 2018 annual valuation for purposes of determining funded status. The unfunded actuarial liability, and any changes in unfunded actuarial liability due to changes in benefit provisions, actuarial gains and losses, and changes in methods and assumptions, is amortized over a period of 20 years, with contributions increasing 4% per year for Police and Fire employees and level contributions for General Employees.

Actuarial valuations estimate the value of reported amounts and assumptions about the probability of occurrence of events in the future. The actuarial assumptions include mortality, turnover, disability, and other occurrences that have an impact on the amount and timing of future benefits. Actuarially determined amounts are subject to revision as actual results are compared with past expectations and new estimates are made about the future. The required supplemental schedules of employer net pension liability and contributions, which follow these notes, present historical information about the relationship between plan assets and liabilities and the employer's ability and willingness to meet their funding obligations.

(E) 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. Administrative expenses for the fiscal year ended June 30, 2018, are presented in the Schedule of Administrative Expenses in the Supporting Schedules Section following the Required Supplementary Information.

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, 2018, the carrying amount of the RRS's deposits with financial institutions was $2,297,737and the bank's reporting balance was $2,653,410. 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.

The average duration of the short-term investments in the duration pool which includes securities with a remaining maturity of 91 days or greater for the year ended June 30, 2018 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, for the year ended June 30, 2018 was 105 days with weighted average maturity of 114 days. 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.

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
U.S. Corporate Bonds & Equities	$656,605	$679,436	$670,173

At June 30, 2018, the RRS had no credit risk exposure to borrowers. The total fair value of collateral held and the fair value (USD) of the securities on loan for the System as of June 30, 2018 was $670,173 and $656,605 respectively. RRS also holds securities collateral that cannot be pledged or sold absent a borrower's default totaling $2,725,407 as of June 30, 2018.

(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 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, 2018, total unfunded commitments amounted to $41.4 million.

2. Asset Allocation

The table below indicates the policy target asset allocation as of June 30, 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 U.S. Equities	8.00%	3% - 13%
Large Cap U.S. Growth	5.00%	0% - 10%
Large Cap U.S. Value	5.00%	0% - 10%
Small/Mid Cap Growth U.S. Equities	5.00%	0% - 10%
International Equities Total:	**15.00%**	
Developed International Equities	8.00%	3% - 13%
Emerging International Equities	7.00%	2% - 12%
Fixed Income Total:	**27.50%**	
Global Multi-Sector Fixed Income	22.50%	17.5% - 27.5%
Opportunistic Fixed Income	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, 2018 and 2017:

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**	**$49,499,731**	**$13,514,262**	**$126,185,408**
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	**386,191,630**			
Total Investments at Fair Value	**$575,391,031**			

Investments Measured at Fair Value

as of June 30, 2017

	Fair Value at June 30, 2017	Quoted Prices in Active Markets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
U.S. Equities				
Consumer Spending	$3,747,725	$3,747,725	$ -	$ -
Energy and Industrials	3,764,343	3,764,343	-	-
Information Technology	3,074,064	3,074,064	-	-
Financials	6,688,932	6,688,932	-	-
Health Care	3,318,400	3,318,400	-	-
Other	3,507,467	3,507,467	-	-
Total U.S. Equities	**24,100,931**	**24,100,931**	**-**	**-**
U.S. Fixed Income				
Corporate Bonds	15,048,807	15,048,807	-	-
Mortgage-Backed Securities	8,170,527	-	8,170,527	-
U.S. Treasury Obligations	5,023,735	5,023,735	-	-
Other	930,808	-	930,808	-
Total U.S. Fixed Income	**29,173,877**	**20,072,542**	**9,101,335**	**-**
Global Fixed Income	6,240,392	2,551,170	3,689,222	-
Opportunistic Fixed Income	29,346,429	-	-	29,346,429
Real Estate Investment Trusts and Funds	8,362,704	5,677,714	-	2,684,990
Hedge Funds	21,480,046	-	-	21,480,046
Private Debt	38,609,273	-	-	38,609,273
Private Equity	17,681,710	-	-	17,681,710
Total Investments Measured at Fair Value Levels	**174,995,362**	**$52,402,357**	**$12,790,557**	**$109,802,448**
Investments Measured at NAV Practical Expedient				
U.S. Equities	122,048,731			
International Equities	99,593,267			
Global Fixed Income	89,650,229			
Real Estate Investment Trusts and Funds	25,798,741			
Hedge Funds	47,446,518			
Total Investments Measured at NAV	**384,537,486**			
Total Investments at Fair Value	**$559,532,848**			

Investments Measured at NAV Practical Expedient	Fair Value June 30, 2018	Unfunded Commitments	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	4,133,566	Quarterly	45 Days
Hedge Funds	46,729,101	-	Daily, Quarterly	1 - 95 days
Total Investments Measured at NAV Practical Expedient	**$386,191,630**	**$4,133,566**		

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 catcategory 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. Due to significant liquidation hurdles, an investment reported at the NAV practical expedient as of June 30, 2017 has been reclassified to Level 3 in accordance with GASB 72 as of June 30, 2018.

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 valued 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.

4. Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligation to the 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, 2018 are summarized in the table at right.

Credit Quality Fixed Income Securities

As of June 30, 2018

Investment Type	Credit Rating Level	Fair Value
U.S Fixed Income		
Corporate Bonds	AAA	119,671
	AA+:AA-	170,339
	A+:A-	1,189,590
	BBB+:BBB-	6,564,469
	BB+:BB-	127,810
	NR	118,896
		8,290,775
Mortgage Backed	AAA	1,064,965
	A+:A-	244,419
	B+:B-	201,185
	CCC	67,920
	NR	1,120,050
		2,698,539
U.S. Treasuries	NR	10,397,528
Other	NR	5,869,556
Total U.S. Fixed Income		**27,256,398**
Global Fixed Income		
Corporate Bonds	A+:A-	678,560
	BBB+:BBB-	817,939
	BB+:BB-	115,943
	NR	123,995
		1,736,437
Asset Backed	AAA	251,035
Commingled Funds	NR	96,485,770
Total Global Fixed Income		**98,473,242**
Opportunistic Growth Income	NR	**24,730,981**
Total Fixed Income		**$150,460,621**

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

At June 30, 2018, the fair values of securities on loan, cash collateral received, and the reinvested cash collateral can be found in the table on page 23.

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. 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, 2018, the total fair value of these investments was $199 million.

At June 30, 2018, the RRS has $3 million of foreign currency holdings in its portfolio. The Board monitors foreign currency risk in accordance with the RRS investment policy.

6. 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 table below shows the RRS's interest rate exposure at June 30, 2018.

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

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**

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 year ended June 30, 2018.

Plan Membership

	For the Fiscal Year ended:			
	2018	2017	Increase/ (Decrease)	Percent Change
Active Vested DB Plan Members	1,522	1,623	(101)	-6.2%
Active Non-vested DB Plan Members	259	235	24	10.2%
Terminated Vested DB Plan Members	1,603	1,616	(13)	-0.8%
Retirees & Beneficiaries	4,318	4,297	21	0.5%
Total:	**7,702**	**7,771**	**(69)**	**-0.9%**

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 without loss of any other employee benefits.

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 annual benefit 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.

For fiscal years ended June 30, 2018 and 2017, the DROP liability was $10,688,523 and $11,104,551, 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 year ended June 30, 2018, the Entry Age Actuarial Cost Method was used in determining employer contribution rates, calculated by the RRS's actuaries.

The annual contribution percentages include amortization of the unfunded actuarial liability. The employer contribution rates calculated for fiscal year ended June 30, 2018 were 40.56% for sworn public safety officers and 46.51% for general employees. The employer contributions rates calculated for fiscal year ending June 30, 2017 were 38.36% for sworn public safety officers and 43.08% 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 $48,511,853, including $1,962,951 in member contributions, were made from July 1, 2017 to June 30, 2018 in accordance with the actuarially determined contribution requirements stated above. Contributions made during the fiscal year ended 2017 were $45,061,707, including $2,150,631 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, 2018 and 2017 were as follows:

	2018	2017
Total Pension Liability	$874,789,363	$863,992,966
Plan Fiduciary Net Position	(569,085,310)	(552,712,561)
Net Pension Liability	$305,704,053	$311,280,405
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (Funded Status)	65.1%	64.0%

Actuarial Assumptions

The July 1, 2016 valuation developed contribution rates for the fiscal year ending June 30, 2018, using the Entry Age Actuarial Cost Method. The actuarial method used to determine the net pension liability for fiscal year ended 2017 was also the Entry Age Actuarial Cost Method.

The amortization method used for general employees is a level dollar method over a closed period of 20 years. The amortization method used for police and fire employees is a level percent of pay method over a closed period of 20 years.

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 fair value. This smoothing method is utilized in order to smooth the impact of short term market fluctuations on the RRS's contribution rates and funded status.

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 7.5% investment rate of return, (b) projected salary increases were of 3.0% to 5.0% for general employees and 3.0% to 4.5% for police and fire employees, (c) the assumption that benefits will not increase after retirement.

See Schedule of Changes in Employer's Net Pension Liability and Related Ratios on page 37.

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 arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2018 are summarized in the table on page 35.

Asset Class	30-Year NEPC Assumptions *Arithmetic Return*
Large Cap Equities	8.83%
SMID Cap Equities	9.64%
Developed Intl Equities	9.64%
Emerging Intl Equities	12.47%
Hedge Funds	6.71%
Private Equity	11.72%
Global Multi-Sector Fixed Income	5.29%
Opportunistic Fixed Income	5.32%
Private Debt	8.25%
Real Estate (core)	7.25%
Cash	2.75%

Annual Money-Weighted Rate of Return

For the fiscal year ended June 30, 2018, the annual money-weighted rate of return was 7.1% and 12.2% for fiscal year ended June 30, 2017. 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 NEPC 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 7.5% for both Fiscal years ended 2018 and 2017. 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 7.5%, as well as using a discount rate that is one percentage point lower (6.5%) or one percentage point higher (8.5%) than the current rate:

	1% Decrease (6.50%)	Current Discount Rate (7.50%)	1% Increase (8.50%)
Net Pension Liability	$385,472,527	$305,704,053	$236,753,356
Funded Status	59.6%	65.1%	70.6%

The James River in winter

Required Supplementary Information

Financial Section, continued

In this section:

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

Total Pension Liability	2018	2017	2016	2015	2014
Service cost	$10,306,295	$10,254,351	$10,452,587	$9,471,988	$10,648,531
Interest	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	8,033,833	6,602,613	1,284,630	(6,133,948)	1,651,751
Changes of Assumptions	-	-	-	-	(26,784,600)
Benefit Payments, Including Refunds of Member Contributions	(69,773,981)	(69,302,957)	(69,049,286)	(68,268,268)	(67,320,865)
Net Change in Total Pension Liability	**10,796,397**	**9,117,769**	**3,963,752**	**(3,372,696)**	**(10,704,024)**
Total Pension Liability — Beginning	**863,992,966**	**854,875,197**	**850,911,445**	**854,284,141**	**864,988,165**
Total Pension Liability — Ending (a)	**$874,789,363**	**$863,992,966**	**$854,875,197**	**$850,911,445**	**$854,284,141**

Plan Fiduciary Net Position	2018	2017	2016	2015	2014
Contributions — Employer	$46,548,902	$42,911,076	$44,926,043	$46,684,500	$42,342,620
Contributions — Member	1,962,951	2,150,631	1,976,022	2,347,163	2,118,493
Net Investment Income	38,843,025	62,841,319	(1,498,570)	15,641,333	76,463,285
Benefit Payments, Including Refunds of Member Contributions	(69,773,981)	(69,302,957)	(69,049,286)	(68,268,268)	(67,320,865)
Administrative Expense	(1,208,148)	(1,141,301)	(1,161,281)	(1,248,162)	(1,318,016)
Net Change in Plan Fiduciary Net Position	**$16,372,749**	**$37,458,768**	**$(24,807,072)**	**$(4,843,434)**	**$52,285,517**
Plan Fiduciary Net Position — Beginning	552,712,561	515,253,793	540,060,865	544,904,299	492,618,782
Plan Fiduciary Net Position — Ending (b)	$569,085,310	$552,712,561	$515,253,793	$540,060,865	$544,904,299
Employer's Net Pension Liability — Ending (a) - (b)	**$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	**65.1%**	**64.0%**	**60.3%**	**63.5%**	**63.8%**
Covered Payroll	**$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	**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 Employer's Contributions*

	2018	2017	2016	2015	2014
Actuarially Determined Contribution	$46,548,902	$42,911,076	$44,926,043	$46,684,500	$42,342,620
Contributions in Relation to the Actuarially Determined Contribution	46,548,902	42,911,076	44,926,043	46,684,500	42,342,620
Contribution Deficiency (Excess)	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Covered Payroll	**$107,814,490**	**$107,363,266**	**$108,015,367**	**$111,738,352**	**$110,748,076**
Contributions as a Percentage of Covered Payroll	**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

	2018
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	20 years for remaining unfunded accrued liability as of July 1, 2006; 20 years for subsequent changes.
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	3.00%
Salary Increases – General Employees	3.00% to 5.00%
Salary Increases – Police and Fire Employees	3.00% to 4.50%
Investment Rate of Return	7.50%
Retirement Age – General Employees	20% in first year of unreduced retirement eligibility; 3% at age 55 increasing to 100% at age 75
Retirement Age – Police and Fire Employees	40% in first year of unreduced retirement eligibility; 9% at age 50 increasing to 100% at age 64
Mortality – General Employees	RP-2000 Mortality Table with two year set-forward for Males
Mortality – Police and Fire Employees	RP-2000 Mortality Table

Schedule of Investment Returns*

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

**Annual money-weighted rate of return is calculated net of all investments management expenses and additional plan investment related expenses that are reported by the plan's custodian or were provided to NEPC 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 7.2% 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.*


Downtown at dusk

Supporting Schedules

Financial Section, continued

In this section:

Schedule of Administrative Expenses

Year Ended June 30, 2018

Personnel Services	
Salaries and wages	$532,089
Social Security and Medicare	27,541
Retirement contributions	108,323
Group life and health insurance	65,757
Total Personnel Services	**733,710**
Professional Services	
Actuarial	76,700
Legal services	97,695
Auditing and accounting services	73,780
Business services	30,237
Medical examiners	2,069
Total Professional Services	**280,481**
Communications	
Postage	1,301
Printing and publications	4,278
Telecommunications	3,573
Total Communications	**9,152**
Other	
Board/staff development and travel	33,447
Technology	11,916
Supplies	7,132
Dues and membership	4,240
Depreciation	60,082
Miscellaneous	5,450
Total Other	**122,267**
Total Administrative Expenses before Allocation to Information Technology	**1,145,610**
Allocation to Information Technology	62,538
Total Administrative Expenses	**$1,208,148**

Schedule of Investment Expenses

Year Ended June 30, 2018

Investment Managers:

LSV Asset Management	$152,141
Stone Harbor Investment Partners	86,248
CenterSquare Investment Management	30,332
Commingled Funds:	
Acadian Asset Management	426,331
JP Morgan Asset Management	256,491
Loomis, Sayles & Co. (Credit Opportunistic)	199,369
Brandywine Global Investment Management, LLC	199,990
Fidelity Investments	228,984
State Street Global Advisors	22,632
Total Investment Managers Expenses*	**$1,602,518**

Investment Custodian

State Street Corporation	**$259,114**

**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 Plan Net Position to arrive at a net investment income amount.*

Schedule of Payments to Investment Consultant

Year Ended June 30, 2018

Investment Consultant:

NEPC	**$305,549**

During the fiscal year ended June 30, 2018, the RRS did not direct any soft dollar transactions.

Schedule of Retirement Benefits

Year Ended June 30, 2018

Benefit Payments:

Regular Pension	$59,048,270
Disability Pension	4,265,282
Survivor Pension	2,159,023
Death Benefits	109,454
DROP Expense	4,125,355
Total Benefits	**$69,707,384**

Aerial view of the Virginia State Capitol

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

NEPC, LLC

Kevin M. Leonard
Partner

August 29, 2018

Board of Trustees
Richmond Retirement System
730 East Broad Street
Suite 900
Richmond, VA 23219

RE: Fiscal Year End 2018

Dear Trustees,

NEPC, LLC currently serves as the pension consultant for the Richmond Retirement System (RRS). In our role as the pension consultant, we assist the Board in several manners: determining and executing the overall asset allocation strategy of the Plan, drafting of the investment policy of the Plan (and amendment of when necessary), conducting investment manager searches (both traditional and alternative asset classes); conducting custodial services searches, providing ongoing performance evaluation to each individual investment manager, to each asset class composite, and for the overall investment portfolio as a whole, and providing pertinent education to the Board.

The overall objective of the RRS is to provide service, disability, death and vested retirement benefits, and other post-employment benefits to members and their beneficiaries. To ensure a solid foundation for the future of the System, RRS has implemented an investment program designed to achieve the actuarial assumed rate of return of the long term, while prudently managing the risk of the portfolio.

Although investment manager performance is key in the future "success" of the Plan, the overall asset allocation policy will be the primary determinant of such "success." Modern Portfolio Theory maintains that long-term investors, who assume prudent levels of risk, will be rewarded with incremental returns above lower-returning and risk-free assets (i.e. T-Bills). The pension fund, in its asset allocation policy, is required to satisfy the need to pay accumulated/earned retirement benefits today, while at the same time be prepared for "uncertain" future benefits. This balancing of short-term needs versus long-term needs is a key tenant in the overall construction of the portfolio known as the generation of income versus appreciation of assets. To facilitate this demand balance of short term versus long term, the Board has adopted a diversified asset allocation structure that is primarily weighted in equity-like asset classes,

continued on next page

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such as U.S. equities, non-U.S. equities, and alternative investments, which seek return with offsetting investments in fixed-income-like asset classes which provide current income and/or stability. Diversification aims to reduce volatility and better equalize the contribution to an overall plan's risk across a variety of asset classes with unrelated return patterns. Our goal is to diversify the System's assets within the traditional and non-traditional asset classes to reduce volatility, achieve above-market returns, and to better protect the portfolio against difficult market conditions.

The Board continues to work diligently on restructuring and expanding the alternative investment program, which will further assist in the diversification of the portfolio. Asset classes such as hedge funds are designed to lower the overall volatility of the program, while private equity/private debt is designed to provide higher long-term performance above what is expected from traditional equity/fixed income markets. As the allocation strategy evolves year after year, diversification and risk mitigation will continue to be the pillars of the asset allocation structure.

During fiscal year 2018, the Investment Advisory Committee (IAC) conducted formal reviews of the private equity, private debt, and real estate portfolios. The IAC also implemented the new hedge fund structure that was adopted as a result of a hedge fund portfolio review that was conducted during fiscal year 2017. The private equity review resulted in the retention of one new fund that is a follow-on investment with a Firm in which RRS is invested in their two previous funds. The private debt review resulted in the retention of two new funds that are follow-on investments with Firms in which RRS is invested in each of their two previous funds. The hedge fund review/implementation resulted in three managers being terminated and three being retained.

NEPC provides RRS with quarterly economic and investment market updates and performance reviews, investment manager monitoring and selection advice, and related investment services for traditional and non-traditional asset classes. Investment performance analysis and comparisons produced by NEPC have been calculated using standard performance evaluation methodologies and are consistent with industry standards. Performance results are calculated using a time-weighted return methodology. The Board's goal of achieving market rates of returns, while mitigating unwarranted risk, is measured against appropriate benchmarks and comparative universes on a quarterly basis. Performance is measured on a most recent quarter, year-to-date, and accumulated trailing annual periods, as well as three- and five-year periods (full market cycle). Risk-adjusted performance on an absolute basis and a comparative basis is also measured. This review process allows the Board to evaluate and determine whether established goals and objective are being achieved.

RRS Fiscal Year Performance

- For the fiscal year ending June 30, 2018, the RRS Total Fund returned 7.2% on a net-of-fees basis (7.7% on a gross-of-fee basis) underperforming the policy benchmark return of 7.4% by 20 basis points.
- For the trailing five-year period ending June 30, 2018, the RRS Total Fund returned 7.4% on a net-of-fees basis (8.0% on a gross-of-fee basis) outperforming the policy benchmark return of 7.2% by 20 basis points.
- For the trailing ten-year period ending June 30, 2018, the RRS Total Fund returned 6.4% on a net-of-fees basis (6.9% on a gross-of-fee basis) outperforming the policy benchmark return of 6.3% by 10 basis points.

continued on next page

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NEPC, LLC

Relative to peer group comparison of other Public Funds (InvestorForce Public Fund Universe):

- For the fiscal-year ending June 30, 2018 the net return of 7.2% ranked the RRS in the 66th percentile (1% being the highest, 100% being the lowest).
- For the trailing five-year period ending June 30, 2018, the net return of 7.4% ranked RRS in the 53rd percentile (1% being the highest, 100% being the lowest), outpacing 47% of other public funds within the universe.
- For the trailing ten-year period ending June 30, 2018, the net return of 6.4% ranked RRS in the 40th percentile (1% being the highest, 100% being the lowest), outpacing 60% of other public funds within the universe.

Fiscal Year 2018 Market Review

The U.S. economy continued its near historically long growth streak as the Federal Reserve Bank maintained its path of methodically tightening monetary policy through increasing interest rates while the Tax Cuts and Jobs Act of 2017 provided fiscal stimulus and expectations of further economic growth. Global capital markets continued to be largely driven by accommodative Central Bank policy in addition to Central Bankers indicating that stimulative monetary policy may persist into 2019 and perhaps beyond. U.S. Equities, as a result, posted their ninth consecutive year of positive returns and outperformed international equities. Volatile global markets became a mainstay in the year ending June 30, 2018 as concerns over anti-establishment political change, historically low and broadly negative real interest rates and fears over U.S. trade policy caused uncertainty to enter into investor sentiment. Uncertainty related to these risks was reflected in market volatility, yet these risks were largely shrugged off by markets, resulting in U.S. equities posting a robust 14.4% return as measured by the S&P 500 Index. International developed-markets equities performed well but underperformed domestic equities by 7.6%. Underperformance in international developed markets was driven by political and economic growth uncertainty in Europe. Emerging markets equities underperformed U.S. and out-performed developed-international equities though volatility saw an uptick toward the end of the year as markets reacted to U.S. Dollar strength and trade policy uncertainty. Driven by increasing interest rates, U.S. high-quality fixed income investments produced a negative return for the second consecutive year, returning -0.4% as measured by the Bloomberg Barclays U.S. Aggregate Bond Index.

NEPC, LLC appreciates the opportunity to serve as your consultant. It is a pleasure to work with the RRS and we look forward to continuing our relationship for the benefit of the Board, staff, and most importantly, the members of the System.

Sincerely,

255 State Street | Boston, MA 02109 | TEL: 617.374.1300 | www.nepc.com
BOSTON | ATLANTA | CHARLOTTE | CHICAGO | DETROIT | LAS VEGAS | SAN FRANCISCO

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.

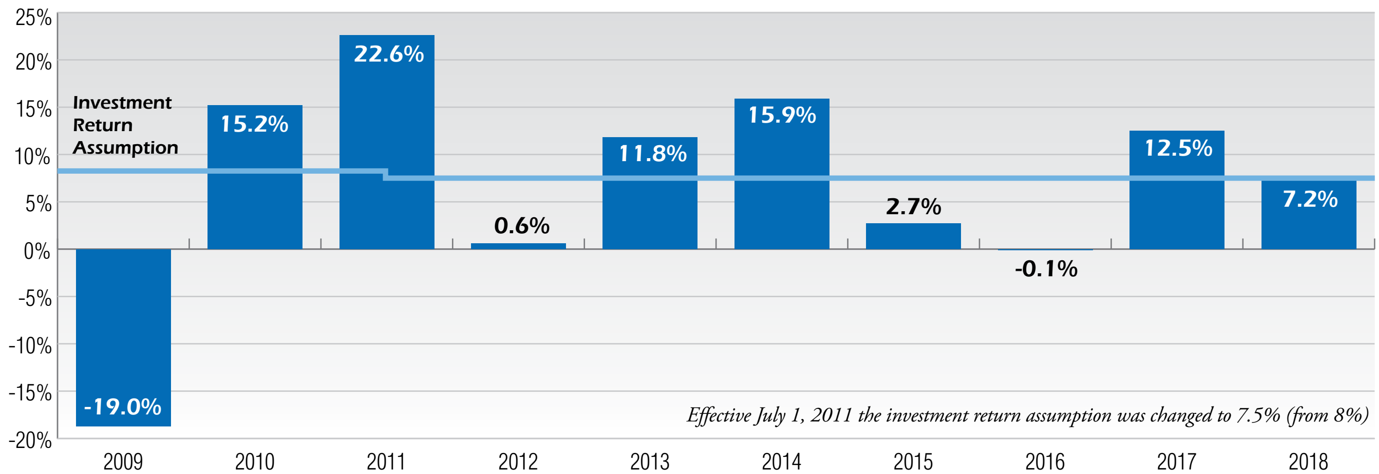
Time Horizon

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)*



Investment Performance* *(Net of Fees)*

One, Five & Ten Years Ending June 30, 2018

		1 YEAR		5 YEARS		10 YEARS	
Asset Category	**Note**	**% Rate of Return**	**% Benchmark**	**% Rate of Return**	**% Benchmark**	**% Rate of Return**	**% Benchmark**
U.S. Equity	(a)	13.1%	14.8%	12.6%	13.3%	9.1%	10.2%
International Equity	(b)	9.9%	7.3%	7.6%	6.0%	2.6%	2.5%
Total Equity	**(c)**	**11.6%**	**10.7%**	**10.9%**	**9.4%**	**7.2%**	**5.8%**
Total Fixed Income	(d)	0.6%	-0.3%	3.0%	2.6%	5.4%	4.1%
Total Fixed Income	**(e)**	**0.6%**	**-0.3%**	**3.0%**	**2.6%**	**5.4%**	**4.1%**
Hedge Funds	(f)	2.9%	5.1%	3.4%	3.5%	2.0%	1.4%
Real Estate	(g)	7.6%	8.4%	9.7%	9.4%	n/a	n/a
Private Equity	(h)	18.2%	16.2%	13.8%	12.0%	n/a	n/a
Private Debt	(i)	8.5%	4.7%	8.0%	4.3%	n/a	n/a
Cash	(j)	1.2%	1.4%	0.3%	0.4%	n/a	n/a
Total Plan	**(k)**	**7.2%**	**7.4%**	**7.4%**	**7.2%**	**6.4%**	**6.3%**

Benchmarks:

(a) Russell 3000
(b) MSCI ACWI ex US
(c) MSCI ACWI
(d) Barclays Universal Index
(e) Barclays Universal Index
(f) HFRI Fund of Funds Composite Index
(g) NCREIF ODCE
(h) Cambridge Associates US All PE (1 Qtr. Lag)
(i) Credit Suisse Leveraged Loan (1 Qtr. Lag)
(j) 91-Day Treasury Bills
(k) Total Plan Policy Index

** Source: NEPC Investment Performance Analysis Report, June 30, 2018. NEPC uses a time-weighted performance calculation. Trailing time period returns are determined by geometrically linking the holding period returns, from the first full month after inception to the report date. Rates of Return are annualized when the time period is longer than a year.*

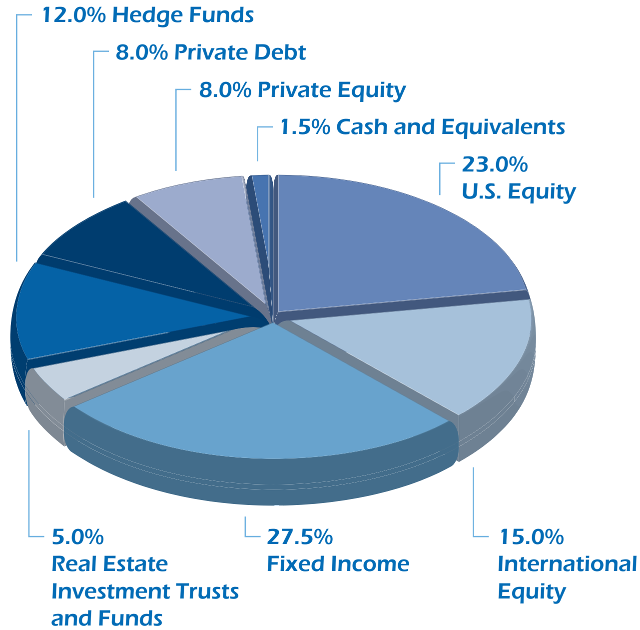
Asset Allocation

As of June 30, 2018

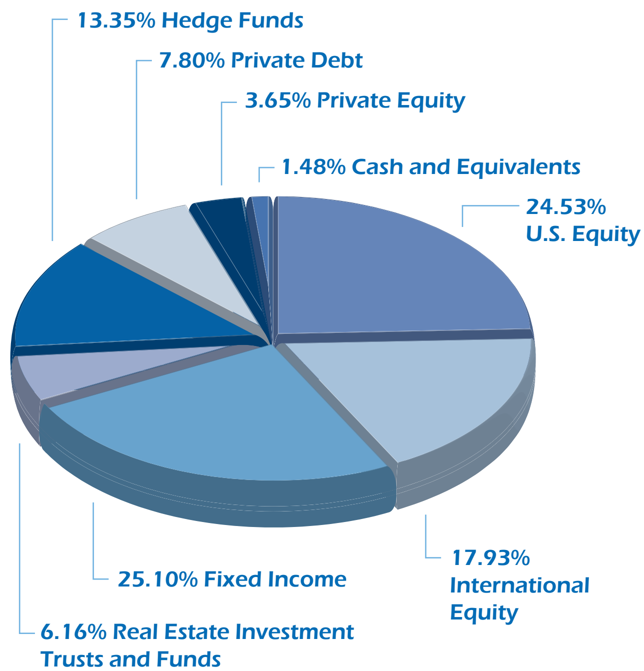
Asset Class	Target Allocation	Actual Allocation*
U.S. Equity		
Large Cap Passive U.S. Equities	13.00%	15.01%
Large Cap U.S. Value	5.00%	3.94%
SMID Cap Growth U.S. Equities	5.00%	5.58%
Total	**23.00%**	**24.53%**
International Equity		
Developed International Equities	8.00%	13.00%
Emerging International Equities	7.00%	4.93%
Total	**15.00%**	**17.93%**
Fixed Income		
Global Multi-Sector Fixed Income	22.50%	20.87%
Opportunistic Fixed Income	5.00%	4.23%
Total	**27.50%**	**25.10%**
Other		
Hedge Funds	12.00%	13.35%
Private Equity	8.00%	3.65%
Private Debt	8.00%	7.80%
Real Estate Investment Trusts and Funds	5.00%	6.16%
Total	**33.00%**	**30.96%**
Cash and Equivalents	1.50%	1.48%
Total	**1.50%**	**1.48%**
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, 2018

Description	Share/Par	Fair Value
JP Morgan Chase and Company	5,900	$614,780
Cisco Systems Inc.	13,700	589,511
Citigroup Inc.	8,800	588,896
Bank of America Corporation	20,400	575,076
Intel Corporation	11,400	566,694
Pfizer Inc.	15,600	565,968
Exxon Mobil Corporation	6,400	529,472
Valero Energy Corporation	3,600	398,988
Chevron Corporation	3,100	391,933
Johnson & Johnson	3,200	388,288
Total Ten Largest Equity Holdings		**$5,209,606**

Fair Value of Cash, Investment Payables & Receivables, and Investments, June 30, 2018	**$580,858,096**
Percentage of Ten Largest Equity Holdings	**0.90%**

A complete listing of the holdings at June 30, 2018 is available from the RRS's executive office.

Ten Largest Fixed Income Holdings at June 30, 2018

Description	Share/Par	Fair Value
U.S Treasury Notes 1.125% due 28 Feb 2021	1,350,000	$1,298,903
U.S Treasury Notes 2% due 15 Nov 2021	1,300,000	1,272,726
U.S Treasury Notes 1.625% due 15 Feb 2026	1,050,000	963,291
Fannie Mae Mortgage Pass-Through 3.5% due 13 Aug 2048	875,000	869,794
Freddie Mac Mortgage Pass-Through 3.5% due 13 Aug 2048	725,000	720,375
U.S Treasury Notes 3% due 15 Nov 2045	550,000	551,936
Freddie Mac Mortgage Pass-Through 4% due 13 Aug 2048	525,000	534,361
Fannie Mae Mortgage Pass-Through 3% due 13 Aug 2048	500,000	483,885
U.S Treasury Notes 1.5% due 15 Apr 2020	425,000	417,448
Freddie Mac Mortgage Pass-Through 3% due 13 Aug 2048	400,000	386,748
Total Ten Largest Fixed Income Holdings		**$7,499,467**

Fair Value of Cash, Investment Payables & Receivables, and Investments, June 30, 2018	**$580,858,096**
Percentage of Ten Largest Fixed Income Holdings	**1.29%**

A complete listing of the holdings at June 30, 2018 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, 2018

	Assets Under Management	Related Fees*
Investment Manager's Strategy		
U.S. Equities	$143,281,427	$253,748
Global Fixed Income	94,609,558	303,313
International Equities	104,730,927	422,068
Hedge Funds	77,992,802	-
Real Estate Investment Trusts and Funds	35,958,505	284,484
U.S. Fixed Income	27,256,398	127,221
Private Debt	45,537,178	-
Opportunistic Fixed Income	24,730,981	187,207
Private Equity	21,293,255	-
Total Long-Term Investments	**575,391,031**	**1,578,041**
Cash and Cash Equivalents	8,893,458	24,477
Total Investments	**584,284,489**	**1,602,518**
Net Cash Collateral from Securities Lending	670,173	-
Investment Payables	(11,689,312)	-
Investment Receivables	7,584,482	-
Other Receivables	8,264	-
Total	**$580,858,096**	**$1,602,518**

Other Investment Service Fees	
Consultant	$ 305,549
Custodian	259,114
Securities Lending Agent	7,247
Total Investment Service Fees	**$2,174,428**

**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.*

Investment Summary

As of June 30, 2018	Fair Value	% of Total Fair Value
Equities		
U.S. Equities		
Information Technology	$2,984,606	0.51%
Consumer	3,724,252	0.64%
Financial	5,492,680	0.94%
Healthcare	2,926,269	0.50%
Industrials	1,386,461	0.24%
Energy	1,797,316	0.31%
Utilities	1,127,199	0.19%
Telecommunications	621,036	0.11%
Materials	1,548,458	0.27%
Other/Commingled Funds	117,809,466	20.16%
Total U.S. Equities	**139,417,743**	**23.86%**
International Equities	104,730,927	17.92%
Total Equities	**244,148,670**	**41.79%**
Fixed Income		
U.S. Fixed Income		
Corporate Bonds	8,290,775	1.42%
Mortgage Pass-Through	5,247,224	0.90%
U.S Treasury	5,150,304	0.88%
CMO	2,698,538	0.46%
Asset Backed	1,151,734	0.20%
Other	4,717,823	0.81%
Total U.S. Fixed Income	**27,256,398**	**4.66%**
Global Fixed Income	98,473,242	16.85%
Opportunistic Fixed Income	24,730,981	4.23%
Total Fixed Income	**150,460,621**	**25.75%**
Other Investments		
Hedge Funds	77,992,802	13.35%
Real Estate and Related Debt	35,958,505	6.15%
Private Debt	45,537,178	7.79%
Private Equity	21,293,255	3.64%
Total Other Investments	**180,781,740**	**30.94%**
Total Investments	**575,391,031**	**98.48%**
Short-Term Investments		
Cash and Cash Equivalents	**8,893,458**	**1.52%**
Total Investments and Cash Equivalents	**$584,284,489**	**100.00%**

**May not add to 100% due to rounding.*


Virginia War Memorial

Clock on Main Street Station

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

SAGE VIEW

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

October 1, 2018

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, 2018, 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 4% per year for Police/Fire employees and level contributions for General employees.

The July 1, 2018 valuation develops contribution rates for the fiscal year ending June 30, 2020. These contribution rates, which are based on the covered payroll as of July 1, 2018, are as follows:

	General Employees	Police & Fire	Total
Beginning of Year	46.50%	40.18%	42.97%
Bi-Weekly	48.21%	41.66%	44.55%

The above rates should be adjusted to reflect the actual budgeted payroll for the fiscal year ending June 30, 2020 if it is different than the covered payroll on which they are based.

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

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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, 2018 and June 30, 2017 is as follows:

	June 30, 2018	June 30, 2017
Total Pension Liability	$874,789,363	$863,992,966
Fiduciary Net Position	$569,085,310	$552,712,561
Net Pension Liability	$305,704,053	$311,280,405
Fiduciary Net Position as a Percentage of Total Pension Liability	65.1%	64.0%

Legislative and Administrative Changes

There were no legislative or administrative changes during the fiscal year ended June 30, 2018.

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, 2013. This study resulted in the Board adopting several changes in assumptions, at the recommendation of the actuary, in order to better anticipate emerging experience. The Board also adopted the Entry Age actuarial cost method (required under GASB 67 for financial reporting purposes) for purposes of determining contribution rates. Previously the Projected Unit Credit method was used. Finally, the Board reviewed the investment return assumption and voted to maintain the current 7.5% assumption.

The unfunded actuarial liability as of July 1, 2006 is being amortized over a period of 20 years; subsequent changes in unfunded actuarial liability (with the exception of changes due to COLA) are also being amortized over a period of 20 years, with contributions increasing 4% per year for Police & Fire employees and level contributions for General employees. Increases in unfunded actuarial liability due to COLA are funded via a first year lump sum payment with the remaining increase amortized over a period of five to ten years. The portion funded via a lump sum and the portion amortized are based on the System's funded status in accordance with a schedule adopted by the Board of Trustees. As of the valuation date all prior ad hoc COLA amounts are fully amortized.

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.

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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.

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

William M. Dowd, FCA, EA
Managing Principal

William J. Reid, FCA, EA
Principal

Actuarial Assumptions and Methods

Actuarial Cost Method

For fiscal year ended June 30, 2018 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, 2016 valuation developed contribution rates for the fiscal year ending June 30, 2018 using the Entry Age Actuarial Cost Method.

The investment return assumption of 7.5% was adopted July 1, 2011. Other actuarial assumptions and methods are as follows:

Actuarial Assumptions

Interest

7.5% per annum,
compounded annually.

Mortality

Active Lives and Service Retirements

General Employees:
RP–2000 Mortality Table with 2-year set-forward for males

Police and Fire Employees:
RP–2000 Mortality Table

Disabled Lives

General Employees:
PBGC disabled life table for retirees receiving Social Security

Police and Fire Employees:
PBGC disabled life table for retirees not receiving Social Security

Turnover

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

Age	Rate
25	0.1668
35	0.1039
45	0.0574
55	0.0219
60	0.0137

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

Age	Rate
25	0.0567
35	0.0310
45	0.0068
55	0.0011
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
55-57	0.030
58-59	0.060
60	0.030
61	0.090
62	0.200
63	0.100
64	0.200
65	0.250
66-70	0.300
71-74	0.500
75	1.000

Police and Fire Employees: A select and ultimate table with the following typical rates; 40% for the first year in which the employee is eligible for unreduced immediate retirement benefits, and:

Age	Rate
50	0.090
51-54	0.120
55-56	0.150
57-58	0.090
59-63	0.500
64	1.000

Disability

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

Age	Rate
25	0.000436
35	0.000436
45	0.001169
55	0.003429
60	0.004900

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

Age	Rate
25	0.000172
35	0.000172
45	0.000615
55	0.002707

Duty Disability

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

Age	Rate
25	0.000037
35	0.000037
45	0.000130
55	0.000573

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

Age	Rate
25	0.000163
35	0.000244
45	0.000871
55	0.003835

Salary Increases

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

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

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

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

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 7.5% was used. The resulting actuarial asset value cannot be less than 90% or greater than 110% of market value.

Schedule of Active Members Valuation Data

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

Valuation Date	Members	Annual Payroll	Average Salary	Percent Increase (Decrease)
6/30/18	**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
6/30/09	1,778	$88,214	$50	3.7

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

Valuation Date	Members	Annual Payroll	Average Salary	Percent Increase (Decrease)
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	1,005	$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
6/30/09	1,004	$57,654	$57	4.4

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

Valuation Date	Members	Annual Payroll	Average Salary	Percent Increase (Decrease)
6/30/18	**2,179**	**$112,220**	**$52**	**1.5**
6/30/17	2,051	$104,053	$51	1.3
6/30/16	1938	$97,097	$50	0.2
6/30/15	1,890	$94,457	$50	3.4
6/30/14	1,865	$90,102	$48	0.0
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
6/30/09	1,614	$74,938	$46	3.1

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
6/30/18	**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	$2,885	153	$1,630	4,131	$64,341	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%
6/30/09	159	$1,703	117	$1,123	3,963	$58,512	1.0%	$15	142.5%	40.1%

Analysis of Financial Experience

Reasons for Change in the Unfunded Actuarial Liability

The unfunded actuarial liability was $305,704,053 as of June 30, 2018 versus $311,280,405 at June 30, 2017. The decrease from the prior year is primarily due to higher employer contributions and actual investment return on the value of assets being close to the expected return.

Reasons for Change in Funded Status

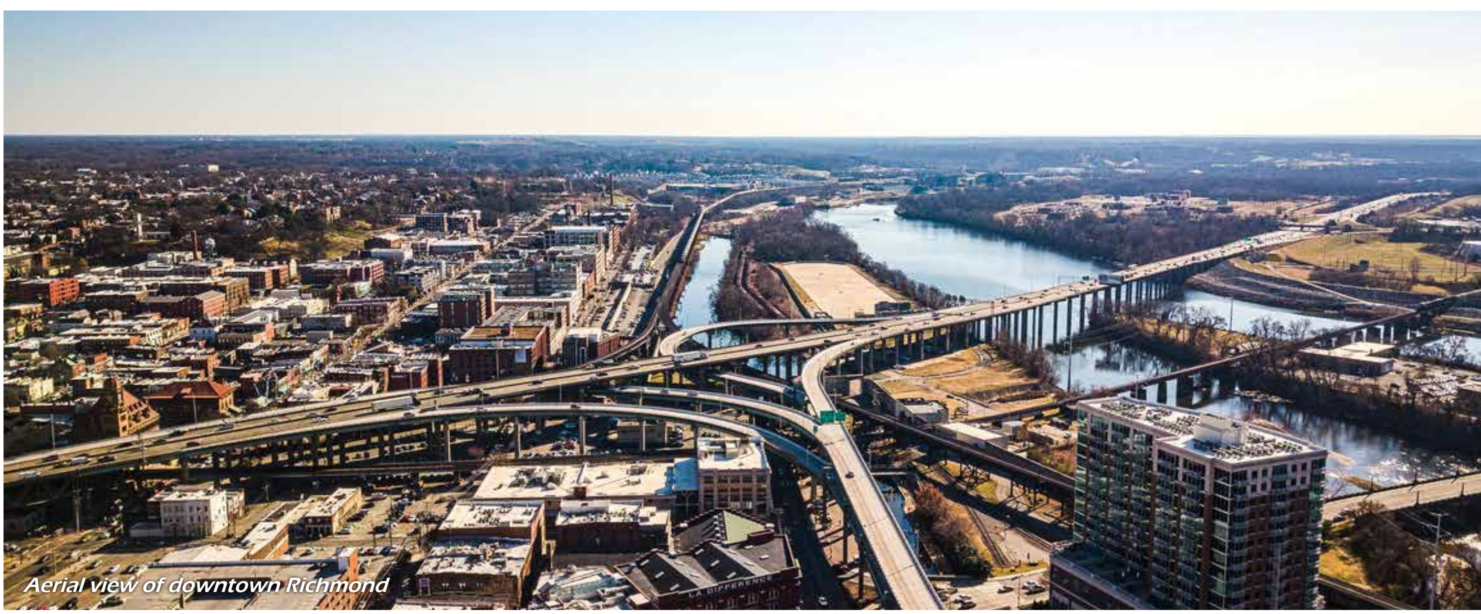
The funded status increased from 64.0% as of June 30, 2017 to 65.1% as of June 30, 2018. The increase from the prior year is primarily due to higher employer contributions and actual investment return on the value of assets being close to the expected return.

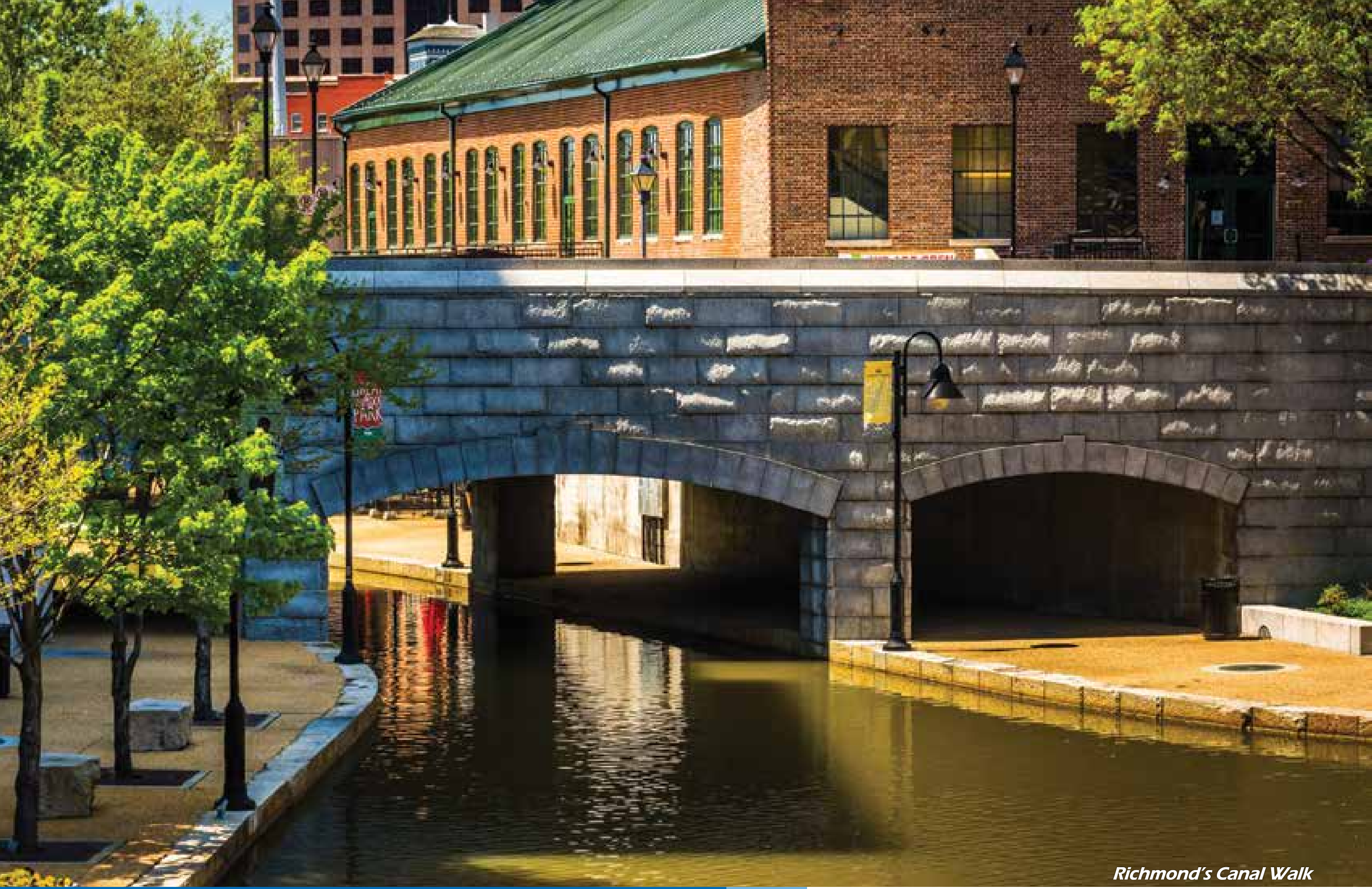
Information for plan provisions regarding benefits can be found in Note IV beginning on page 29. Additionally, the assumptions methods used in the actuarial valuation can be found in Note V beginning on page 33 and in the required supplementary information. Actuarial assumptions used for funding purposes 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 37.86% for the fiscal year ending June 30, 2017 to 40.29% for the fiscal year ending June 30, 2018. The increase of 2.43% is due to the following reasons:

Contribution Rate Fiscal Year Ended 2017	**37.86%**
Increase due to investment loss on actuarial value of assets:	0.56%
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	1.18%
Increase due to other experience factors:	0.69%
Total:	**2.43%**
Contribution Rate Fiscal Year Ended 2018	**40.29%**


Aerial view of downtown Richmond



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

Pension Trust Fund *(Dollars in Thousands)*

For the year ended June 30

	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Net Position Available — Beginning of Year	**$552,713**	**$515,254**	**$540,061**	**$544,904**	**$492,619**	**$461,761**	**$489,987**	**$417,669**	**$386,358**	**$511,657**
Additions										
Employer Contributions	**46,549**	**42,911**	44,926	46,537	42,295	40,402	38,884	39,718	32,079	33,192
Member Contributions	**1,963**	**2,151**	1,976	2,347	2,118	2,093	2,217	2,421	2,486	2,579
Investment Income (Loss)	**38,843**	**62,841**	(1,498)	15,641	76,463	54,219	1,896	93,770	59,128	(97,507)
Total Additions	**87,355**	**107,903**	**45,404**	**64,525**	**120,876**	**96,714**	**42,997**	**135,909**	**93,693**	**(61,735)**
Deductions										
Benefit Payments	**69,707**	**69,186**	68,846	68,140	67,274	64,673	70,037	62,392	61,222	62,835
Refunds	**68**	**117**	203	128	47	102	49	81	118	102
Administrative/Depreciation Expenses	**1,208**	**1,141**	1,162	1,100	1,270	1,081	1,135	1,117	1,043	1,046
Total Deductions	**70,983**	**70,444**	**70,211**	**69,368**	**68,591**	**65,856**	**71,221**	**63,590**	**62,383**	**63,983**
Change in Net Position	**16,372**	**37,459**	**(24,807)**	**(4,843)**	**52,285**	**30,858**	**(28,225)**	**72,318**	**31,310**	**(125,719)**
Net Position Available — End of Year	**$569,085**	**$552,713**	**$515,254**	**$540,061**	**$544,904**	**$492,619**	**$461,761**	**$489,987**	**$417,669**	**$386,359**

Schedule of Retirees and Beneficiaries *June 30, 2018*

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	355	-	20	323	11	1	-	-	311	14	2	6	0	22
$101-$200	356	4	34	306	6	1	1	4	290	22	3	2	2	37
$201-$300	243	14	52	158	7	1	9	2	190	13	0	6	2	32
$301-$400	234	8	84	114	10	-	11	7	163	15	1	3	2	50
$401-$500	191	16	67	79	3	5	19	2	135	10	0	1	0	45
$501-$600	182	14	73	65	10	7	11	2	122	3	1	7	2	47
$601-$700	155	13	77	46	7	1	9	2	101	4	0	4	3	43
$701-$800	137	15	70	28	8	1	14	1	79	3	1	2	0	52
$801-$900	133	14	71	19	11	6	10	2	76	5	1	2	2	47
$901-$1000	127	17	73	17	1	5	11	3	67	3	0	2	4	51
Over $1000	2,205	346	1,592	58	40	94	74	1	1,467	133	47	104	93	361
Total	**4,318**	**461**	**2,213**	**1,213**	**114**	**122**	**169**	**26**	**3,001**	**225**	**56**	**139**	**110**	**787**

[1]Types 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.

[2]Option Selected

LIFE — Basic Benefit

Option 1 — 100% Joint and Survivor Benefit

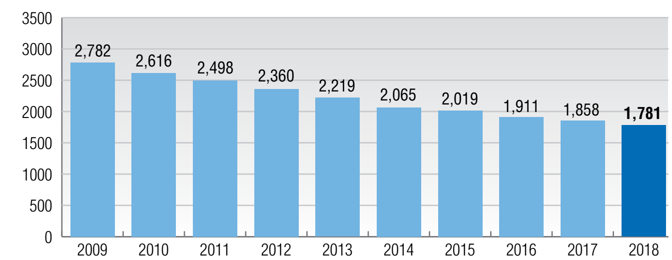
Option 2 — 75% Joint and Survivor Benefit

Option 3 — 50% Joint and Survivor Benefit

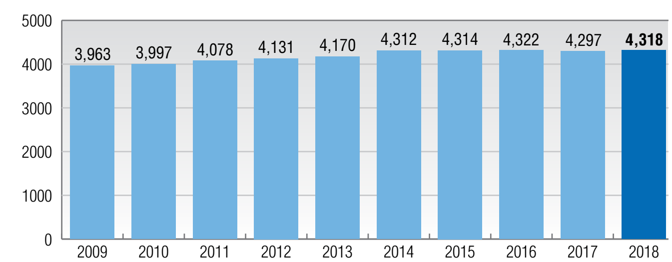
Option 4 — 25% Joint and Survivor Benefit

Option 5 — Social Security (Smooth-Out)

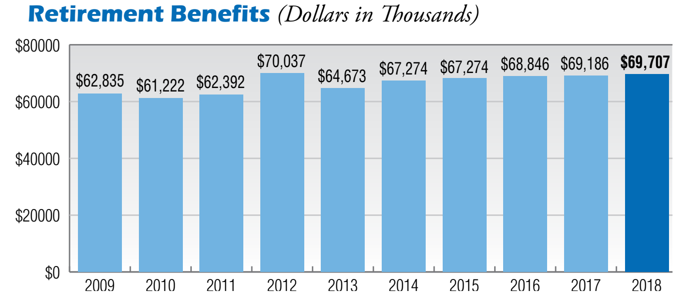
Number of Active Defined Benefit Plan Members



Number of Retirees and Beneficiaries



Retirement Benefits *(Dollars in Thousands)*



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

	2018		2008	
Participating Employer and Component Unit	**Covered Employees**	**Percentage of Total System**	**Covered Employees**	**Percentage of Total System**
City of Richmond	1,754	98.5%	2,800	97.3%
Richmond Behavioral Health Authority	27	1.5%	78	2.7%
Total	**1,781**	**100.0%**	**2,878**	**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.

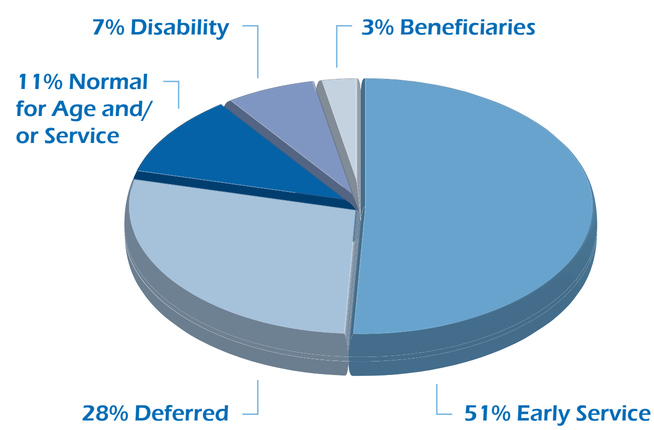
Social Security (Smooth-Out) Option

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.

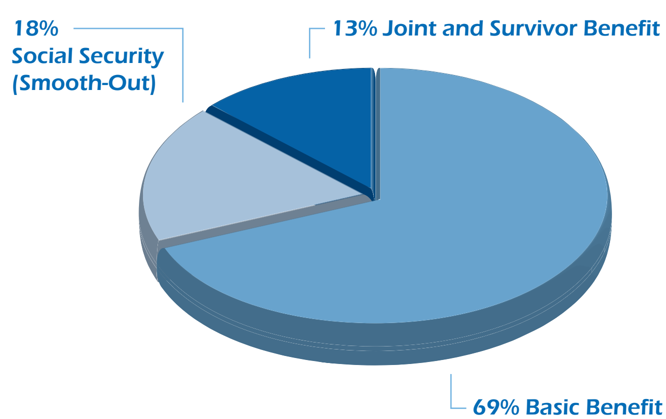
Joint and Survivor Benefit Option

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, 2009 to June 30, 2018

	Years of Creditable Service						
	0-5	5-10	10-15	15-20	20-25	25-30	30+
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
FY 2009							
Average monthly benefit	$0	$177	$538	$812	$1,307	$2,674	$2,396
Average final salary	$0	$22,323	$34,916	$37,829	$42,471	$60,212	$46,044
Number of retired members	0	41	21	17	16	20	36

Schedule of Membership *June 30, 2018*

Active Defined Benefit Plan Members — By Departments and Agencies		
Animal Care & Control		2
Assessor of Real Estate		7
City Auditor		2
City Clerk		2
City Council		3
Department of Community Wealth Building		1
Department of Budget & Strategic Planning		3
Department of Community Development		29
Department of Economic Development		7
Department of Emergency Communications		14
Department of Finance		17
Department of Fire & Emergency Services		337
General Employees	4	
Firefighters	333	
Department of Health		1
Department of Human Resources		7
Department of Information Technology		16
Department of Parks, Recreations & Community Facilities		75
Department of Procurement Services		2
Department of Public Utilities		221
Department of Public Works		152
Department of Social Services		95
Juvenile Justice Services		18
Law Department		11
Office of the Chief Administrative Officer		2
Minority Business Enterprise		1
Office of the Mayor		2
Public Library		25
Richmond Behavioral Health Authority		27
Richmond Police Department		698
General Employees	50	
Police Officers	648	
Richmond Public Schools		1
Richmond Retirement System		1
Human Services		2
Total		**1,781**
Retired Members		
General Employees		3,062
Police & Fire Employees		1,251
City Council Members		5
Total		**4,318**
Terminated Vested Defined Benefit Plan Members		
General Employees		1,350
Police & Fire Employees		253
City Council Members		-
Total		**1,603**
Active Defined Contribution 401(a) Plan Members		
General Employees		2,131
Police & Fire Employees		48
Total		**2,179**
Terminated Vested Defined Contribution 401(a) Plan members		304
Total Membership		**10,185**

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Richmond Retirement System

RRS

Building your financial future