

EMPLOYEES' RETIREMENT SYSTEM

A Pension Trust Fund of Fairfax County, 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



Three systems...
one team.

A Pension Trust Fund of Fairfax County, Virginia

This report was prepared by the financial, administrative and investment staff of the Fairfax County Employees' Retirement System.

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County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

November 5, 2018

Dear Members of the Board of Trustees:

I am pleased to submit to you the annual report of the Fairfax County Employees' Retirement System (System) for the fiscal year ended June 30, 2018. This annual report is provided as an aid to understanding the structure and evaluating the status of the System. The System's management is responsible for the accuracy of financial information contained herein. The Management's Discussion and Analysis provides further detail to the financial statements.

History

The Fairfax County Supplemental Retirement System was established on July 1, 1955. On February 26, 2001, the name of the System was changed to the Fairfax County Employees' Retirement System. In previous years, Fairfax County Employees' Retirement System reported the plan as a cost-sharing multiple employer defined benefit plan. The System is considered as a single employer public employee retirement system providing defined benefit pension plan coverage to full-time and certain part-time Fairfax County and Fairfax County Public Schools employees who are not covered by the Fairfax County Police Officers Retirement System, the Fairfax County Uniformed Retirement System, the Educational Employees' Supplementary Retirement System of Fairfax County (ERFC) or the Virginia Retirement System (VRS). There were 13,904 active members, 858 in the Deferred Retirement Option Program (DROP), 2,269 terminated vested, and 8,989 retirees participating in the System as of June 30, 2018. For calculations surrounding the Total Pension Liability and its components, Cheiron, the System's actuary, used June 30, 2018, as the measurement date which coincides with the actuarial valuation date.

Provisions

The benefit provisions of the System are established by County Ordinance. The System provides normal service retirement and early service retirement benefits for members who attain age or service requirements. Coverage for service-connected disability benefits is immediate upon membership in the System. Ordinary (non-service-related) disability benefits are provided after the attainment of five years of service. Members are vested after five years of service and are eligible for benefits at the early or normal service retirement date.

Capital Markets and Economic Conditions

In fiscal year 2018, the System's investment returns reflected the continuing and long equity bull market. The System's portfolio investment return for the year was 8.03 percent (7.28 percent, net of fees), slightly surpassing the long term return target of 7.25 percent. This return placed in the 67th percentile of the BNY Mellon Universe of public funds. Over the long term, returns compared more favorably, with investment returns for the ten-year period at 6.6 percent per year, ranking the fund in the 55th percentile of all other public funds in the BNY Mellon Universe. Additional details on the markets and the System's investments are provided in the Investment Section.

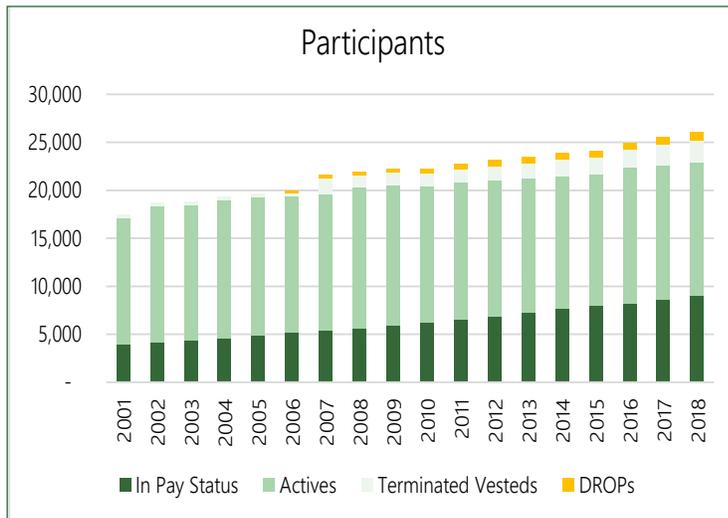


Fairfax County Retirement Systems

12015 Lee Jackson Memorial Hwy, Suite 350, Fairfax, VA 22033

Phone: 703-279-8200 * 1-800-333-1633 * Fax: 703-273-3185

www.fairfaxcounty.gov/retirement/



Internal and Budgetary Controls

The System’s management is responsible for the financial information presented in this report in accordance with U.S. Generally Accepted Accounting Principles. Proper internal accounting controls exist to provide reasonable, but not absolute, assurance for both the safekeeping of assets and the fair presentation of the financial statements. The concept of reasonable assurance recognizes that the cost of a control should not exceed the benefits likely to be derived and that the valuation of costs and benefits requires estimates and judgments by management.

Investment Policies and Strategies

The Board of Trustees has an adopted Statement of Investment Objectives and Policy. This Statement establishes the investment goals, guidelines, constraints and performance standards that the Board of Trustees uses when exercising its fiduciary duties to manage the investment assets of the System. The Board operates in conformity with the standard of care required in making investments as stated in the Code of Virginia §51.1-803. Please see Note 3 in the Financial Section of this report for a description of this standard of care and details on the System’s investment policies and strategies.

The Board receives quarterly reporting from staff to ensure compliance with its stated objectives and policy. Staff also monitors the performance of the System and its investment managers and updates the Board on a monthly basis throughout the year. Rate of return information is included in the Investment Section prepared internally by staff using data from the System and investment managers.

Securities of the System, except for the pooled funds and the County’s pooled cash and temporary investments, are held in safekeeping, on the System’s behalf, by BNY Mellon Asset Servicing as agent. The BNY Mellon Financial Corporation, the parent company, carries Financial Institution bond insurance coverage including a Computer Crime Policy. An additional Excess Securities policy covers all risk of physical loss to securities.

Funded Status

An actuarial valuation of the System to determine funding requirements is performed annually. The System’s funding policy provides for periodic employer contributions at actuarially determined rates, which are calculated as a percentage of covered payroll, and are adjusted as necessary to accumulate sufficient assets to meet the costs of benefit payments when due. As of the latest annual valuation, performed as of June 30, 2018, the ratio of the market value of assets to total actuarial accrued liabilities for benefits increased from 69.9 percent to 70.5 percent. The actuarial section contains further information on the results of the June 30, 2018, valuation.

Based on the June 30, 2016, actuarial valuation, the employer contribution rate for 2018 following the adopted corridor-based funding policy was 25.29 percent, an increase of 2.39 percent from the 2017 rate of 22.9 percent. This was done to improve the funded level of the plan, accomplished by raising the target unfunded liability amortization level from 95 percent to 98 percent, and to fund an increase in service-connected disability benefits.

Major Initiatives

Working in concert with the County's Chief Financial Officer, the System's actuary (Cheiron) and other County staff, efforts continue to improve the funded status of the Plan. As a result of this work, and as referenced above, the County has increased the employer contribution rate above what was required by the adopted corridor-based funding policy for three consecutive years.

In an effort to improve financial transparency, staff completed a major effort to account for all investment management and performance fees paid to investment management firms. While manager's investment performance has traditionally been evaluated net of these fees, the fees themselves were only previously reported for separately managed accounts.

This year, staff initiated a major retirement outreach effort, whereby members of the Retirement team go out to County agencies and select Schools departments to meet with members. These small group sessions are in the form of interactive discussions, presentations and limited one-on-one counseling sessions. The goal of these various activities is to ensure that members know what their retirement benefits are, to let them know about the funding and overall health of their retirement system and to address any concerns that they might have.

Awards

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to The Fairfax County Employees' Retirement System for its comprehensive annual financial report for the fiscal year ended June 30, 2017. This was the eighth consecutive year that the System has achieved this prestigious award. In order to be awarded a Certificate of Achievement, a government must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both Generally Accepted Accounting Principles and applicable legal requirements.

A Certificate of Achievement is valid for a period of one year only. We believe that our current annual financial report continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

Fairfax County Retirement Systems received the Public Pension Standards Award for the fiscal year ended June 30, 2018, from the Public Pension Coordinating Council (PPCC), in recognition of meeting the professional standards for plan funding as set forth in the Public Pensions Standards. The PPCC is a confederation of the National Association of the State Retirement Administrators (NASRA), the National Conference on Public Employee Retirement Systems (NCPERS) and the National Council on Teacher Retirement (NCTR).

Other Information

Independent Audit and Actuarial Certifications

Cherry Bekaert LLP performed an annual audit of the financial statements of the System to obtain reasonable assurance about whether the financial statements are free from material misstatements, whether due to fraud or error. Additionally, Cheiron performed an annual actuarial valuation to assess the plan's ability to meet future obligations. The report of independent auditor and certification from the actuary are included in this report.

Introductory Section

Acknowledgments

This report is intended to provide complete and reliable information for determining the financial status of the System. It is being submitted to the Board of Supervisors and other interested parties and is available to the public via the County's website located at www.fairfaxcounty.gov/retirement/.

This annual report for the Employees' Retirement System is the result of the hard work of the System's Accounting team, as assisted by other members of the Retirement Systems team.

I am very thankful and feel privileged to lead the Retirement Systems team. These fine people work every day to provide the best-possible service and stewardship for the employees, retirees and citizens of Fairfax County. Finally, I must express my deep appreciation, on behalf of the 26,020 members and beneficiaries of the Employees' Retirement System, for your dedicated service as trustees.

Respectfully submitted,



Jeffery K. Weiler
Executive Director



Government Finance Officers Association

**Certificate of
Achievement
for Excellence
in Financial
Reporting**

Presented to

**Fairfax County
Employees' Retirement System
Virginia**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2017

Christopher P. Morill

Executive Director/CEO



Public Pension Coordinating Council

***Recognition Award for Funding
2018***

Presented to

***Fairfax County Employees'
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)

A handwritten signature in black ink that reads "Alan H. Winkle". The signature is written in a cursive style.

Alan H. Winkle
Program Administrator

Board of Trustees

Ten members serve on the Fairfax County Employees' Retirement System Board of Trustees. Four of the members are citizens appointed by the Fairfax County Board of Supervisors. Three of the members are elected by Fairfax County Government employees, Fairfax County Public Schools employees, and Fairfax County retirees respectively. The Director of Human Resources, the Director of Finance, and the Coordinator from the Office of Benefit Services, Fairfax County Public Schools serve as Ex Officio members.



Robert C. Carlson - *Chairman*
Board of Supervisors Appointee
Term Expires: July 30, 2020



John M. Yeatman - *Vice Chairman*
Elected Retiree Trustee
Term Expires: December 31, 2018



Christopher J. Pietsch - *Treasurer*
Ex officio Trustee
Fairfax County Director of Finance



Randy Creller - Elected Member Trustee
Fairfax County Government
Term Expires: June 30, 2021



Terry Kellogg - Ex officio Trustee
Office of Benefit Services
Fairfax County Public Schools



Jon A. Miskell, Jr.
Board of Supervisors Appointee
Term Expires: July 31, 2022



Kevin North
Board of Supervisors Appointee
Term Expires: July 31, 2021



Catherine Spage
Ex officio Trustee
Fairfax County Director of Human Resources



David Swan - Elected Member Trustee
Fairfax County Public Schools
Term Expires: June 30, 2019



Gordon R. Trapnell, FSA
Board of Supervisors Appointee
Term Expires: June 30, 2019

Administrative Organization

Administrative Staff

Jeffrey K. Weiler
Executive Director

Andrew J. Spellar
Chief Investment Officer

Investment Managers

Aberdeen Asset Management Inc
Philadelphia, PA

AlphaSimplex
Cambridge, MA

AQR Capital Management
Greenwich, CT

Axiom International Small Cap
Greenwich, CT

BlackRock, Inc
San Francisco, CA

Brandywine Global Invest. Management, LLC
Philadelphia, PA

Bridgewater Associates, Inc
Westport, CT

Capstone
New York, NY

Cohen & Steers Capital Management, Inc
New York, NY

Crestline Management
Fort Worth, TX

Czech Asset Management, LP
Old Greenwich, CT

DePrince, Race & Zollo
Winter Park, FL

DWS
Chicago, IL

DoubleLine Capital, LP
Los Angeles, CA

Hoisington Management
Austin, TX

JP Morgan Investment Management, Inc
New York, NY

Landmark Partners
Boston, MA

Lazard Asset Management, LLC
New York, NY

Investment Managers

Marathon Asset Management, LLP
London, UK

Marathon Asset Management, LP
New York, NY

Millennium Management, LLC
New York, NY

Neuberger Berman Group, LLC
New York, NY

Parametric Portfolio Associates
Edina, MN

PIMCO
Newport Beach, CA

Pinnacle
New York, NY

Post Advisory Group, LLC
Los Angeles, CA

QMS Capital Management, LP
Durham, NC

Sands Capital Management, Inc
Arlington, VA

Shenkman Capital Management, Inc
New York, NY

Standish Mellon Asset Management
Pittsburgh, PA

WCM Investment Management
Laguna Beach, CA

Professional Services

Actuary
Cheiron
Actuaries
McLean, VA

Auditor
Cherry Bekaert, LLP
Certified Public Accountants
Tysons Corner, VA

Custodian Bank
BNY Mellon Asset Servicing
Pittsburgh, PA

Legal Counsel
Morgan, Lewis & Bockius LLP
Washington, DC

Schedule of fees and schedule of commissions are located in the Investment Section, pages 55-56.

Organization Chart



Board of Supervisors

Daniel G. Storck, John C. Cook, Catherine M. Hudgins, Jeffrey C. McKay, Sharon Bulova (Chairman At-Large), County Executive Bryan Hill, Penelope A. Gross (Vice Chairman), John W. Foust, Kathy L. Smith, Linda Q. Smyth, Pat Herryty

Board of Trustees

*(Ten Members – see page 7)
Robert C. Carlson, Randy Creller, Terry Kellogg, Jon A. Miskell, Kevin L. North, Christopher J. Pietsch, Catherine Spage, David T. Swan, Gordon R. Trapnell, John M. Yeatman*



Executive Director
Jeff Weiler



Chief Investment Officer
Andrew J. Spellar



Investment Operations Manager
Jennifer Snyder



Investment Analyst
Damien Lee, CFA



Retirement Systems Management Team
*Back left to right: Wendy Zhi, CPA, Retiree Services; Vicky Panlaqui, Accounting and Financial Reporting; Pamela Taylor, Technology
Front: John Prather, Membership Services; Carol Patterson, Communications*



Report of Independent Auditor

To Board of Supervisors
County of Fairfax, Virginia

To the Board of Trustees
Fairfax County Employees' Retirement System

Report on the Financial Statements

We have audited the accompanying basic financial statements of the Fairfax County Employees' Retirement System (the "System"), a pension trust fund of the County of Fairfax, Virginia, a pension trust fund of the County of Fairfax, Virginia, as of and for the year ended June 30, 2018, and the related notes to the financial statements, as listed in the table of contents.

Management's Responsibility for the Financial Statements

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

Auditor's Responsibility

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

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

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

Opinion

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

Other Matters

Required Supplementary Information

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

Other 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 introduction section, schedule of administrative expenses, schedule of investment expenses, schedule of consultant expenses, investment section, actuarial section, and statistical section are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The schedule of administrative expenses, schedule of investment expenses, and schedule of consultant expenses are the responsibility of management and were derived from and relate 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 schedule of administrative expenses, schedule of investment expenses, and schedule of consultant expenses are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

The introduction section, investment section, actuarial section, and statistical section have 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 them.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated November 5, 2018, on our consideration of the System's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the System's internal control over financial reporting and compliance.



Tysons Corner, Virginia
November 5, 2018

Management's Discussion and Analysis (Unaudited)

This section presents management's discussion and analysis of the Fairfax County Employees' Retirement System's ("System" or "Plan") financial performance and provides an overview of the financial activities for the fiscal year ended June 30, 2018. The information in this section should be reviewed in conjunction with the Letter of Transmittal located in the Introductory Section.

Overview of Financial Statements and Accompanying Information

The financial presentation is composed of four parts: (1) the financial statements; (2) notes to the financial statements; (3) required supplementary information and (4) other supplementary information. Below is the summary of the information provided in each of these sections.

Financial Statements

The System presents the Statement of Fiduciary Net Position as of June 30, 2018 and Statement of Changes in Fiduciary Net Position for the fiscal year ended June 30, 2018. The Statement of Fiduciary Net Position provides a snapshot of the financial position. It reports the assets, liabilities and resulting net position restricted for pension benefits. The Statement of Changes in Fiduciary Net Position presents the Plan's transactions under the categories of Additions and Deductions. Additions include contributions from the County and by participating employees, net appreciation in the fair value of investments, dividend and interest income. Investment income is reduced by investment-related expenses such as asset management fees, custody charges and consulting fees. Deductions include outlays for monthly pension benefits, death benefits, refunds of contributions to employees and fees paid for professional services and administrative expenses.

Notes to the Financial Statements

The Notes to the Financial Statements are an integral part of the financial statements and include additional information and schedules to provide a better understanding of the fiduciary fund financial statements. The Notes to the Financial Statements include detailed information that is not readily evident in the financial statements such as the accounting policies, plan membership and benefits, and summary disclosures. Specifically:

- Note 1 Describes significant accounting policies.
- Note 2 Provides a description of the System, the funding policy, and member contributions and benefits.
- Note 3 Describes investments and disclosures on fair value hierarchy, interest rate, credit quality, foreign currency risk, derivatives disclosures, and security lending.
- Note 4 Describes the net pension liability, actuarial method and assumptions.
- Note 5 Explains the System's tax status.

Required Supplementary Information

This section consists of historical trend exhibits such as the Schedule of Changes in Net Pension Liability and Related Ratios, Schedule of Net Pension Liability, Schedule of Employer Contributions accompanied by the Notes to Schedule of Employer Contributions and Schedule of Money-Weighted Rate of Return. These schedules will be presented over 10 years as information becomes available. A Summary of Significant Changes to the Pension System is also included.

Other Supplementary Information

This section includes the Schedule of Administrative Expenses and the Schedule of Investment and Consultant Expenses. The Required Supplementary Information and Other Supplementary notes are immediately following the Notes to the Financial Statements.

Management’s Discussion and Analysis
(continued)

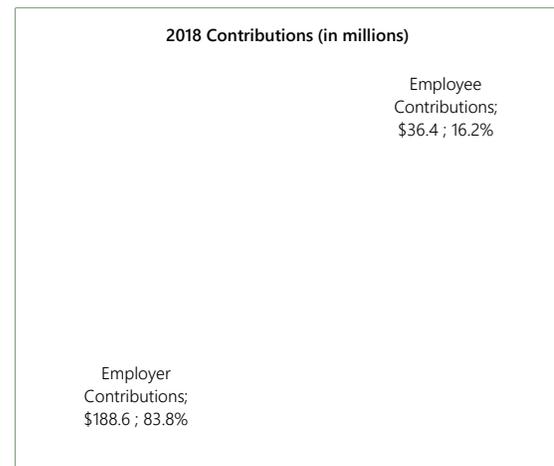
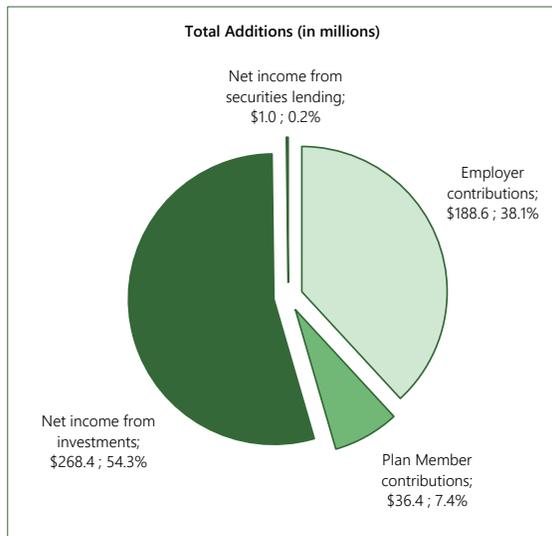
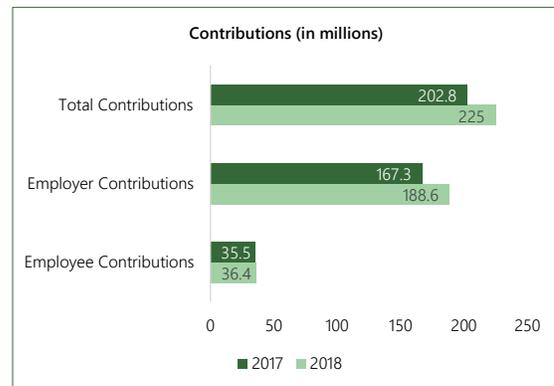
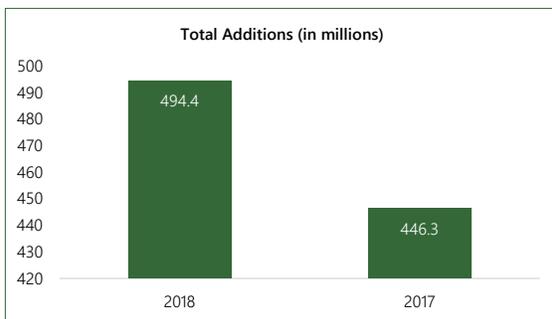
Financial Highlights

The net position restricted for pension benefits as of June 30, 2018, and June 30, 2017, was \$3,940.9 million and \$3,749.4 million, respectively. The net position representing assets available to pay for current and future member pension benefits, increased by \$191.5 million or 5.1 percent.

Total additions to net position increased by 10.8 percent from \$446.3 million in 2017 to \$494.4 million in 2018.

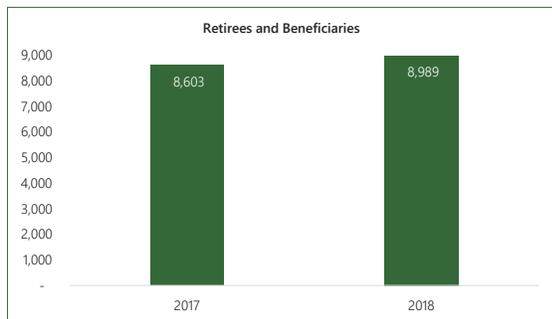
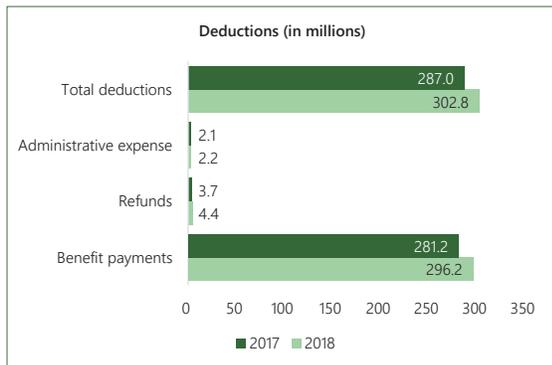
Net investment income increased by 10.6 percent from \$243.5 million in 2017 to 269.4 million in 2018. The net money-weighted rate of return on investments on a fair value basis was 7.3 percent in fiscal year 2018, and has increased from 6.9 percent in fiscal year 2017.

Employer and employee contributions received totaled \$225.0 million, an increase of 10.9 percent or \$22.2 million compared to 2017 received contributions of \$202.8 million. The employer contributions increased by 12.7 percent from \$167.3 million in fiscal year 2017 to \$188.6 million in fiscal year 2018.



Management’s Discussion and Analysis
(continued)

Total deductions from fiduciary net position increased by \$15.8 million from \$287.0 million in 2017 to \$302.8 million in 2018. Member retirement benefit payments of \$296.2 million in 2018 make up the majority of total deduction and increased by \$15.0 million or 5.3 percent from \$281.2 million in 2017. The number of retired members and beneficiaries receiving a benefit payment increased 4.5 percent from 8,603 to 8,989 payees as of June 30, 2018.



The net pension liability as calculated per GASB 67 as of June 30, 2018, and June 30, 2017, was \$1,650.3 million and \$1,618.3 million, respectively. The net position as a percentage of total pension liability as of June 30, 2018, and June 30, 2017, was 70.5 percent and 69.9 percent, respectively. The net pension liability as a percentage of covered payroll has decreased from 221.5 percent in fiscal year 2017 to 221.3 percent in fiscal year 2018. The covered payroll increased from \$730.6 million in 2017 to \$745.7 million in 2018.

	2018	2017
Net Pension Liability (in millions)	\$1,650.3	\$1,618.3
Net Position as Percentage of TPL	70.5%	69.9%
Covered Payroll (in millions)	\$745.7	\$730.6
Net Pension Liability as Percentage of Covered Payroll	221.3%	221.5%

Financial Analysis

Plan Net Position

When viewed over time, increases or decreases in plan net position can be used to measure the financial condition of a pension plan.

For fiscal year 2018, the net position of the Employees’ Retirement System increased 5.1 percent, resulting in a total net position value of \$3,940.9 million, reflecting an increase of \$191.5 million over fiscal year 2017.

Total assets as of June 30, 2018, were \$4,249.2 million, representing an increase of \$84.5 million, or 2.0 percent over the previous fiscal year. The main component of the increase was due to favorable market conditions that resulted in total cash and investment of \$3,934.8 million in fiscal year 2018 as compared to \$3,717.2 million in fiscal year 2017.

Receivables decreased by \$40.7 million or 18.1 percent due to the timing of investment for settled trades that occurred near year end.

Management's Discussion and Analysis

(continued)

The table below details the Employees' Retirement System's net position for the current and prior fiscal year.

Summary of Plan Fiduciary Net Position				
	2018	2017	Difference	Percentage of Change
Assets				
Total cash and investments	\$3,934,806,719	\$3,717,230,068	\$217,576,651	5.9%
Cash collateral, securities lending	129,947,304	222,297,561	(\$92,350,257)	-41.5%
Capital assets, net	53,376	0	53,376	100.0%
Total receivables	<u>184,385,747</u>	<u>225,135,926</u>	<u>(40,750,179)</u>	-18.1%
Total assets	4,249,193,146	4,164,663,555	84,529,591	2.0%
Liabilities				
Purchase of investments	(168,779,495)	(183,752,985)	<u>14,973,490</u>	-8.1%
Cash collateral, securities lending	(129,947,304)	(222,297,561)	<u>92,350,257</u>	-41.5%
Accounts payable and others	<u>(9,539,631)</u>	<u>(9,228,393)</u>	<u>(311,238)</u>	3.4%
Total liabilities	<u>(308,266,430)</u>	<u>(415,278,938)</u>	<u>107,012,508</u>	-25.8%
Net position restricted for pension benefits	<u>\$3,940,926,716</u>	<u>\$3,749,384,616</u>	<u>\$191,542,099</u>	5.1%

Net Position for Current and Prior Fiscal Year			
Fiscal Year	Ending Balances (millions)	Net Change in Dollars (millions)	Net Change in Percent
2018	\$3,940.9	\$191.5	5.1%
2017	\$3,749.4	\$159.3	4.4%

Total liabilities as of June 30, 2018, were \$308.3 million, representing a decrease of \$107.0 million, or 26.0 percent, over the previous year. The downturn in total liabilities is the result of a decreased level of securities lending activity. However, there was an 11.0 percent increase in the accrued liability, including the year-end accrual for management fees.

Securities lending cash collateral decreased by \$92.3 million or 41.5 percent due to a decrease in activities in the securities lending program.

	2018	2017	Difference	Percentage of Change
Accrued Liabilities	\$4,597,788	\$4,140,374	\$457,414	11.0%

The total assets of \$4,249.2 million exceeded its liabilities of \$308.3 million at the close of the Plan year ended June 30, 2018, with \$3,940.9 million in net position restricted for pension benefits.

The Plan's investments are exposed to various risks including interest rate, market and credit risks. These risks may be influenced by changes in economic conditions and market conditions. Therefore, it is reasonable to assume that there will be changes in the values of the investments held in trust which could materially affect the amounts reported in the financial statements. Detailed information on investment results are in the Investment Section of this report.

Management's Discussion and Analysis

(continued)

Summary of Additions and Deductions

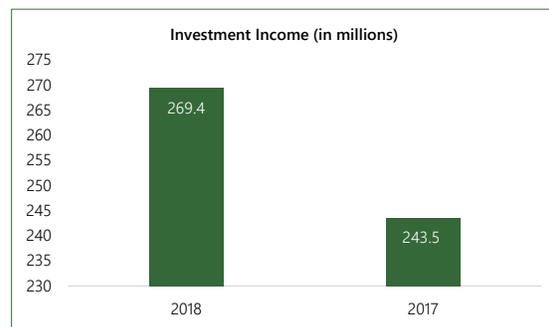
	2018	2017	Difference	Percentage of Change
Additions				
Employer contributions	\$188,578,414	\$167,311,608	\$21,266,806	12.7%
Plan Member contributions	36,357,591	35,476,023	881,568	2.5%
Net income from investments	268,377,071	242,629,189	25,747,882	10.6%
Net income from securities lending	<u>1,041,086</u>	<u>866,988</u>	<u>174,098</u>	<u>20.1%</u>
Total Additions	494,354,162	446,283,808	48,070,354	10.8%
Deductions				
Benefit payments	296,255,029	281,258,687	14,996,342	5.3%
Refunds	4,386,395	3,671,886	714,509	19.5%
Administrative expense	<u>2,170,638</u>	<u>2,050,848</u>	<u>119,790</u>	<u>5.8%</u>
Total deductions	<u>302,812,062</u>	<u>286,981,421</u>	<u>15,830,641</u>	<u>5.5%</u>
Net increase/(decrease)	<u>\$191,542,100</u>	<u>\$159,302,387</u>	<u>\$32,239,713</u>	<u>-20.2%</u>

Additions and Deductions

Total additions to the retirement fund consist of contributions from employers and active members and changes in the value of assets. Total additions increased by \$48.1 million or 10.8 percent in fiscal year 2018 attributed primarily due to \$25.7 million or 10.6 percent appreciation in the fair value of the investments. This upturn compared to previous year's investment performance was due to the favorable market environment in fiscal year 2018.

Total contributions for the fiscal year ended June 30, 2018, amounted to \$225.0 million. This was an increase of \$22.2 million when compared with the activity of fiscal year 2017. The employer contributions for fiscal year 2018 increased by 12.7 percent due primarily to an increase in the employer contribution rate from 22.90 percent to 25.29 percent of salary. Employee contributions increased by 2.5 percent, due to merit and 1.3 percent COLA increases.

The System experienced over 20 percent increase in net income from securities lending as a result of an upturn in lending securities activities during the fiscal year. Investment returns were higher for fiscal year 2018 than 2017 reflecting favorable returns in the capital markets. Net investment income rose from \$243.5 million in fiscal year 2017 to \$269.4 million in fiscal year 2018, which is consistent with the increase in the net money-weighted investment rate of return from 6.9 percent for fiscal year 2017 to 7.3 percent for fiscal year 2018.



Total deductions of the System consist of the payments of benefits to retirees and beneficiaries, the refund of contributions to former members and the cost of administering the System. The total deductions for fiscal year 2018 were \$302.8 million, an increase of \$15.8 million, or 5.5 percent, over fiscal year 2017. Regular pension benefit payments increased as the number of retirees and beneficiaries receiving benefit payments climbed to 8,989 from 8,603 in fiscal year 2017. Benefit payments also increased due to a cost-of-living increase of 1.3 percent and higher average benefits for new retirees. Refunds reflected a 19.5 percent increase due to higher employee turnover, separation in the current fiscal year, more employees asking for refunds or higher balance of refunded amount.

Management's Discussion and Analysis

Participant Count	2018	2017
Actives	13,904	13,986
DROP members	858	745
Terminated vesteds	2,269	2,207
Retirees in payment status	<u>8,989</u>	<u>8,603</u>
Total	<u>26,020</u>	<u>25,541</u>

An actuarial valuation is performed annually by Cheiron. The actuarial value of the assets as of the last valuation on June 30, 2018, was \$4,070.5 million, while actuarial liabilities as of the same period was \$5,591.2 million. As of June 30, 2018, the date of the most recent actuarial valuation, the funded ratio of the system was 72.8 percent. This was a decrease of 0.4 percent from the July 1, 2017, valuation funded ratio of 73.2 percent. The combination of liabilities, investment results and member and employer contributions over the last year led the funding ratio to a decrease. Under GASB 67 calculation, using the December 31, 2017, data rolled forward to June 30, 2018, the plan fiduciary net position as a percentage of the total pension liability was 70.5 percent. It increased from 69.9 percent in fiscal year 2017, primarily as a result of growth in the plan fiduciary net position due to investment returns. In addition, the Total Pension Liability as of June 30, 2018, and June 30, 2017, was \$5,591.2 million and \$5,367.7 million, respectively.

(Dollars in millions)	2018	2017
Actuarial Accrued Liability	\$5,591.2	\$5,367.7
Actuarial Value of Assets	<u>4,070.5</u>	<u>3,930.9</u>
Unfunded Actuarial Liability	<u>\$1,520.7</u>	<u>\$1,436.8</u>
Funding Ratio	72.8%	73.2%
Total Pension Liability	\$5,591.2	\$5,367.7
Plan Fiduciary Net Pension	<u>3,940.9</u>	<u>3,749.4</u>
Net Pension Liability	<u>\$1,650.3</u>	<u>\$1,618.3</u>
Funding Ratio	70.5%	69.9%

Investment Management Fees

Investment management fees were higher than the prior year due to a reclassification of management fees associated with commingled funds. In an effort to provide a greater level of transparency, investment managers for commingled funds were requested to provide the management fees, rather than netting the management fees against investment activities. The fees have not suddenly and significantly increased. This reclassification did not affect the net investment performance.

Contacting the System's Financial Management

This financial report is designed to provide our membership, the Board of Trustees and the County's Board of Supervisors with a general overview of the System's financial condition. If you have any questions about this report or need additional information, contact the Fairfax County Retirement System, 12015 Lee Jackson Memorial Highway, Fairfax VA 22033. This report can also be found on the County's internet site at www.fairfaxcounty.gov/retirement/.

Basic Financial Statements

Statement of Fiduciary Net Position

as of June 30, 2018

Assets

Cash and short-term investments

Equity in County's pooled cash and temporary investments	\$6,678,963	
Cash collateral received for securities on loan	129,947,304	
Short-term investments	<u>279,312,960</u>	
Total cash and short-term investments		\$415,939,227

Capital Assets

Building Improvements, net	21,791	
Equipment, net	<u>31,585</u>	
Total capital assets		53,376

Receivables

Accounts receivable	9,518,576	
Accrued interest and dividends	9,574,475	
Investment proceeds and other receivables	<u>165,292,696</u>	
Total receivables		184,385,747

Investments, at fair value

Common and preferred stock	865,717,015	
Fixed income		
Asset-backed securities	133,941,741	
Corporate and other bonds	351,802,792	
U.S. Government obligations	201,900,499	
Pooled and mutual funds	<u>2,095,452,749</u>	
Total investments		<u>3,648,814,796</u>
Total assets		4,249,193,146

Current Liabilities

Investment purchases and other liabilities	168,779,495	
Cash collateral received for securities on loan	129,947,304	
Accounts payable and accrued expenses	9,279,071	
Compensated absences, short term	117,266	

Noncurrent Liabilities

Compensated absences, long term	<u>143,294</u>	
Total liabilities		<u>308,266,430</u>

Net position restricted for pension benefits**\$3,940,926,716**

See accompanying notes to financial statements.

Basic Financial Statements

Statement of Changes in Fiduciary Net Position

For the Year Ended June 30, 2018

Additions

Contributions		
Employer	\$188,578,414	
Plan members	<u>36,357,591</u>	
Total contributions		\$224,936,005
Investment income		
Net appreciation in fair value of investments	237,952,310	
Interest and other investment income	49,941,732	
Dividends	<u>18,865,368</u>	
Total investment income	306,759,410	
Investment activity expense		
Management fees	(37,071,470)	
Custodial fees	(136,775)	
Consulting fees	(78,696)	
Allocated administration expense	<u>(1,095,398)</u>	
Total investment expense	<u>(38,382,339)</u>	
Net income from investment activities		268,377,071
Securities lending activities		
Securities lending income	3,455,272	
Securities lending expenses	<u>(2,414,186)</u>	
Net income from securities lending activities		<u>1,041,086</u>
Total net investment income		<u>269,418,157</u>
Total additions		494,354,162
Deductions		
Annuity benefits	281,675,071	
Disability benefits	7,881,062	
Survivor benefits	6,698,896	
Refunds of employee contributions	4,386,395	
Administrative expense	<u>2,170,638</u>	
Total deductions		<u>302,812,062</u>
Net increase		191,542,100
Net position restricted for pension benefits		
Beginning of fiscal year		<u>3,749,384,616</u>
End of fiscal year		<u>\$3,940,926,716</u>

See accompanying notes to financial statements.

Notes to the Financial Statements

The Fairfax County Employees' Retirement System is a single employer defined benefit pension plan considered part of the County of Fairfax, Virginia's ("County") reporting entity and its financial statements are included in the County's basic financial statements as a pension trust fund.

Note 1. Summary of Significant Accounting Policies

A. Basis of Accounting

The System's basic financial statements have been prepared under the accrual basis of accounting in accordance with accounting principles applicable to governmental units in the United States of America. Member and employer contributions to the Plan are recognized in the period in which the contributions are due pursuant to legal requirements. Benefits and refunds are recognized when due in accordance with the terms of the Plan. The cost of administering the Plan is paid by the System.

For financial reporting purposes, the System adheres to accounting principles generally accepted in the United States of America. The System applies all applicable pronouncements of the Governmental Accounting Standards Board (GASB).

B. Method Used to Value Investments

Short-term investments are reported at cost, which approximates fair value. All other investments are reported at fair value. Securities traded on a national or international exchange are valued at the last reported sales price at current exchange rates. Asset-backed securities are valued on the basis of future principal and interest payments and are discounted at prevailing interest rates for similar instruments. Because of the inherent uncertainty in valuing these securities, the fair value may differ from the values that would have been used had a ready market for such securities existed. Accordingly, the realized value received upon the sale of the assets may differ from the fair value. The System records investment purchases and sales as of the trade date. These transactions are not finalized until the settlement date, which occurs approximately three business days after the trade date. The amounts of trade receivables and payables are shown as receivables and payables on the Statement of Fiduciary Net Position. Cash received as collateral on securities lending transactions and investments made with such cash are reported as assets along with a related liability for collateral received. The fair values of private investments and private real estate

are generally lagged by at least one quarter due to the timing of receipt of private market valuations and information.

C. Equity in County's Pooled Cash and Temporary Investments

The System maintains cash with the County, which invests cash and allocates interest earned, net of a management fee, on a daily basis to the System based on the System's average daily balance of equity in pooled cash. As of June 30, 2018, the bank balance of the County's public deposits was either insured by the Federal Deposit Insurance Corporation or through the State Treasury Board pursuant to the provisions of the Security for Public Deposit Act. The County's investments are exposed to various risks such as interest rate, market and credit risks. Such risks, and the resulting investment security values, may be influenced by changes in economic conditions and market perceptions and expectations. Accordingly, it is at least reasonably possible that changes in the values of investment securities will occur in the near term and that such change could materially affect the amounts reported in the financial statements.

D. Compensated Absences

Employees are granted vacation and sick leave based on their length of service. Unused annual and compensatory leave is payable to employees upon termination based on the employees' current rate of pay, up to certain limits. Sick leave does not vest with the employees; however, it is converted to years of service upon retirement. In addition, employees may accrue compensatory leave for hours worked in excess of their scheduled hours. Compensatory leave in excess of 240 hours is forfeited at the end of the calendar year.

Compensated Absences	
FY 2018 Beginning Balance	\$209,937
Leave Earned	166,937
Leave Used	116,315
FY 2018 Ending Balance	260,559
Due Within One Year	117,266

Notes to the Financial Statements

(continued)

Note 2. Summary of Plan Provision**A. Plan Description and Provision**

The Employees' Retirement System is a single employer defined benefit pension plan which covers employees of the County and its component units. Benefit provisions are established and may be amended by County ordinance. All benefits vest at five years of service. The general provisions of the Employees' Retirement System are as follows:

Membership.

The Plan covers full-time and certain part-time County, Public Schools, Economic Development Authority, Park Authority and Fairfax County Redevelopment and Housing Authority employees who are not covered by other plans of the County or the Virginia Retirement System.

Normal Retirement.

To be eligible for normal retirement, an individual must meet the following criteria: (a) attain the age of 65 with five years of service, (b) for Plan A and B, attain the age of 50 plus years of eligibility service being greater than or equal to 80, or (c) for Plan C and D, attain the age of 55 plus years of eligibility service being greater than or equal to 85.

For Plan A and C, the benefit is the sum of 1.8 percent average final compensation (i.e., the highest consecutive three years) up to the Social Security breakpoint plus 2 percent of average final compensation in excess of the breakpoint, all multiplied by credited service, and increased by 3 percent.

For Plan B and D, the benefit is 2 percent of average final compensation multiplied by credited service, increased by 3 percent.

Pre-Social Security Supplement for all Plans is 1 percent of average final compensation up to the Social Security breakpoint times credited service, and increased by 3 percent. This benefit is payable from normal retirement age until the participant is eligible to receive the unreduced Social Security benefits.

Early Retirement.

For all 4 plans, a member is eligible for early retirement at age 50 or older when the member's age plus

creditable service totals 75 or more. Reduction factors are applied to the basic formula for early retirement based on how far from age 65 the member is at early retirement and no Pre-Social Security Benefit is payable.

Deferred Retirement Option Program (DROP).

Members who are eligible for normal retirement may participate in DROP for up to three years. While in DROP, the member continues to work and receive a salary. In lieu of continuing to earn service credit, DROP participants accumulate a lump sum, including interest, payable at retirement. For those in Plan C or D, the member does not receive the Pre-Social Security Benefit while in DROP.

Deferred Vested Retirement.

Deferred vested retirement is available for vested members (vesting is at 5 years of service) who leave their contributions in the System when they terminate. These members are entitled to their normal retirement benefit, at age 65, based on service with the County or a reduced benefit earlier when they reach age 50 and age plus years of creditable service equal 75. The member also has the option to request a refund of member contributions and interest at any time prior to reaching age 65 or receiving retirement benefits.

Service-Connected Disability Retirement.

Service-connected disability retirement is available for members, regardless of their length of service, who become disabled as a result of a job-related illness or injury. Benefits are 66.67 percent of average final compensation, less an offset for a workers' compensation award, less 5.0 percent of the initial award amount of a member's Social Security benefit.

Ordinary Disability Retirement.

Ordinary disability retirement is available for vested members who become disabled due to an injury or illness that is not job-related. Benefits are 2.0 percent of average final compensation (highest consecutive three years) times the creditable service. The total benefit is then increased by 3.0 percent.

Notes to the Financial Statements
(continued)

Contribution Rates

Member	Plan A	The contribution rate for Plan A is 4.0% of creditable compensation up to the Social Security taxable wage base, plus 5.33% of creditable compensation
	Plan B	The contribution rate for Plan B is 5.33% of creditable compensation
	Plan C	The contribution rate for Plan A is 4.0% of creditable compensation up to the Social Security taxable wage base, plus 5.33% of creditable compensation
	Plan D	The contribution rate for plan D is 5.33% of creditable compensation
Employer	Plan A, B, C, and D	The contribution rate for all four plans for Fiscal Year 2018 was 25.29%

Death Benefits.

If death occurs prior to retirement:

If the member is vested and the spouse is the listed beneficiary, the spouse may elect to receive 50.0 percent of the normal retirement benefit earned as of the date of the member's death. If the 50.0 percent of normal retirement benefit is not payable, a refund of the member's contribution plus interest will be paid to the named beneficiary or member's estate.

If death occurs after retirement:

A refund of any of the member's contributions and interest not already paid in benefits will be payable to the named beneficiary(ies) unless the member has elected the irrevocable Joint and Last Survivor Option which provides a benefit to the member's spouse for life. At retirement, the member may choose to have his or her spouse receive 50.0 percent, 66.67 percent, 75.0 percent or 100.0 percent of the member's reduced annuity upon the member's death. The member's annuity is reduced by a percentage based on the difference in age between the member and his or her spouse. If the spouse pre-deceases the member, the annuity is restored to what it would have been if this option had not been elected.

If death occurs because of a job-related illness or injury:

A \$10,000 lump-sum payment is made to the beneficiary if the member's death is due to a job-related illness or injury.

Cost of Living Benefit.

Annual cost of living adjustments (COLAs) are provided to retirees and beneficiaries equal to the lesser of 4.0 percent or the percentage increase in the Consumer Price Index for the Metropolitan Statistical Area that includes Fairfax County.

Benefit Limits.

Benefits are limited to the maximum amounts for qualified plans as set forth in Section 415 of the Internal Revenue Code. A separate, nonqualified benefit restoration plan has been established for the payment of any benefit formula amounts in excess of the Section 415 limit.

Note: Detailed provisions may be found in the Retirement Handbook for Active Employees.

B. Board of Trustees

Ten members serve on the Fairfax County Employees' Retirement System. Four of the members are citizens appointed by the Fairfax County Board of Supervisors. Three of the members are elected by Fairfax County Government Employees, Fairfax County Public Schools Employees, and Fairfax County Retirees respectively. The Director of Human Resources, the Director of Finance, and the Assistant Superintendent of Human Resources at the Fairfax County Public Schools also serve as Ex Officio members.

Notes to the Financial Statements

(continued)

C. Membership

At June 30, 2018, the date of the latest actuarial valuation, membership in the System consisted of:

Retirees and beneficiaries receiving benefits	8,989
Terminated Vesteds	2,269
Deferred Retirement Option Program (DROP) participants	858
Active plan members	<u>13,904</u>
Total	26,020

D. Deferred Retirement Option Program

Members eligible for normal retirement may elect to enter the DROP. As a DROP member, he or she will continue to work and receive a salary for a maximum period of three years while an amount equal to what could have been received as a retirement benefit is credited to his or her DROP account. (No pre-Social Security Supplements are paid into DROP accounts for Plans C & D). The monthly benefit that will be credited to the DROP account is determined by the years of service and Average Final Compensation at the DROP entry date. During the DROP period, the retirement plan accumulates his or her accrued monthly benefit which is payable at the end of the DROP period. The DROP account balance is credited at an annual interest rate of 5 percent, compounded monthly. At the end of the DROP period, the DROP member must terminate employment with the Fairfax County Government and will begin receiving his or her monthly retirement benefit. Upon DROP exit, the retiree can elect to receive the balance of the DROP account in the form of a lump sum distribution, a rollover to another qualified plan (or IRA), or as an addition to the monthly retirement annuity. The DROP balance as of June 30, 2018, was \$64.3 million.

E. Contributions

The contribution requirements of the System members are established and may be amended by County ordinances. Employees hired prior to January 1, 2013 are members of Plan A or Plan B. All eligible employees whose County or school board employment commenced by reporting to work on or after January 1, 2013, may elect to join Plan C or Plan D. Plan A and C require member contributions of 4 percent of compensation up to the social security

wage base and 5.33 percent of compensation in excess of the wage base. Plan B and D require member contributions of 5.33 percent of compensation. The County is required to contribute at an actuarially determined rate; the rates for the year ended June 30, 2018, was 20.03 percent of annual covered payroll. The decision was made to commit additional funding and a rate of 25.29 percent was adopted for fiscal year 2018. Total contributions for the fiscal year ended June 30, 2018, amounted to \$224.9 million.

F. Deductions

The deductions from the System included the payment of retiree and beneficiary payments, the refund of employee contributions to former members and administrative expenses. The total deductions for the fiscal year ended June 30, 2018, amounted to \$302.8 million.

Note 3. Investments**A. Investment Policy**

The authority to establish the System is set forth in Section 51.1-800 Code of Virginia (Code). Section 51.1-803 of the Code authorizes fiduciaries of the System *to purchase investments with the care, skill, prudence and diligence under the circumstances then prevailing that a prudent person acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of like character and with the same aims. The Board shall also diversify such investments as to minimize the risk of large losses unless under the circumstances it is clearly prudent not to do so.*

The System's Board of Trustees has adopted the Employees' Retirement System Investment Policy Statement to provide a well-managed investment program to meet the long-term needs of the System. The Board of Trustees has the authority to amend the investment policy. Investment decisions for these assets are made by the Board of Trustees or investment managers selected by the Board. The overall investment policy does not address specific levels of credit risk, interest rate risk or foreign currency risk. The Board of Trustees believes that risks can be managed, but not eliminated, by establishing constraints on the investment portfolio and by properly monitoring the investment markets, the System's asset allocation and the investment managers hired by the System. Each individual investment portfolio is managed by an

Notes to the Financial Statements
(continued)

investment management firm selected by the Board. Each investment manager has a specific benchmark and investment guidelines appropriate for the type of mandate they are managing and that fit within the total risk tolerance of the fund.

The following was the System’s adopted asset allocation policy as of June 30, 2018. The asset allocation policy commonly exceeds 100 percent because we monitor the target exposures to both direct investments in asset classes plus notional exposure to asset classes through derivative positions such as Futures held at the portfolio level. Also, the System commonly includes notional exposures for select Investment Managers that have a mandate from the Board to provide the System with additional asset class exposure using leverage or derivatives.

Asset Class	Target Exposure
Absolute Return	20.0%
Global Equity	27.5%
Global Fixed Income	40.0%
Global Multi-Asset	20.0%
Global Real Assets	12.5%

B. Concentrations

The investment policy states that the securities of any one issuer shall not exceed 10.0 percent at fair value. At June 30, 2018, the System did not have investments (other than U.S. Government and U.S. Government guaranteed obligations) in any one issuer that represents 5.0 percent or more of net position available for benefits. All investments, except for the pooled and mutual funds, short-term investment fund and a short-term collateral investment pool are held by an unaffiliated custodian. There is no custodial credit risk since the custodian’s records establish the System’s interest in the securities.

C. Rate of Return

For the year ended June 30, 2018, the annual money-weighted rate of return on pension plan investment, net of pension plan investment expense, was 7.3 percent. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

D. Fair Value Hierarchy

The System measures and records its investments using fair value hierarchy measurement guidelines established by Generally Accepted Accounting Principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and gives the highest level to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1 measurements) and the lowest level to unobservable inputs (Level 3 measurements).

- Level 1 Unadjusted quoted prices for identical instruments in active markets;
- Level 2 Observable inputs other than quoted market prices; and
- Level 3 Valuation derived from valuation techniques in which significant inputs are unobservable.

Investments that are measured at fair value using the net asset value per share (or its equivalent) as a practical expedient are not classified in the fair value hierarchy.

In instances where inputs used to measure fair value fall into different levels in the fair value hierarchy, fair value measurements in their entirety are categorized based on the lowest level input that is significant to the valuation. The table on the following page shows the fair value levels of the investments.

Equities and fixed income securities classified in Level 1 are valued using prices quoted in the active markets for those securities. Securities in Level 2 and Level 3 are valued using either a bid evaluation or a matrix pricing technique. Bid evaluations may include market quotations, yields, maturities, call features and ratings. Matrix pricing is used to value securities based on the securities’ relationships to benchmark quoted prices. Level 3 securities use proprietary information or single source pricing.

Notes to the Financial Statements

(continued)

Fair Value Hierarchy				
Investments by Fair Value Level	6/30/2018	Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
Asset-Backed Securities	\$133,941,741	\$ -	\$133,941,741	\$ -
Equity	864,514,693	864,514,677		16
Corporate and Other Bonds	319,042,216	9,260,299	304,539,173	5,242,744
Natural Resources	-	-	-	-
Preferred Securities	1,202,323	1,193,222	-	9,101
Real Estate	32,760,575	32,760,575	-	-
Short-Term Investments	273,570,623	20,661,070	21,478,686	231,430,867
US Government Obligations	<u>201,900,499</u>	-	<u>201,900,499</u>	-
Total Investment by Fair Value Level	\$1,826,932,670	\$928,389,843	\$661,860,099	\$236,682,728
Investment Measured at Net Asset Value (NAV)				
Absolute Return	749,468,042			
Global Equity	319,191,129			
Global Fixed Income	478,305,835			
Global Multi-Asset	407,639,120			
Global Real Assets	<u>140,848,623</u>			
Total Investments Measured at NAV	\$2,095,452,749			
Total Investments	<u>\$3,922,385,419</u>			

Investment Measured at NAV				
	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Absolute Return	\$749,468,042	\$ -	Monthly, Quarterly	3 - 90 days
Global Equity	319,191,129	32,462,306	Daily, Monthly, None	3 - 15 days
Global Fixed Income	478,305,835	239,134,436	Daily, Semi-Annually, None	5 - 90 days
Global Multi- Asset	407,639,120	-	Daily, Monthly, Quarterly	1 - 30 days
Global Real Assets	140,848,623	49,514,884	Daily, None	5 - 20 days
Total investment measured at NAV	<u>\$2,095,452,749</u>	<u>\$321,111,626</u>		

Notes to the Financial Statements

(continued)

Absolute Return.

Relative Value:

This type includes five hedge funds which implement long and short relative value strategies to capture these structural returns across multiple asset classes including: equity sectors, equity indices, fixed income, currency, and commodities. The fair values of each of these hedge funds has been determined monthly using NAV per share of the investments.

Global Macro:

This type includes five hedge funds that invest long and short across fixed income, currency, equity and commodity markets. The process is equally driven by analysis of the macro environment, flows of capital, the expected reaction to changes in interest rates, trend following and other drivers.. The fair values of the investments in this type have been determined monthly using NAV per share (or its equivalent) of the investments.

Global Equity.

Domestic Equity:

This type includes a fund that uses derivative instruments to replace long equity exposure.

International Equity:

This type includes two funds providing traditional long-only international equity exposure. The fair values of the investments in this type have been determined monthly using NAV per share (or its equivalent) of the investments.

Private Equity:

This fund purchases private equity stakes in investment management firms and thus a share of the firm's revenues and capital appreciation.

Global Fixed Income.

Fixed Income:

This type includes two funds providing leveraged exposure to US and international government issued inflation-linked bonds as a capital efficient way to gain the exposure. This type also includes an emerging market debt fund. The fair values of the investments in this type have been determined monthly using NAV per share (or its equivalent) of the investments.

Direct Lending:

This type includes three private debt funds conducting middle market corporate direct lending with negotiated senior secured loans to borrowers that are too small to attract the attention of conventional banks and lenders. These investments cannot be redeemed. Instead, the nature of the investments in these private debt funds are that distributions are received through the liquidation of underlying assets of the funds over a period of years as per the terms of the fund. Loan payments are also distributed on a monthly or quarterly basis. The loans are held at book value unless a payment default has occurred at which time a third-party appraisal value is determined.

Opportunistic Credit:

This type includes eight opportunistic/distressed funds investing in public and private debt, equity and real estate as opportunities present themselves. All but one of these investments cannot be redeemed. Instead, the nature of the investments in these private debt funds are that distributions are received through the liquidation of underlying assets of the funds over a period of years as per the terms of the fund. The fair values of the investments in this type have been determined monthly or quarterly using NAV per share (or its equivalent) of the investments.

Global Multi-Asset.

This type includes two funds that invest in a relatively passive manner across multiple asset classes using a risk balanced approach in their asset allocation and one fund that is active in its approach. The main goal is to construct a portfolio that achieves the best risk adjusted return at a given expected level of volatility which varies by fund. This is achieved through the use of derivatives and liquid long positions across multiple asset classes. The fair values of the investments in this type have been determined monthly using NAV per share (or its equivalent) of the investments.

Global Real Assets.

This type includes four funds. The first fund owns and operates a fleet of commercial bulk container and tanker vessels. A second fund purchases interests

Notes to the Financial Statements

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in other private real estate funds on the secondary market. The third fund owns and operates the real estate, infrastructure and inventory of a cattle feeding operation. These investments cannot be redeemed. Instead, the nature of the investments in these private debt funds are that distributions are received through the liquidation of underlying assets of the funds over a period of years as per the terms of the fund. The fair values of the investments in this type have been determined quarterly using NAV per share (or

its equivalent) of the investments. The fourth fund focuses on publicly traded REITs, listed infrastructure, commodities, MLPs, natural resource equities (including timber and agriculture), precious metals, TIPS, and floating rate/bank loans. The strategy will set long term strategic allocations to those asset classes with broad ranges and the portfolio will be tactically reviewed on a quarterly basis.

E. Quality Ratings

The System's investment quality ratings at June 30, 2018, for the separately managed fixed income accounts, were as follows:

Type of Investment	Fair Value	Ratings	Percentage of Fixed
US Government Obligations	\$201,900,499	AA	29.4%
Asset-Backed Securities	1,651,382	AAA	0.2%
	26,634,895	AA	3.9%
	277,663	A	0.0%
	1,584,999	BBB	0.2%
	1,769,842	BB	0.3%
	5,543,826	B	0.8%
	9,689,101	CCC	1.4%
	7,346,849	CC	1.1%
	10,609,497	D	1.5%
	68,833,687	Unrated	10.0%
Corporate and Other Bonds	3,145,914	AAA	0.5%
	15,022,955	AA	2.2%
	45,971,986	A	6.7%
	35,784,428	BBB	5.2%
	91,292,774	BB	13.3%
	68,327,177	B	9.9%
	15,922,232	CCC	2.3%
	82,500	CC	0.0%
	<u>76,252,826</u>	Unrated	11.1%
Total Fixed Income	<u>\$687,645,032</u>		<u>100.0%</u>
Short-Term Investments			
Cash and Cash Equivalents	27,221,023	Unrated	
Employees' STIF*	231,430,867	Unrated	
US Treasury Bill	<u>20,661,070</u>	AA	
Total Short-Term Investments	<u>\$279,312,960</u>		

*Short-term investment funds

As of June 30, 2018, the fixed income portfolio, excluding pooled funds, consisted of 48.3 percent invested in investment grade securities, 30.6 percent invested in below-investment-grade securities and 21.1 percent invested in unrated securities.

The Barclays Capital Aggregate Bond Index (BCAG) is the standard benchmark against which the industry and the System's Board measures its fixed income portfolio performance and volatility. The System's fixed income managers have discretion, within circumscribed limits, to extend the duration of their portfolios beyond that of the BCAG if they forecast falling interest rates (and thus higher bond prices). Conversely, if managers anticipate that the general level of interest rates will rise, they have the ability to shorten the duration of their portfolio and thus reduce the portfolio's sensitivity to rising rates.

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F. Sensitivity to Interest Rate Risk

The System's investments' sensitivity to interest rates at June 30, 2018, were as follows:

Investment Type	Fair Value	Option Adjusted Duration (years)	Percentage of Fixed
US Government obligations	\$201,900,499	11.2	29.3%
Corporate and other bonds	351,802,792	3.0	51.2%
Asset-backed securities	<u>133,941,741</u>	<u>5.8</u>	<u>19.5%</u>
Total Fixed Income	<u>\$687,645,032</u>	<u>6.0</u>	<u>100%</u>
Short-Term Investments			
Cash and cash equivalents	27,221,023	0.0	
Employees' Enhanced STIF*	231,430,867	0.1	
US Treasury bill	<u>20,661,070</u>	<u>0.3</u>	
Total Short-Term Investments	<u>\$279,312,960</u>	<u>0.1</u>	

*Short-term investment funds

The duration of the System's overall fixed income portfolio excluding the pooled funds was 6.0 years for the separately managed accounts. BCAG's years of duration is 6.0 years.

G. Short-term Investment

The Short-Term Investments of \$279.3 million includes a position of \$231.4 million of commingled cash held by our investment managers and cash held by the System in an enhanced short term investment fund managed by our custodian.

H. Foreign Currency Risk

The Foreign Currency Risk is the risk that changes in exchange rates will adversely affect the fair value of the investment. The System's investments at June 30, 2018, held in currencies other than U.S. dollars, were as follows:

International Securities	Short-Term & Other Investments	Convertible & Fixed Income	Equity	Total
Australian Dollar	(\$198,785)	\$9,034,620	\$16,501,322	\$25,337,157
Brazil Real	3,453	3,509,205	5,934,603	9,447,261
Canadian Dollar	(340,616)	922,589	5,429,425	6,011,398
Colombian Peso	-	3,232,905	-	3,232,905
Danish Krone	10,078	-	4,434,867	4,444,945
Euro Currency Unit	106,189	1,378,778	71,405,014	72,889,981
Hong Kong Dollar	1	-	26,709,539	26,709,540
Hungarian Forint	1,117	-	-	1,117
Indian Rupee	-	-	4,715,287	4,715,287
Indonesian Rupiah	-	5,815,778	-	5,815,778
Japanese Yen	2,751,425	-	49,358,730	52,110,155
Malaysian Ringgit	-	10,218,148	-	10,218,148
Mexican Peso	-	21,146,565	3,099,732	24,246,297
New Taiwan Dollar	1,624,591	-	3,166,833	4,791,424
New Zealand Dollar	632	544,093	-	544,725
Norwegian Krone	1	-	3,302,623	3,302,624
Peruvian Sol	-	3,775,641	-	3,775,641
Polish Zloty	1	9,837,814	-	9,837,815
Pound Sterling	57,930	1,849,566	41,934,994	43,842,490
Singapore Dollar	1,936	(792,020)	1,507,500	717,416
South African Rand	25	7,115,111	-	7,115,136
South Korean Won	-	449,727	2,108,248	2,557,975
Swedish Krona	-	-	13,980,709	13,980,709
Swiss Franc	333	302,281	7,854,971	8,157,585
Thailand Baht	(144)	-	2,575,136	2,574,992
Turkish Lira	<u>1</u>	<u>846,067</u>	<u>-</u>	<u>846,068</u>
Grand Total	<u>\$4,018,168</u>	<u>\$79,186,868</u>	<u>\$264,019,533</u>	<u>\$347,224,569</u>

Notes to the Financial Statements

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I. Derivative Financial Instruments

In accordance with the Board's investment policies, the System regularly invests in derivative financial instruments in the normal course of its investing activities to enhance return on investment and manage exposure to certain risks within the System. The System also enters into derivative transactions to gain exposure to currencies and markets where derivatives are the most cost-effective instrument. Derivative instruments are financial contracts whose values depend on the values of one or more underlying assets, reference rates or financial indices. During fiscal year 2018, the System had exposure to various derivatives including asset-backed securities, collateralized mortgage obligations, exchange-traded futures contracts, forward currency contracts, options, swaps and floating rate securities. Some securities, such as structured notes, can have derivative-like characteristics where the return may be linked to one or more indexes. Asset-backed securities, such as collateralized mortgage obligations (CMOs), are sensitive to changes in interest rates and pre-payments. It should also be noted that the System also has exposure to derivatives indirectly through its ownership interests in certain hedge funds, mutual funds and commingled funds which may use, hold, or write derivative financial instruments.

Derivative investments may involve, to varying degrees, elements of credit and market risk in excess of amounts recognized on the financial statements. Market risk results from the fluctuations in interest rates and currency rates. The credit risk of these investments is associated with the creditworthiness of the related parties to the contracts. The System could be exposed to risk if the counterparties to the contracts are unable to meet the terms of the contracts. Holders of futures contracts look to the exchange for performance under the contract and not to the other party holding the offsetting futures position. Accordingly, the amount at risk due to nonperformance of counterparties to futures contracts is minimal. For counterparties involving over the counter derivatives, the Board seeks to control this risk through counterparty credit evaluations, counterparty credit limits and exposure monitoring procedures conducted by investment managers and staff.

At June 30, 2018, the System held the following four types of derivative financial instruments: futures, currency forwards, options and swaps. These four types of derivatives provide the System with the opportunity to build passive benchmark positions, enhance returns, and gain market exposure to various indices in a more efficient way and at lower transaction costs. Credit risks depend on whether the contracts are exchange-traded or exercised over-the-counter. Market risks arise from adverse changes in market prices, interest rates and foreign exchange rates.

Investment managers are prohibited from purchasing securities on margin or using leverage unless specifically permitted within the investment manager's guidelines. Derivative instruments covered under the scope of GASB 53 are reported at fair value. The changes in fair value of derivative instruments that are used for investment purposes are reported within the investment revenue classification. Gains and losses on derivative securities are determined based upon fair values as determined by our custodian and recorded in the Statement of Changes in Fiduciary Net Position.

Futures.

Futures contracts are contracts to deliver or receive securities at a specified future date and at a specified price or yield. Futures contracts are traded on organized exchanges (exchange-traded) and typically require an initial margin (collateral) in the form of cash or marketable securities. The net change in the futures contract value is settled daily, in cash, with the exchanges. The net gains or losses resulting from the daily settlements are included in the System's financial statements. Holders of futures contracts look to the exchange for performance under the contract and not to the entity holding the offsetting futures position. Accordingly, the amount at risk posed by nonperformance of counterparties to futures contracts is minimal.

Notes to the Financial Statements

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The notional value of the System's investment in futures contracts at June 30, 2018, were as follows:

Types of Futures	Base Exposure	Notional Cost
Cash and cash equivalents		
Short	(\$237,646,250)	(\$241,854,246)
Commodity		
Long	172,017,342	176,143,584
Short	(646,379)	(438,584)
Equity		
Long	217,215,625	221,277,310
Short	(76,651,680)	(79,636,969)
Fixed income securities		
Long	380,637,586	377,982,351
Short	(79,480,514)	(79,208,888)
Total	<u>\$375,445,730</u>	<u>\$374,264,558</u>

Swaps.

The System enters into several types of swap contracts, in which two counterparties agree to exchange one stream of payments for another over some agreed to period of time. Swaps are used to manage risk and enhance returns. All counterparties are rated A or better. The following is the information on the System's swap contracts outstanding at June 30, 2018:

Equity Swaps	Fair Value	Base Exposure
Total Return Swaps	\$ -	\$184,106
Fixed Income Securities Swaps		
Cleared Interest Rate Swaps	(2,083,348)	(1,407,819)
Cleared Credit Default Swaps	1,339,143	1,374,751
Cleared Inflation Swaps	20,349	2,076
Credit Default Swaps	3,358	3,358
Interest Rate Swaps	(61,651)	(61,651)
Total Return Swaps	-	22,062
Total	<u>(\$782,149)</u>	<u>\$116,883</u>

Notes to the Financial Statements

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Currency Forwards.

Currency forwards represent foreign exchange contracts. They used to affect settlements and to protect the base currency value of portfolio assets denominated in foreign currencies against fluctuations in the exchange rates of those currencies, or to gain exposure to the change in fair value of a specific currency. A forward foreign currency exchange contract is a commitment to purchase or sell a foreign currency at a future date and at a negotiated price. The credit risk of currency contracts that are

exchange-traded lies with the clearinghouse of the exchange where the contracts are traded. The credit risk of currency contracts traded over-the-counter lies with the counterparty, and exposure usually is equal to the unrealized profit on in-the-money contracts. All counterparties are rated A or better. The market risk in foreign currency contracts is related to adverse movements in currency exchange rates. The following is the summary information on the System's currency forward contracts at June 30, 2018:

Foreign Currency Contracts Purchased	Notional (local currency)	Cost	Fair Value Payable in U.S.Dollars	Unrealized Gain/(loss)
Australian Dollar	(11,690,000)	\$8,828,756	(\$8,638,408)	\$190,348
Canadian Dollar	(700,000)	539,849	(532,137)	7,712
Colombian Peso	(9,560,000,000)	3,300,843	(3,249,912)	50,931
Euro Currency Unit	(29,130,000)	34,829,867	(34,131,781)	698,086
Japanese Yen	(1,233,001,447)	11,378,492	(11,160,590)	217,902
New Taiwan Dollar	(359,800,000)	12,101,847	(11,846,777)	255,070
New Zealand Dollar	(90,000)	63,362	(60,935)	2,427
Polish Zloty	(4,840,000)	1,432,207	(1,293,053)	139,154
Pound Sterling	(2,238,000)	2,964,228	(2,956,722)	7,506
South African Rand	(68,700,000)	5,632,870	(5,007,282)	625,588
Swiss Franc	(302,000)	<u>308,432</u>	<u>(305,242)</u>	<u>3,190</u>
		\$81,380,753	(\$79,182,839)	\$2,197,914
Foreign Currency Contracts Sold	Notional (local currency)	Cost	Fair Value Receivable in U.S. Dollars	Unrealized Gain/(loss)
Australian Dollar	10,450,000	(\$7,893,298)	\$7,722,102	(\$171,196)
Canadian Dollar	6,380,000	(5,017,923)	4,850,835	(167,088)
Colombian Peso	22,740,000,000	(8,313,682)	7,730,440	(583,242)
Euro Currency Unit	650,000	(755,164)	761,608	6,444
Mexican Peso	4,071,755	(213,515)	205,356	(8,159)
New Taiwan Dollar	359,800,000	(12,091,801)	11,846,777	(245,024)
Norwegian Krone	72,200,000	(9,079,655)	8,873,495	(206,160)
Pound Sterling	5,509,000	(7,369,817)	7,293,100	(76,717)
Swedish Krona	169,000,000	(20,071,818)	18,968,139	(1,103,679)
Turkish Lira	17,900,000	<u>(4,271,016)</u>	<u>3,890,797</u>	<u>(380,219)</u>
		(\$75,077,689)	\$72,142,649	(\$2,935,040)
Net Unrealized Gain/(loss) on Foreign Currency Spot and Forward Contracts				<u>(\$737,126)</u>

Notes to the Financial Statements

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Options.

Option contracts may be exchanged traded or negotiated directly in over the counter transaction between two counterparties. Options holders have the right, but not the obligation, to purchase (call) or sell (put) a financial instrument at a future price and time. The System can both purchase and write options.

Exchange traded options rely on the exchange for performance and the risk to non-performance of counterparties is minimal. All counterparties for over the counter options are rated A or better. The following table provides information on the System's option contracts at June 30, 2018:

Option Types	Position	Call/Put	Cost	Fair Value	Total Unrealized Gain (loss)
Commodity	Purchased	Call	\$4,924	\$4,924	\$ -
		Put	-	80	80
	Written	Call	(8,376)	(18)	8,358
		Put	(4,890)	(700)	4,190
Equity	Written	Call	(227,719)	(72,988)	154,731
		Put	(1,290)	(1)	1,289
Fixed Income	Written	Call	(13,684)	(2,004)	11,680
		Put	<u>(10,865)</u>	<u>(368)</u>	<u>10,497</u>
Total Options			<u>(\$261,900)</u>	<u>(\$71,075)</u>	<u>\$190,825</u>

J. Securities Lending

The Board of Trustee policies permit the System to lend its securities to broker/dealer and other entities (borrowers) for collateral that will be returned for the same securities in the future. The System's custodian is the agent in lending the plan's domestic securities for collateral of 102.0 percent and international securities of 105.0 percent of fair value. The custodian receives cash or securities as collateral from the borrower. All securities loans can be terminated on demand by either the System or the borrower. Securities received as collateral are not reported as assets and liabilities on the balance sheet since the Retirement System does not have the ability to pledge or sell the collateral securities absent borrower default.

The System did not impose any restrictions during fiscal year 2018 on the amounts of loans the lending agent made on its behalf. At June 30, 2018, the System had no credit risk exposure to borrowers because the

amounts the System owed the borrowers exceeded the amounts the borrowers owed the System. The custodian provides full indemnification to the System for any losses that might occur in the program due to the failure of a broker/dealer to return a borrowed security or failure to pay the System income earned on the securities while on loan. Cash collateral is invested in a separate account with the lending agent which includes a larger allocation to equity repurchase securities.

At June 30, 2018, cash collateral had a weighted-average maturity of one day. The maturities of the resulting investments generally match the maturities of the securities lending arrangements. While the System bears no credit risk from the failure of a borrower to return a borrowed security, it does bear risk from investing the collateral.

Notes to the Financial Statements

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The following represents the balances relating to the securities lending transactions at June 30, 2018:

Securities Lent	Underlying Securities	Cash Collateral Investment Value	Securities Collateral Investment Value
Lent for Cash Collateral			
US Government Securities	\$4,577,309	\$4,675,231	
Corporate and Other Bonds	48,937,622	50,133,813	
Common and Preferred Stock	73,358,189	75,138,260	
Lent for Securities Collateral			
US Government Securities	33,725,526	-	\$36,799,404
Corporate and Other Bonds	51,352	-	52,462
Common and Preferred Stock	<u>142,207,897</u>	<u>-</u>	<u>157,542,473</u>
Total Securities Lent	<u>\$302,857,895</u>	<u>\$129,947,304</u>	<u>\$194,394,339</u>

K. Reclassifications

During the fiscal year 2018, the System requested that investment managers for commingled funds provide the management fees associated with commingled funds. Previously, such management fees had been netted against investment income. Accordingly, the System revised the classification to report these management fees as an investment activity expense on the Statement of Changes in Fiduciary Net Position, rather than netting the management fees against investment income. This change in classification has no effect on the financial statements for any period.

Note 4. Net Pension Liability, Actuarial Methods and Assumptions**A. Net Pension Liability**

The components of the net pension liability at June 30, 2018, were as follows:

Total pension liability	\$5,591,223,791
Plan fiduciary net position	<u>3,940,926,716</u>
Net pension liability	<u>\$1,650,297,075</u>
Plan fiduciary net position as a percentage of the total pension liability	70.5%

B. Actuarial Methods and Assumptions

The Total Pension Liability was determined by an actuarial valuation as of June 30, 2018, using the following actuarial assumptions, applied to all periods included in the measurement.

Discount rate, net of plan investment expenses	7.25%
Inflation	2.75%
Salary increase, including inflation	2.75% + merit
Investment rate of return, net of plan investment expenses	7.25%
Municipal bond rate	N/A
Projected period of unfunded benefit payments	None

The actuarial assumptions used have been recommended by the actuary and adopted by the System's Board of Trustees based on the most recent review of the System's experience presented at a Board meeting on April 20, 2016.

The rate of employer contributions to the System is composed of normal cost, amortization of the unfunded actuarial accrued liability and an allowance for administrative expenses. The normal cost is a level percent of payroll cost which, along with the member contributions, will pay for projected

Notes to the Financial Statements

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benefits at retirement for each plan participant. The actuarial accrued liability is that portion of the present value of projected benefits that will not be paid by future normal employer costs or member contributions. The difference between this liability and the funds accumulated as of the same date is the unfunded actuarial accrued liability. The allowance for administrative costs is based upon the System's actual administrative expenses.

The County is required to contribute at an actuarially determined rate; the rate for the year ended June 30, 2018, was 20.03 percent of annual covered payroll. The decision was made to commit additional funding and a rate of 25.29 percent was adopted for fiscal year 2018. Since the System's adjusted funded ratio (the ratio of the sum of the actuarial value of assets and commitments already made to fund changes to the actuarial accrued liability) has fallen below 90.0 percent, the contribution rate includes a margin to amortize this shortfall back to the 90.0 percent level. In fiscal year 2011 the target was increased to a 91.0 percent level, with the 2015 fiscal year contribution it was increased to 93.0 percent, and with the 2016 fiscal year contribution it was increased to 95.0 percent, and with the 2017 fiscal year contribution it was increased again to 97.0 percent and with the 2018 fiscal year contribution it was increased to 98.0 percent. The intent of the County is to continue increasing the amortization target until full actuarial funding has been restored. The goal is to reach an amortization to 100 percent in contributions at or before fiscal year 2020.

Mortality rates with adjustments for mortality improvements were based on 110 percent and 100 percent of the RP-2014 Healthy Annuitant Mortality Table for males and females respectively, projected using the RPEC- 2015 model, with an ultimate rate of 0.65 percent for ages 20-85 grading down to an ultimate rate of 0 percent for ages 115-120 and convergence to the ultimate rate in the year 2015. Five percent of pre-retirement deaths are assumed to be service-connected.

The actuarial assumptions used in the June 30, 2018, valuation were based on the results of an actuarial experience study for the period July 1, 2010 to June 30, 2015.

C. Long Term Expected Rate of Return

The long term expected rate of return on pension plan 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 excess rates of return (over cash) for each major asset class included in the System's target asset allocation as of June 30, 2018, are summarized below:

Asset Class	Long Term Expected Real Rate of Return
Absolute Return	7.00%
Core Fixed Income	1.80%
High Yield	4.25%
International Developed Mkt. Equities	4.35%
International Emerging Mkt. Equities	7.20%
Real Assets	4.65%
Risk Parity	6.00%
US Equities	4.65%

D. Discount Rate

The discount rate used to measure the total pension liability was 7.25 percent. 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 County 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.

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In making this determination, we assumed the outflows would equal the anticipated benefit payments from the 2017 actuarial valuation. The administrative expenses attributable to current actives were assumed to equal 0.25 percent of covered payroll. The inflows to the plan were assumed to continue at the average aggregate rate for the 2017 active population of 4.76 percent of payroll and County contributions were projected at 25.29 percent for fiscal year 2018, 27.18 percent for fiscal year 2019, with continued increases to 28.91 percent to be contributed until 2031. After that time the County contribution was assumed to drop to the normal cost plus expenses (8.22 percent) since the unfunded actuarial liability is expected to be fully funded by that time.

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

The following presents the net pension liability of the County, calculated using the discount rate of 7.25 percent, as well as what the County's net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.25 percent) or 1-percentage-point higher (8.25 percent) than the current rate.

Sensitivity of Net Pension Liability			
	1% Decrease 6.25%	Discount Rate 7.25%	1% Increase 8.25%
Total Pension Liability	\$6,259,521,118	\$5,591,223,791	\$5,031,321,012
Plan Fiduciary Net Position	3,940,926,716	3,940,926,716	3,940,926,716
Net Pension Liability	\$2,318,594,402	\$1,650,297,075	\$1,090,394,296
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	63.0%	70.5%	78.3%

Note 5. Income Taxes

The Internal Revenue Service issued the System a determination letter which stated that the System and its underlying trust qualify under the applicable provisions of the Internal Revenue Code and therefore are exempt from federal income taxes.

Required Supplementary Information (Unaudited)

Schedule of Changes in the Net Pension Liability and Related Ratios					
Year Ended June 30					
	2018	2017	2016	2015	2014
Total Pension Liability					
Service cost	\$96,662,966	\$93,128,267	\$85,498,714	\$84,153,689	\$84,074,831
Interest	385,504,765	367,586,251	361,073,638	353,621,871	340,919,519
Changes in benefit terms	603,265	582,418	773,066	1,462,698	-
Differences between expected and actual experience	41,362,698	74,947,987	(104,260,427)	(8,616,589)	-
Changes in assumptions	-	-	68,573,373	-	-
Benefit payments, including refunds of member contributions	<u>(300,641,424)</u>	<u>(284,930,573)</u>	<u>(274,901,942)</u>	<u>(258,834,581)</u>	<u>(238,560,893)</u>
Net change in Total Pension Liability	\$223,492,270	\$251,314,350	\$136,756,422	\$171,787,088	\$186,433,457
Total Pension Liability - beginning	<u>5,367,731,521</u>	<u>5,116,417,171</u>	<u>4,979,660,749</u>	<u>4,807,873,661</u>	<u>4,621,440,204</u>
Total Pension Liability - ending (a)	<u>\$5,591,223,791</u>	<u>\$5,367,731,521</u>	<u>\$5,116,417,171</u>	<u>\$4,979,660,749</u>	<u>\$4,807,873,661</u>
Plan Fiduciary Net Position					
Contributions - employer	\$188,578,414	\$167,311,608	\$155,780,373	\$138,493,099	\$129,618,309
Contributions - member	36,357,591	35,476,023	34,627,061	33,193,593	32,758,587
Net investment income	269,418,157	243,496,177	(16,668,287)	16,342,457	490,196,386
Benefit payments, including refunds of member contributions	(300,641,424)	(284,930,573)	(274,901,942)	(258,834,581)	(238,560,893)
Administrative expenses	<u>(2,170,638)</u>	<u>(2,050,848)</u>	<u>(2,112,595)</u>	<u>(1,896,614)</u>	<u>(1,884,827)</u>
Net change in Plan Fiduciary Net Position	\$191,542,100	\$159,302,387	(\$103,275,390)	(\$72,702,046)	\$412,127,562
Plan Fiduciary Net Position - beginning	<u>3,749,384,616</u>	<u>3,590,082,229</u>	<u>3,693,357,619</u>	<u>3,766,059,665</u>	<u>3,353,932,103</u>
Plan Fiduciary Net Position - ending (b)	<u>\$3,940,926,716</u>	<u>\$3,749,384,616</u>	<u>\$3,590,082,229</u>	<u>\$3,693,357,619</u>	<u>\$3,766,059,665</u>
Net Pension Liability - ending (a)-(b)	<u>\$1,650,297,075</u>	<u>\$1,618,346,905</u>	<u>\$1,526,334,942</u>	<u>\$1,286,303,130</u>	<u>\$1,041,813,996</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	70.5%	69.9%	70.2%	74.2%	78.3%
Covered Payroll	<u>\$745,663,954</u>	<u>\$730,618,376</u>	<u>\$708,414,611</u>	<u>\$686,288,895</u>	<u>\$671,597,456</u>
Net Pension Liability as a Percentage of Covered Payroll	221.3%	221.5%	215.5%	187.4%	155.1%

This schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

The total pension liability contained in this schedule was calculated by Cheiron, the System's Actuary. The net pension liability is measured as the total pension liability less the amount of the fiduciary net position of the Employees' Retirement System.

Required Supplementary Information
(continued)

Schedule of Net Pension Liability					
Year Ended June 30					
	2018	2017	2016	2015	2014
Total Pension Liability	\$5,591,223,791	\$5,367,731,521	\$5,116,417,171	\$4,979,660,749	\$4,807,873,661
Plan Fiduciary Net Position	<u>3,940,926,716</u>	<u>3,749,384,616</u>	<u>3,590,082,229</u>	<u>3,693,357,619</u>	<u>3,766,059,665</u>
Net Pension Liability	<u>\$1,650,297,075</u>	<u>\$1,618,346,905</u>	<u>\$1,526,334,942</u>	<u>\$1,286,303,130</u>	<u>\$1,041,813,996</u>
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This schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

Schedule of Money-Weighted Rate of Return	
Fiscal Year	Annual Money-Weighted Rate of Return, Net of Investment Expense
2018	7.3%
2017	6.9%
2016	-0.4%
2015	0.5%
2014	14.9%
2013	5.4%
2012	8.5%
2011	23.7%
2010	25.4%
2009	-24.1%

Required Supplementary Information

(continued)

Schedule of Employer Contributions					
Fiscal Year	Contributions in Relation to the			Covered Payroll	Contributions as a Percentage of Covered Payroll
	Actuarially Determined Contributions	Actuarially Determined Contribution	Contribution Deficiency (Excess)		
2018	\$188,578,414	\$188,578,414	\$ -	\$745,663,954	25.29%
2017	167,311,608	167,311,608	-	730,618,376	22.90%
2016	155,780,373	155,780,373	-	708,414,611	21.99%
2015	138,493,099	138,493,099	-	686,288,895	20.18%
2014	129,618,309	129,618,309	-	671,597,456	19.30%
2013	127,448,018	127,448,018	-	669,018,467	19.05%
2012	114,682,538	114,682,538	-	666,758,942	17.20%
2011	96,607,535	96,607,535	-	657,194,116	14.70%
2010	64,069,102	64,069,102	-	659,825,973	9.71%
2009	65,110,832	65,110,832	-	676,827,775	9.62%

Notes to Schedule	
Valuation Date	6/30/2016
Timing	Actuarially determined contribution rates are calculated based on the actuarial valuation one year prior to the beginning of the plan year.
Key Methods and Assumptions Used to Determine Contribution Rates:	
Actuarial cost method	Entry Age
Asset valuation method	3-year smoothed market
Amortization method	Corridor method, amortize liability outside of 98% corridor over an open 15 year period with level % of payroll.
Discount rate	7.25%
Amortization growth rate	2.75%
Price inflation	2.75%
Salary increases	2.75% plus merit component based on employee's years of service
Mortality	110% and 100% of the RP-2014 Healthy Annuitant Mortality Table for males and females respectively projected using the RPEC-2015 model, with an ultimate rate of 0.75% for ages 20-85 grading down to an ultimate rate of 0% for ages 115-120 and convergence to the ultimate rate in the year 2015.
A complete description of the methods and assumptions used to determine contribution rates for the year ending June 30, 2018, can be found in the June 30, 2016, actuarial valuation report.	

Required Supplementary Information

Summary of Significant Changes to the Pension System

The summary of employer and employee contribution rates during the past five years and other significant changes in the pension system are as follows:

Contribution Rates		
Fiscal Year	Employer	Employee
2018	25.29%	4%, 51/3%
2017	22.90%	4%, 51/3%
2016	21.99%	4%, 51/3%
2015	20.18%	4%, 51/3%
2014	19.30%	4%, 51/3%

July 2017	Social Security offset reduced from 10 percent to 5 percent.
July 2016	Social Security offset reduced from 15 percent to 10 percent.
January 2014	Service-Connected Disability Social Security offset was reduced from 25.0 percent to 15.0 percent.
January 2013	Employees hired on or after January 1, 2013, will be automatically enrolled in Option C or elect to switch to Option D within 30 days of employment. The maximum amount of accrued sick leave is capped at 2,080 hours. Eligibility for normal service retirement is at age 55 or older if age plus years of service total 85 years or more; DROP does not include the Pre-Social Security benefit.

Other Supplementary Information

Schedule of Investment & Consultant Expenses

For the Year Ended June 30, 2018

Investment Activity Expenses		
Investment manager fees		\$37,071,470
Custodial fees		136,775
Consultant Expenses		
Consultant expenses		78,696
Allocated Administration Expense		<u>1,095,398</u>
Total investment and consultant expenses		<u>\$38,382,339</u>

Schedule of Administrative Expenses

as of June 30, 2018

Personnel services		
Salaries and wages	\$1,089,574	
Fringe benefits	<u>453,768</u>	
Total personnel services		\$1,543,342
Professional services		
Actuarial	120,225	
Audit	30,085	
Legal	<u>14,937</u>	
Total professional services		165,247
Communications		
Phone charges	19,883	
Printing, binding and copying	11,644	
Postage	<u>19,753</u>	
Total communications		51,280
Supplies		
Office supplies	<u>10,791</u>	
Total supplies		10,791
Other services and charges		
Staff travel and development	5,805	
Professional membership	1,739	
Professional subscriptions	1,902	
Insurance	50,662	
Building rent	91,392	
Depreciation expense	2,031	
Computer system	170,610	
Other operating	<u>75,837</u>	
Total other services and charges		<u>399,978</u>
Total Administrative Expenses		<u>\$2,170,638</u>



**Report of Independent Auditor on Internal Control over Financial Reporting and on
Compliance and Other Matters Based on an Audit of Financial Statements
Performed in Accordance with *Government Auditing Standards***

To Board of Supervisors
County of Fairfax, Virginia

To the Board of Trustees
Fairfax County Employees' Retirement System

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Fairfax County Employees' Retirement System (the "System"), a pension trust fund of the County of Fairfax, Virginia, as of and for the year ended June 30, 2018 and the related notes to the financial statements, and have issued our report thereon dated November 5, 2018.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the System's internal control over financial reporting ("internal control") to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the System's internal control. Accordingly, we do not express an opinion on the effectiveness of the System's internal control.

A *deficiency in internal control exists* when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or, significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the System's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.



Tysons Corner, Virginia
November 5, 2018



County of Fairfax, Virginia

To protect and enrich the quality of life for the people, neighborhoods and diverse communities of Fairfax County

October 18, 2018

Dear Members of the Board of Trustees:

The U.S. economy continued its near historically long growth streak over the fiscal year ending June 30, 2018. The Federal Reserve Bank continued its path of slowly tightening monetary policy, in contrast to most other central banks whose stimulative low interest rate policies are expected to persist into 2019 and perhaps beyond. U.S. equities posted their ninth consecutive year of positive returns, and outperformed international equities with the S&P 500 index gaining 14.4% versus 6.8% for the MSCI EAFE Index. Foreign equity markets were impacted by anti-establishment political trends and fears over U.S. trade policy changes. Emerging market equities underperformed the U.S. but outperformed developed international equities, though volatility saw an uptick toward the end of the year as the markets reacted to U.S. dollar strength and trade policy uncertainty. Higher interest rates resulted in a second year of negative returns for U.S. high quality fixed income, with the Bloomberg Barclays U.S. Aggregate Bond Index declining by 0.4%.

The large cap domestic equity market, as measured by the S&P 500 Index, capped off the fiscal year with a 14.4% return with all smaller cap domestic equity indices posting even greater returns. The domestic bond market, as measured by the Barclays Aggregate Bond Index, returned -0.4% over the same period. The global equity market, as measured by the MSCI All Country World Index (net), returned 10.7% for the fiscal year, and emerging markets posted slightly lower returns with the MSCI EM Index returning 8.2% over the fiscal year ending June 30, 2018.

During the quarter ended September 30th, 2017, global equities posted returns of 5.2%, according to the MSCI ACWI Index. Small-cap stocks bested large-cap equities. Returns, in U.S. dollar terms, were boosted by a stronger euro, sterling and Canadian dollar. Energy, materials and information technology led performance; regionally, Norway, Italy and Portugal were top performers. At home, the S&P 500 gained 4.5% and the Russell 2000 Index returned 5.7% for the three months ended September 30. Growth bested value; economic growth overshadowed the fallout from hurricanes and floods, and the threat of a nuclear outburst between the U.S. and North Korea, confounding ever-expanding valuations of financial assets. Emerging market stocks maintained their lead with gains of 7.9%, according to the MSCI Emerging Markets Index, aided by Brazil, Russia and China. Real estate was the top-performing sector, dominated by China. Energy took second place with higher oil prices fueling returns. U.S. credit also fared well in the quarter ending September 30th, 2017. The Barclays U.S. Aggregate Index was in the black, pushing returns of the 2017 calendar year to just over 3.0%. High-yield debt was up 2.0% with spreads modestly tighter than the second quarter; the S&P LSTA Leveraged Loan Index returned 1.0% in the third quarter of 2017, bringing gains so far in 2017 to 3.0%. The Barclays Long Treasury Index gained 0.6%, the Barclays Long Credit Index was up 2.2%, and the Barclays Long Government/Credit Index returned 1.5%. Yields compressed 10 basis points in the third quarter of 2017 for the Long Credit and Long Government/Credit Indices to 4.2% and 3.6%, respectively. The long Treasury yield remained



Fairfax County Retirement Systems

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www.fairfaxcounty.gov/retirement/

unchanged at 2.8%. As in public equities, emerging markets led the pack. Emerging-market local-sovereign debt returned 3.6%, clocking returns so far in 2017 of over 14%, helped, in large part, by currency appreciation.

Global equities returned 5.7% in the fourth quarter of 2017 and 24% for the year. Global stocks saw earnings per share rise nearly 19% in 2017, according to FactSet, the fastest growth since 2011. The S&P 500 Index was up 6.6% in the fourth quarter of 2017, bolstered by the prospect of corporate tax cuts. Maintaining their lead, emerging market equities gained 7.4% in the fourth quarter of 2017 and ended the year with returns of 37.3%. Healthcare and consumer discretionary dominated sector performance for the quarter, while utilities and telecommunication services lagged. Information technology led in 2017, largely driven by one stock, Chinese internet giant Tencent, which was up 114.3% for the year. Among countries, South Africa, Greece and India led performance, while Malta, Mexico and Pakistan were the stragglers. Credit also didn't miss a beat in the fourth quarter of 2017. The U.S. yield curve flattened as short rates rose but longer-dated bond yields declined. The Bloomberg Barclays U.S. Aggregate gained 0.4% in the fourth quarter. Long Treasuries and long credit maintained their trajectory, returning 2.4% and 3.2%, respectively, in the quarter. US high yield gained 0.5%, while the S&P Leveraged Loans Index posted a 1.1% return. Outside of the U.S., the rally continued within emerging markets. Emerging market currencies were the outperformer, up 2%. Local debt, largely helped by currencies, returned 80 basis points.

Volatility dulled returns in the first quarter of 2018 amid heightening concerns around trade tensions between the United States and China. Developed market stocks outside of North America declined 1.5%, according to the MSCI EAFE Index, while emerging market equities eked out gains of 1.4%. The currency-hedged MSCI EAFE Index lost 4.3% during the quarter as most currencies strengthened against the dollar. U.S. stocks fell 3.7% in February, snapping their 15-month winning streak; they ended the quarter in the red, losing a modest 0.8%. Information technology dominated sector performance, posting strong returns globally. Credit was mostly subdued in the first quarter of 2018 with the Bloomberg Barclays Aggregate down 1.5% and the Bloomberg Barclays High Yield Index losing 0.9%; breaking from the pack, the S&P LSTA Leveraged Loan Index was up 1.4%. U.S. long credit was down 3.8%, while long Treasuries fell 3.3% with yields on the 10-year note at 2.74%. Outside the U.S., emerging markets continued to rally with local debt leading the way. The JPM GBI-EM Index returned 4.4% in the first quarter of 2018, bolstered by emerging market currencies which were up 2.5%. Hard-currency sovereign debt didn't fare as well, falling 2.0% as spreads widened.

Global equities eked out a modest 0.5% in the second quarter of 2018, according to the MSCI ACWI Index. Growth stocks outperformed value while large-cap equities bested small caps in non-U.S. markets. Bolstered by rising oil prices, energy was the strongest performing sector with gains of 10.3%. Financials and telecom sectors lagged with losses of 5.6% and 4.1%, respectively. Excluding the U.S., developed market equities were in the red at 1.2%, according to the MSCI EAFE Index, as a stronger U.S. dollar erased gains in local equity markets. The S&P 500 returned 3.4%, buoyed by a robust employment report with joblessness hitting an 18-year old low in May. Value beat growth in small-cap stocks while growth outperformed value in the large caps; small-cap stocks bested large caps. Emerging markets took a hit with stocks posting their worst quarter since 2015 with losses of nearly 8% in the second quarter of 2018, according to the MSCI EM Index. Within sectors, financials, real estate and industrials were the worst performers. Emerging market currencies sold off as the U.S. dollar strengthened and the 10-year Treasury yield breached 3% for the first time in almost five years. Of note, MSCI said it would add 236 China A-share stocks to its emerging markets index, in addition to including Argentina and Saudi Arabia. The Bloomberg Barclays Aggregate Index was down 0.2% as corporate spreads remained relatively flat in the second Quarter of 2018. The Bloomberg Barclays High Yield Index gained 1%, while the S&P LSTA Leveraged Loan Index was up 0.7% with loans leading high-yield performance so far this year. The U.S. Long Credit Index fell 2.7% and the U.S. Long Treasury gained 0.3% with the 10-year now yielding 2.86%.

Employees' System

For fiscal year 2017 the Employees' Retirement System continued to focus on optimizing and diversifying the portfolio and implementing a diversified investment program to achieve the System's strategic long-term goals. This disciplined investment process has been effective in achieving a long-term record of consistent asset growth.

As of June 30th, 2018, the Fairfax County Employees' Retirement System stood at \$3.940 billion, up from \$3.749 billion at the end of fiscal year 2017. Calculating performance using a time-weighted rate of return, for the year ending June 30th, 2018, the system returned +8.00% gross of fees (7.28% net of fees), ranking in the 67th percentile of all public funds in the BNY Mellon Total Public Fund Universe. For the three and five-year periods (annualized), the system returned, gross of fees, +5.10% (+4.53% net of fees), ranking in the 88th percentile, and +6.15% gross of fees (+5.67% net of fees) ranking in the 90th percentile, respectively.

During the past twelve months, the System continued to focus on further diversifying risk and implementing the previously adopted changes to long term asset allocation targets. The Crestline Opportunity Fund III, PIMCO BRAVO Fund III and DoubleLine Mortgage Opportunity Fund were added to the Private Credit portfolio, and Pinnacle Arcadia Cattle Partners was added to the Global Real Assets lineup. ESG Nexus was terminated as a portfolio level hedging strategy and Nicholas US Equity, First Eagle International Developed Equity, and QMA International Emerging Equity were all replaced with exchange traded fund vehicles.

Sincerely,



Andrew J. Spellar
Chief Investment Officer
Fairfax County Employees' Retirement System

Investment Section

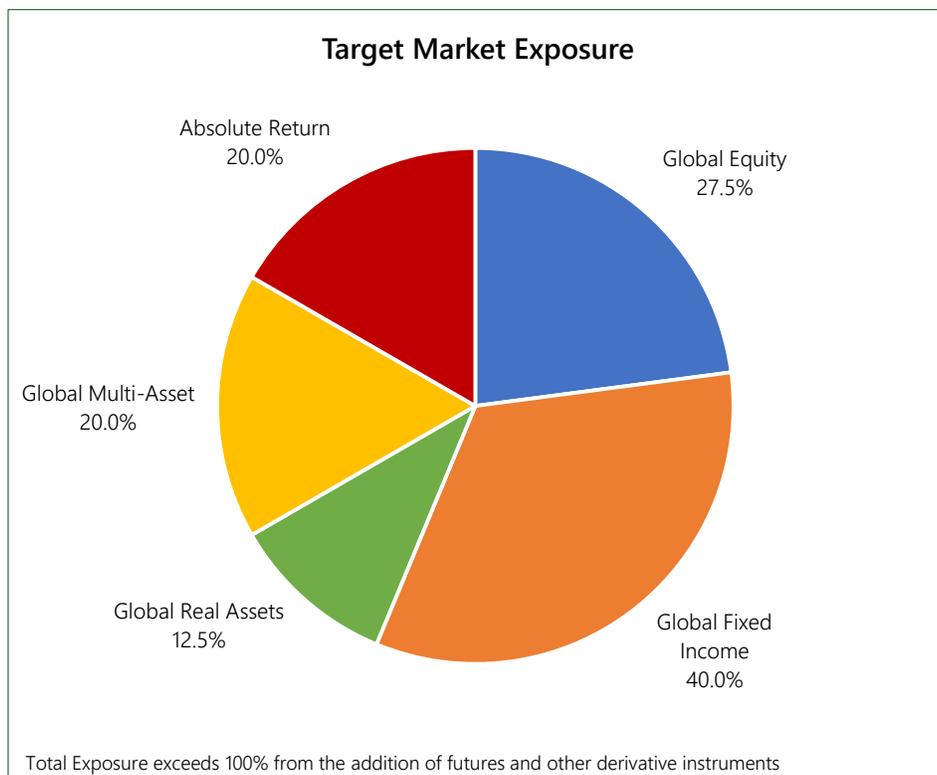
Investments by Category and Investment Manager**				
For Year Ended June 30, 2018				
Asset Class	Manager	Investment Style	Fair Value	% of Total Portfolio
Absolute Return				
	AlphaSimplex Group*	Global Macro	\$74,042,293	1.88%
	AQR Style Premia*	Relative Value	71,335,855	1.81%
	BlackRock GlobalAlpha Fund*	Relative Value	78,598,854	1.99%
	Bridgewater Pure Alpha*	Global Macro	209,350,575	5.31%
	Millennium Management*	Relative Value	85,105,004	2.16%
	PIMCO Global Credit Opportunity*	Relative Value	82,401,689	2.09%
	PIMCO PARS IV*	Global Macro	73,295,121	1.86%
	QMS Global Macro*	Global Macro	75,338,650	1.91%
Global Equity				
	Aberdeen Asset Management*	Int'l Emerging Markets	56,448,311	1.43%
	Axiom International Investors	Int'l Developed Small Cap	137,268,809	3.48%
	Capstone Investment Advisors*	U.S. Large Cap Value	87,090,320	2.21%
	DePrince, Race & Zollo	U.S. Large Cap Value	104,669,612	2.66%
	Dyal Capital Partners*	Private Equity	21,605,638	0.55%
	International Equity ETF Portfolio	Int'l Developed Markets Value	58,356,873	1.48%
	Marathon Asset Management*	Int'l Developed Markets	154,046,861	3.91%
	Sands Capital Management	U.S. Large Cap Growth	113,370,248	2.88%
	US Equity ETF Portfolio	U.S. Large Cap Value	59,126,159	1.50%
	Vanguard Emerging Markets ETF	Int'l Emerging Markets	47,199,856	1.20%
	WCM Investment Management	Int'l Developed Markets Growth	107,178,373	2.72%
Global Fixed Income				
	Brandywine Asset Management	Global Bonds	159,681,512	4.05%
	BlackRock Multi-Alternative Opportunities Fund*	Private Credit	10,013,810	0.25%
	Bridgewater Associates*	Inflation-Linked	120,687,985	3.06%
	Crestline Management, L.P.*	Private Credit	20,451,596	0.52%
	Czech Asset Management*	Private Credit	27,991,649	0.71%
	Double Line Capital CMBS/CRE*	Private Credit	36,427,666	0.92%
	Double Line Capital DMO*	Private Credit	43,616,495	1.11%
	DoubleLine Capital SMBS	Mortgage-Backed Securities	156,363,657	3.97%
	Hoisington Investment Management Company	U.S. Treasuries	80,562,416	2.05%
	Lazard Asset Management*	Emerging Markets Debt	77,442,941	1.97%
	Marathon European Credit Opportunity Fund III*	Private Credit	35,874,585	0.91%
	PIMCO BRAVO*	Private Credit	59,537,160	1.51%
	PIMCO Tactical Opportunities*	High Yield Bonds	46,261,728	1.17%
	Post Advisory	High Yield Bonds	62,354,141	1.58%
	Shenkman Capital Management	High Yield Bonds	121,135,859	3.07%
Global Multi-Asset				
	AQR Global Risk Premium*	Core Risk Parity	78,300,799	1.99%
	BlackRock Market Advantage*	Core Risk Parity	131,615,811	3.34%
	Bridgewater Optimal Portfolio*	Active Risk Parity	197,722,510	5.02%
	Parametric & FCERS Dynamic Balanced Risk	Active Risk Parity	200,503,840	5.09%
Global Real Assets				
	Cohen & Steers Capital Management	U.S. Real Estate Securities	124,882,136	3.17%
	Cohen & Steers Capital Management	Int'l Real Estate Securities	72,842,769	1.85%
	Deutsche Asset Management*	Multi-Real Asset	81,513,885	2.07%
	PIMCO All Asset All Authority	Commodity Futures	71,916,329	1.82%
	Landmark Partners*	Real Estate	5,713,080	0.14%
	Pinnacle Associates GP, LLC*	Real Assets	37,098,625	0.94%
	JPMorgan Global Maritime Fund*	Real Assets	16,520,830	0.42%
Short Term and Others				
	BNY Mellon Cash Management	Plan Level Cash Account	15,079,946	0.38%
	BNY Mellon Cash Investment Strategies STIF	Plan Level Cash Account	5,871,884	0.15%
	Cash Held at County Treasurer	Operating Cash Account	6,722,924	0.17%
	FCERS Orphan Securities Account	Operating Cash Account	232,124	0.01%
	Parametric Portfolio Associates LLC	Overlay	140,124,602	3.56%
Total Investments			\$3,940,894,395	100.00%
* Pooled Funds			** See pages 8-9 for complete listing of investment professionals	

Employees' Retirement System – Allocation of Market Exposures

Target Market Exposures

The asset structure shown below represents the Trustees' assessment of their optimal asset allocation as of June 30, 2018. The target asset allocation provides a reasonable expectation that the System's investment objectives can be achieved based on historical relationships of asset class performance.

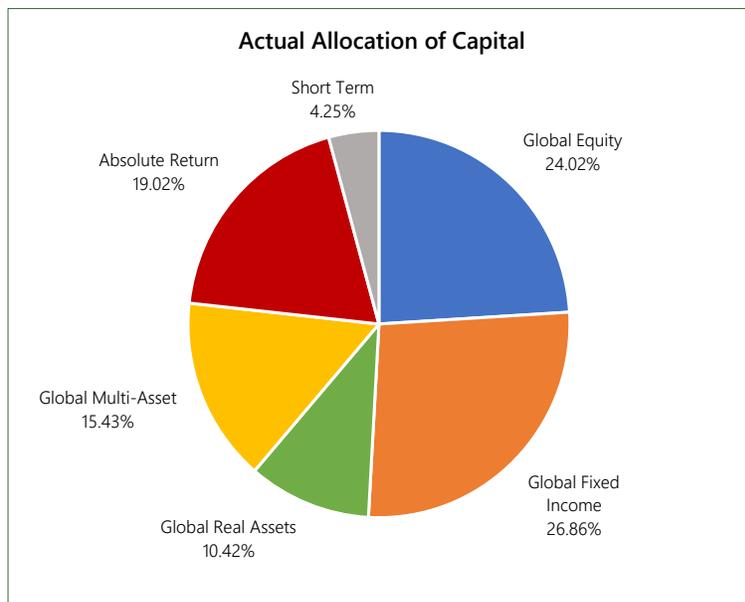
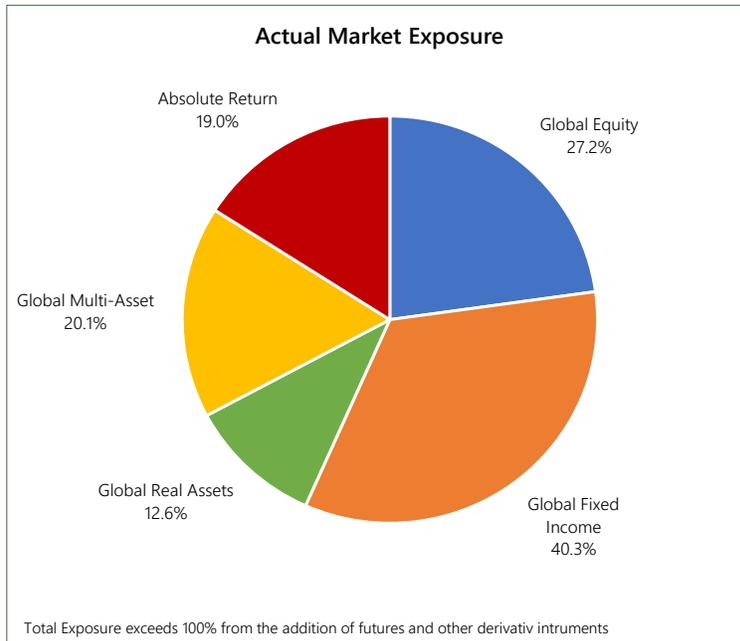
The pie chart below details the target asset mix, consistent with the achievement of the long-term objectives of the System, as of June 30, 2018.



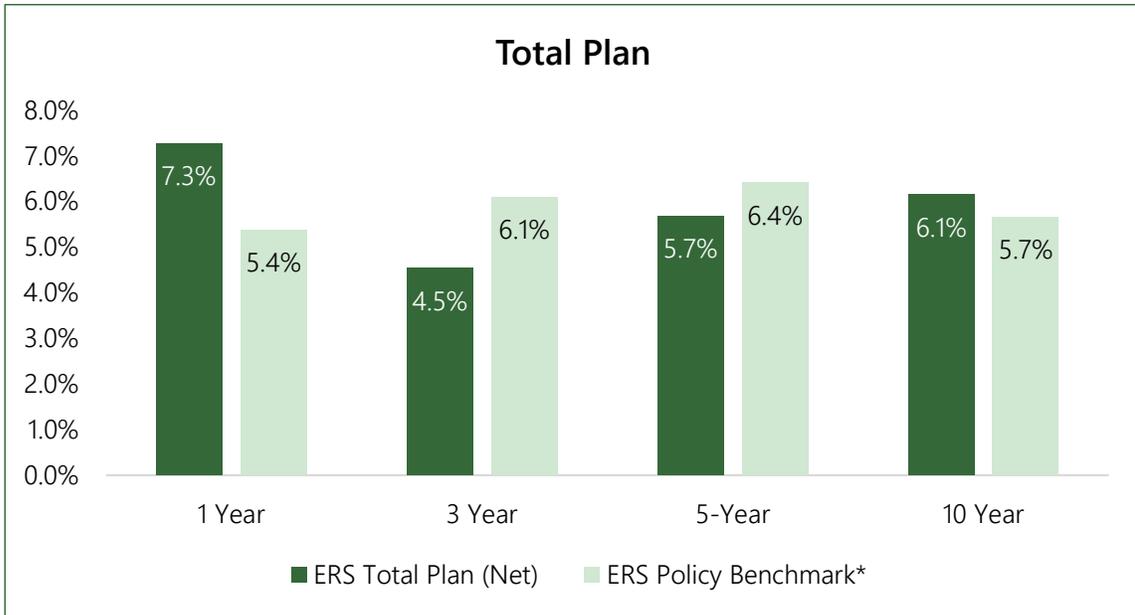
Actual Allocations as of June 30, 2018

The asset structure of the Employees' Retirement System has historically reflected a proper balance of the System's needs for liquidity, growth of assets, and risk tolerance. The System's investment policy is designed to continue to meet its long-term investment objectives while, at the same time, providing sufficient flexibility to meet short-term funding requirements.

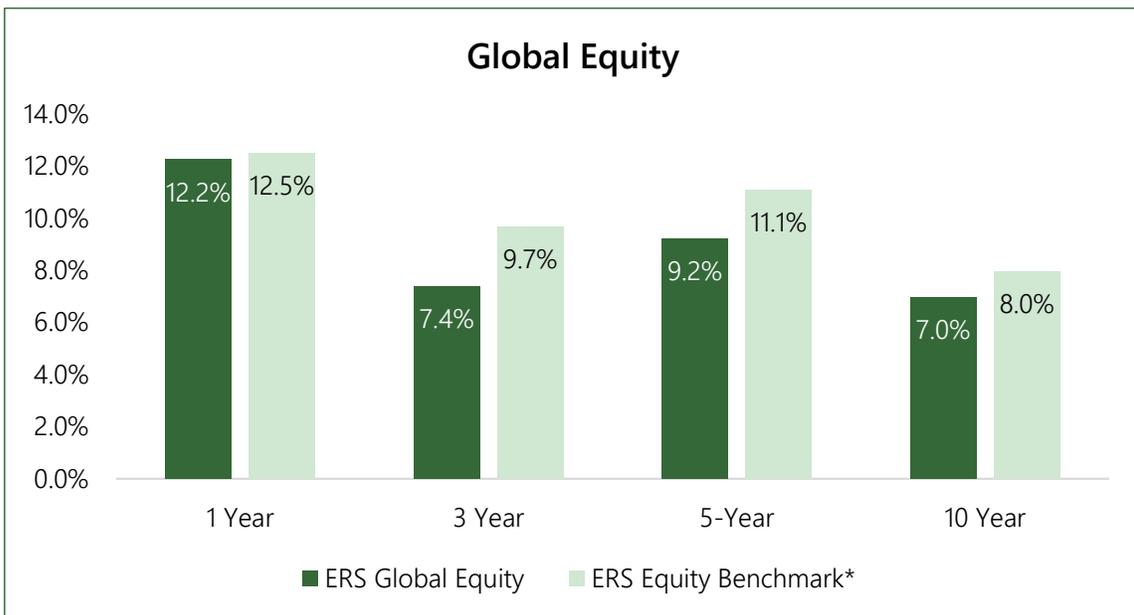
The pie chart below details the actual asset allocations as of June 30, 2018.



Investment Results
(Time-weighted return, net of fees)

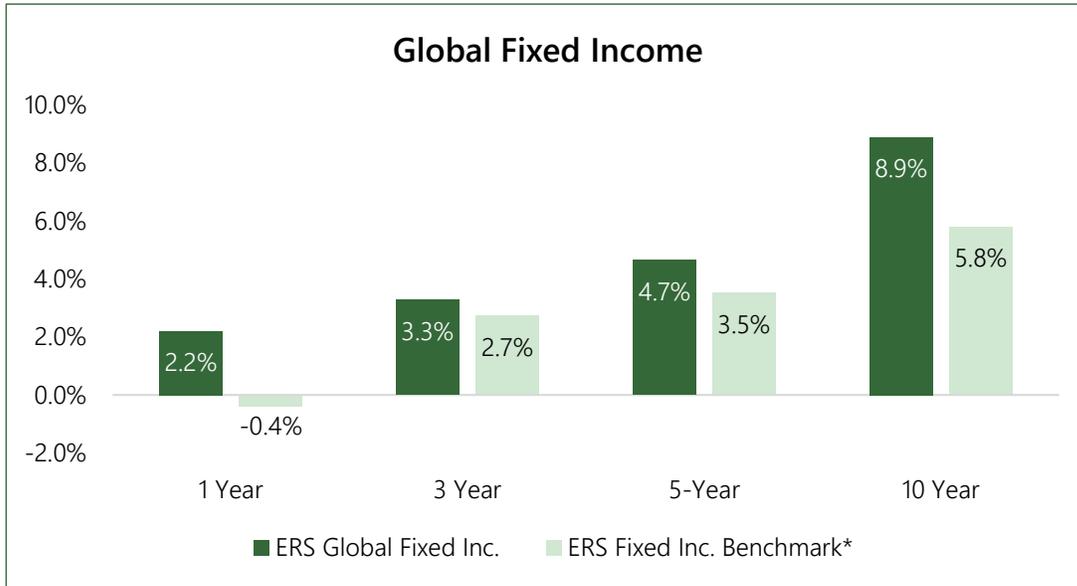


*Current Benchmark: Russell 3000 – 16.5%; MSCI World ex-US – 8.25%; MSCI EM – 2.75%; Bloomberg Barclays Agg. x1.33 minus ICE 3-Mo. LIBOR x0.33 – 27.5%; Bloomberg Barclays High Yield – 12.5%; Real Asset Blended Benchmark – 12.5%; Risk Parity 10% Vol. Benchmark – 20.0% (Benchmark has been revised through time)

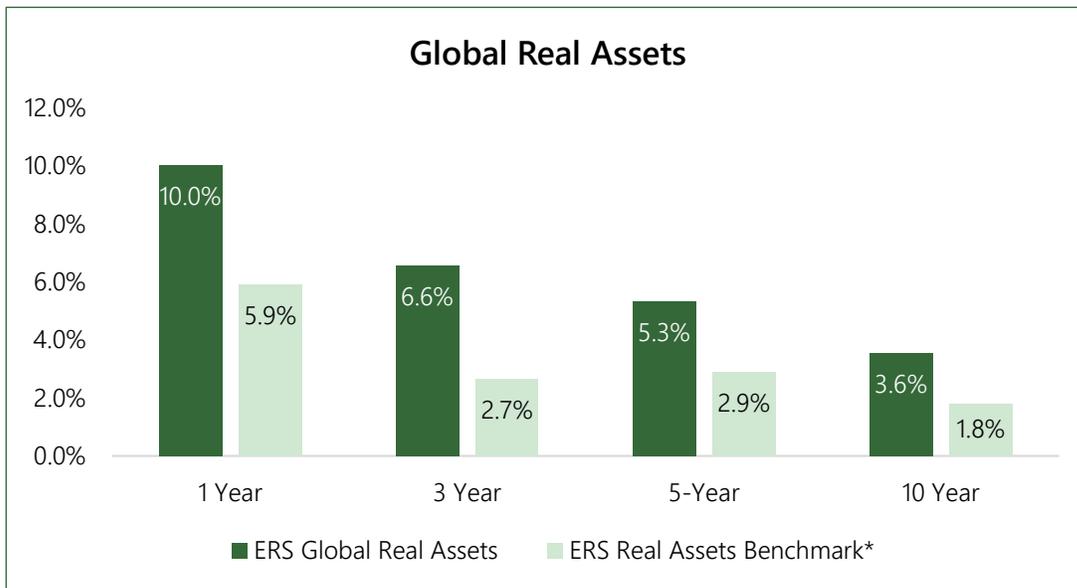


*Current Benchmark: Russell 3000 – 60.0%; MSCI World ex-US – 30.0%; MSCI EM – 10.0; (\$Gross) (Benchmark has been revised through time)

Investment Results
(Time-weighted return, net of fees)

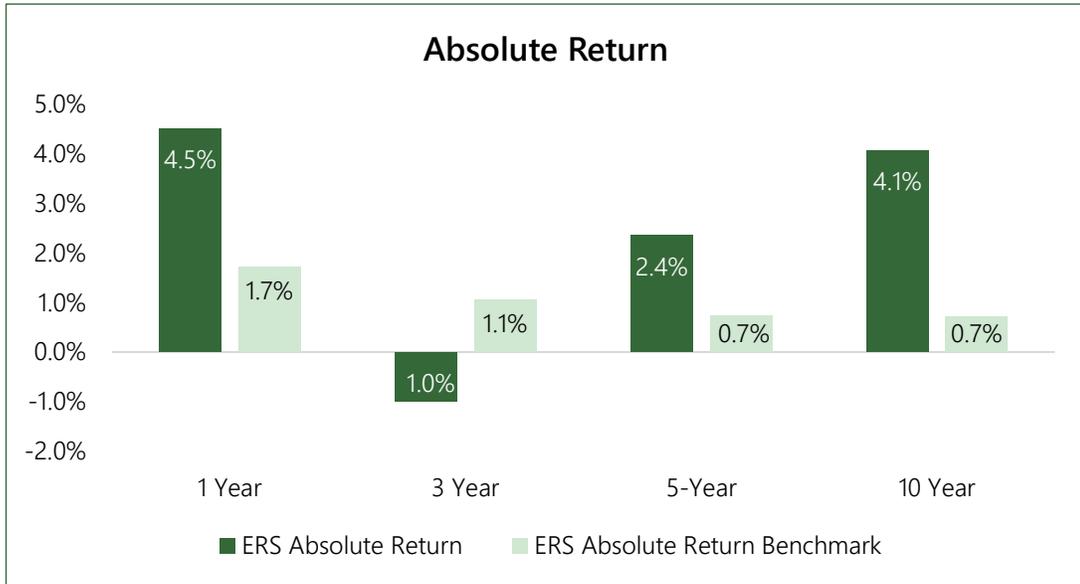


*Current Benchmark: Bloomberg Barclays Agg. x1.33 minus ICE 3-Mo. LIBOR x0.33 – 68.75%; Bloomberg Barclays High Yield – 31.25% (Benchmark has been revised through time)

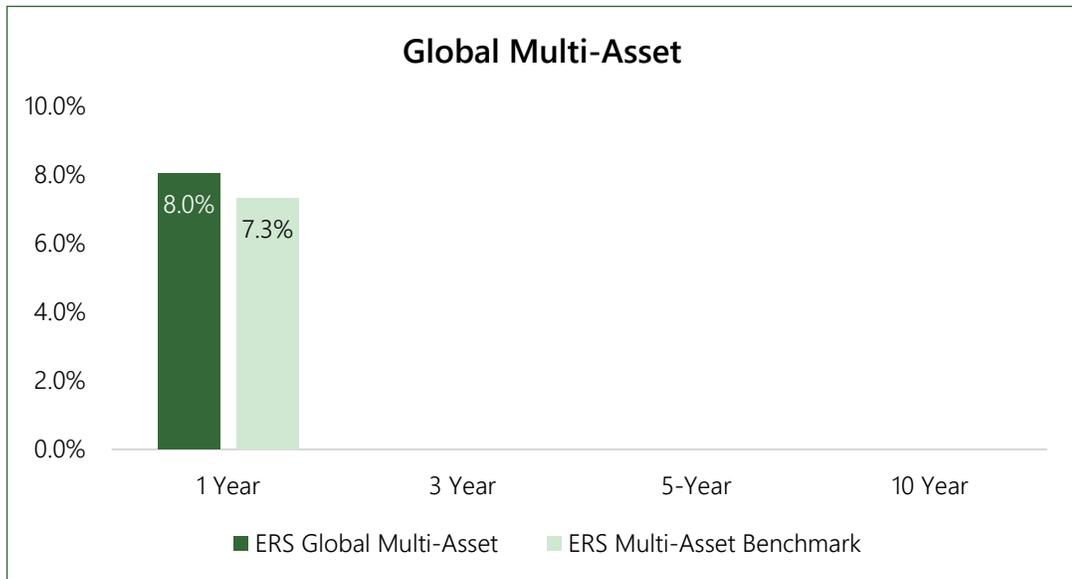


*Current Benchmark: FTSE/NAREIT Developed – 33.3%; DJ Brookfield Infrastructure – 33.3%; Bloomberg Commodity 33.3% (Benchmark has been revised through time)

Investment Results
(Time-weighted return, net of fees)



*Current Benchmark: ICE 3-Mo. LIBOR (Benchmark has been revised through time)



*Current Benchmark: MSCI ACWI Index (Local) – 25.0%; Bloomberg Commodity – 25.0%; Barclays World I/L Bonds – 75.0%; Barclays Gbl TSY 7-10yr (H) – 75.0%; ICE 3-Month LIBOR – -100%; (Benchmark has been revised through time)

Schedule of Ten Largest Equity & Fixed Income Holdings

Ten Largest Equity Holdings*				
No. Shares	Description	Cost	Fair Value	% of Total Portfolio
6,050	Amazon.com Inc	\$3,873,163	\$10,283,790	0.26%
62,500	Visa Inc	1,697,267	8,278,125	0.21%
20,200	Netflix Inc	2,192,538	7,906,886	0.20%
42,200	Alibaba Group Holdings Ltd	4,192,483	7,829,366	0.20%
47,700	Salesforce.com Inc	1,390,275	6,506,280	0.17%
27,057	Essex Property Trust Inc	6,355,901	6,468,517	0.16%
168,548	UDR Inc	4,702,576	6,327,292	0.16%
36,300	Servicenow Inc	3,560,586	6,260,661	0.16%
92,141	Prologis Inc	4,545,773	6,052,742	0.15%
13,776	Equinix Inc	<u>4,519,797</u>	<u>5,922,165</u>	<u>0.15%</u>
	Total	<u>\$37,030,359</u>	<u>\$71,835,824</u>	<u>1.82%</u>

*Full disclosure of holdings is available upon request.

Ten Largest Fixed Income Holdings*				
Par Value (in local values)	Description	Cost (in U.S. Dollars)	Fair Value (in U.S. Dollars)	% of Total Portfolio
21,144,463	US Treas-CPI Inflat, 0.125%, 07/15/2026	\$20,249,024	\$20,256,607	0.51%
23,030,000	US Treasury Bond, 2.250%, 08/15/2046	19,184,412	19,834,588	0.50%
21,700,000	US Treasury Bond, 2.500%, 02/15/2046	19,081,590	19,729,206	0.50%
18,522,617	US Treas-CPI Inflat, 1.375, 01/15/2020	18,896,226	18,731,182	0.48%
18,375,000	US Treasury Note, Var Rt, 07/31/2019	18,381,520	18,392,273	0.47%
17,990,000	US Treasury Bond, 2.500%, 05/15/2046	17,410,019	16,346,973	0.41%
13,520,209	US Treas-CPI Inflat, 0.125%, 07/15/2024	13,195,975	13,142,320	0.33%
12,617,844	US Treas-CPI Inflat, 0.625%, 04/15/2023	12,535,447	12,594,501	0.32%
10,459,166	US Treas-CPI Inflat, 0.625%, 02/15/2043	9,863,076	9,897,823	0.25%
20,900,000	US Treasury Bd Prin Strip, 0.000%, 11/15/2045	<u>9,769,834</u>	<u>9,289,423</u>	<u>0.24%</u>
	Total	<u>\$158,567,123</u>	<u>\$158,214,896</u>	<u>4.01%</u>

*Full disclosure of holdings is available upon request.

Schedule of Brokerage Commissions

For Year Ended June 30, 2018

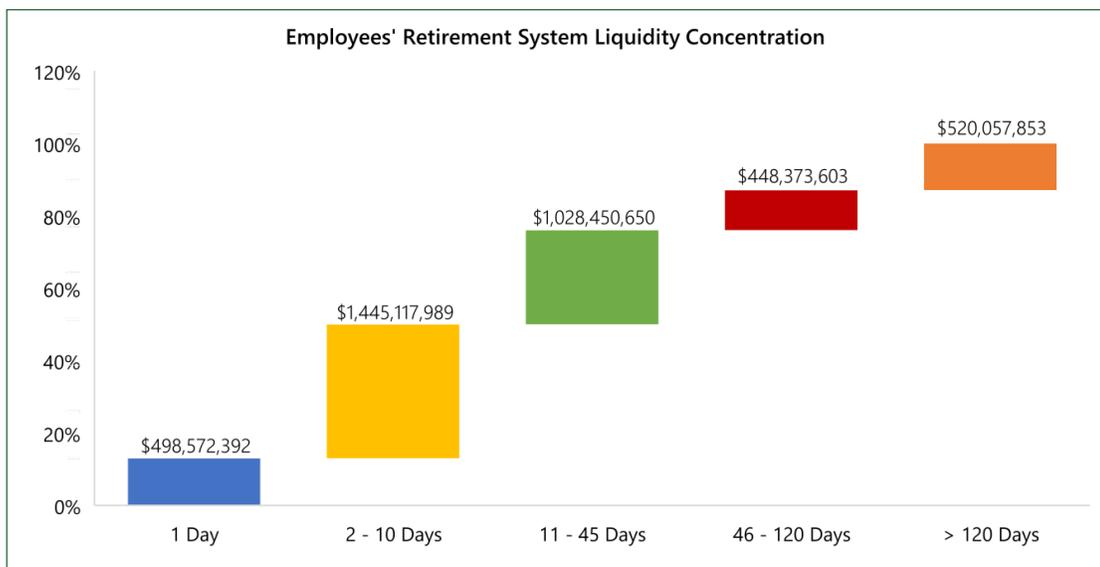
Broker Name	Base Volume	Total Shares	Base Commission	Commission Percentage
Goldman Sachs & Co, Ny	\$187,960,867	1,741,459	\$358,898	0.19%
J P Morgan Secs Ltd, London	29,312,170	2,665,800	52,667	0.18%
Okasan International (Asia), Hong Kong	18,382,630	953,510	27,569	0.15%
Esn North America Inc, New York	5,457,695	254,953	8,170	0.15%
Berenberg Gossler & Cie, Hamburg	10,434,974	478,235	15,066	0.14%
Citigroup Gbl Mkts/Salomon, New York	15,366,940	2,757,319	21,881	0.14%
D Carnegie Ab, Stockholm	12,730,797	603,860	17,163	0.13%
Mizuho Securities Usa Inc. New York	20,216,056	918,100	26,912	0.13%
Mitsubishi Ufj Securities, New York	8,504,356	503,364	11,280	0.13%
Newedge USA Llc, New York	36,697,785	3,592	46,402	0.13%
Daiwa Secs Amer Inc, New York	5,283,044	711,838	6,278	0.12%
Merrill Lynch Intl London Equities	12,194,655	903,051	13,580	0.11%
Wells Fargo Securities, Llc, New York	4,483,203	98,705	4,935	0.11%
SMBC Securities, Inc New York	6,897,666	467,507	7,133	0.10%
Citigroup Gbl Mkts Inc, New York	6,888,773	187,248	6,992	0.10%
Credit Suisse, New York	15,583,083	2,302,981	15,411	0.10%
Warburg Dillion Read Sec, Mumbai	5,977,498	684,620	5,848	0.10%
Wells Fargo Securities Llc, Charlotte	4,611,684	110,375	4,350	0.09%
UBS Warburg Asia Ltd, Hong Kong	13,100,690	9,751,796	11,898	0.09%
Ubs Securities Llc, Stamford	11,014,079	360,330	9,402	0.09%
Sanford C Bernstein & Co Inc, London	7,614,777	545,416	6,488	0.09%
Macquarie Bank Ltd, Hong Kong	8,908,945	2,345,446	7,392	0.08%
Instinet Europe Limited, London	65,308,742	2,888,932	50,367	0.08%
Guggenheim Capital Markets Llc, New York	6,359,718	154,788	4,802	0.08%
Societe Generale London Branch, London	34,646,131	2,081,079	24,858	0.07%
Rbc Capital Markets Llc, New York	4,698,369	153,734	3,335	0.07%
Abg Sec As (Norge), Filial, Stockholm	4,526,198	349,664	3,169	0.07%
Sg Sec (London) Ltd, London	6,314,251	700,323	4,351	0.07%
Stifel Nicolaus	10,288,627	172,725	6,816	0.07%
Baird, Robert W & Co Inc, Milwaukee	4,777,039	65,314	2,962	0.06%
William Blair & Co, Chicago	8,408,284	104,190	5,210	0.06%
Raymond James & Assoc Inc, St Petersburg	6,234,645	92,239	3,777	0.06%
J.P. Morgan Clearing Corp, New York	38,501,813	1,591,189	23,289	0.06%
Pershing Llc, Jersey City	18,779,625	2,357,876	10,800	0.06%
Merrill Lynch Pierce Fenner Smith Inc Ny	99,390,129	2,004,089	56,304	0.06%
National Finl Svcs Corp, New York	24,780,268	621,538	13,966	0.06%
Jefferies & Co Inc, New York	20,018,775	560,439	10,338	0.05%
Bernstein Sanford C & Co, New York	41,629,050	3,521,816	21,140	0.05%
Barclays Capital Le, New York	15,043,034	218,351	6,485	0.04%
Deutsche Bk Secs Inc, Ny	73,432,552	5,061,014	31,538	0.04%
Barclays Capital Inc./Le, New Jersey	11,014,815	168,457	4,383	0.04%
Morgan Stanley & Co Inc, Ny	76,869,405	1,915,049	29,167	0.04%
Cowen and Company, Llc, Jersey City	17,617,090	298,696	6,133	0.03%
Cibc World Mkts Inc, Toronto	7,367,156	311,032	2,554	0.03%
Maxim Group, Jersey City	26,788,564	488,290	8,316	0.03%
Convergex Execution Solution, New York	8,228,783	115,520	1,733	0.02%
Hsbc Secs Inc, New York	10,255,872	7,904,581	2,132	0.02%
Bny Convergex Execution Sol, New York	11,826,799	695,885	2,385	0.02%
Fidelity Capital Markets, New York	13,997,252	126,640	2,722	0.02%
Macquarie Capital (Usa) Inc., New York	231,298,450	4,295,187	33,204	0.01%
Other Brokers	144,070,270	22,970,213	163,876	0.11%
Total	\$1,490,094,073	91,338,355	\$1,225,827	0.08%

Schedule of Management Fees by Asset Class		
For Year Ended June 30, 2018		
Asset Class	Fair Value	Management Fees
Absolute Return	\$749,468,041	\$13,778,189
Global Equity	946,361,060	5,899,067
Global Fixed Income	1,058,403,200	9,055,327
Global Multi-Asset	608,142,960	3,673,586
Global Real Assets	410,487,654	2,728,961
Short Term and Others	<u>168,031,480</u>	<u>1,936,340</u>
Total	<u>\$3,940,894,395</u>	<u>\$37,071,470</u>

Investment Summary				
(Based on Capital Allocation)				
	As of June 30, 2017		As of June 30, 2018	
	Fair Value	% Fair Value	Fair Value	% Fair Value
Absolute Return	\$707,607,644	18.87%	\$749,468,041	19.02%
Global Equity	1,020,965,404	27.23%	946,361,060	24.01%
Global Fixed Income	999,087,055	26.64%	1,058,403,200	26.86%
Global Multi-Asset	427,614,651	11.40%	608,142,960	15.43%
Global Real Assets	407,632,684	10.87%	410,487,654	10.42%
Short Term and Others	<u>187,174,755</u>	<u>4.99%</u>	<u>168,031,480</u>	<u>4.26%</u>
Total	<u>\$3,750,082,193.00</u>	<u>100.00%</u>	<u>\$3,940,894,395</u>	<u>100.00%</u>

Liquidity Snap Shot on June 30, 2018

The below liquidity chart for the Employees' Retirement System demonstrates how the pension fund's capital has been allocated to ensure sufficient liquidity to support short term uses of cash, such as retirement distributions, capital calls, potential daily margin calls and coverage ratio requirements on derivative notional balances. It details the liquidity concentration of the System's total capital allocated to investments by their redemption schedule (monthly, quarterly, annually or none), including the number of calendar days' notice that must be provided before the redemption of funds can be made.



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*Classic Values, Innovative Advice.*

October 15, 2018

Fairfax County Employees'
Retirement System
12015 Lee Jackson Memorial Hwy, Suite 350
Fairfax, Virginia 22033

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Fairfax County Employees' Retirement System as of June 30, 2018. The full results and analysis of that annual valuation will be presented in a full actuarial valuation report. The purpose of this actuarial section is to provide key information from that report and support the disclosure of Total Pension Liability that is presented in the Financial Section of this CAFR. For a more complete analysis, please see the full report.

Funding Objective

The funding objective of the System is to establish contribution rates that will remain level as a percentage of payroll over time. In order to achieve a more stable contribution rate, the County implemented a corridor funding method on July 1, 2002 (based on the July 1, 2001 valuation results). Under this approach, the current contribution rate is based on the normal cost rate and expense rate developed in the current valuation combined with an unfunded actuarial liability rate (UAL rate) based on assumption and plan changes since July 1, 2001 and a 15-year amortization of any amount by which the System's funded ratio is outside the corridor. The County is taking steps to increase the bottom of the corridor from the originally established 90% up to 100% by 2020. The Fiscal Year (FY) 2018 contribution was developed in the 2016 valuation report and was based on a corridor level of 98%.

Assumptions

The actuarial assumptions used in performing the June 30, 2018 valuation were recommended by the actuary and adopted by the Board of Trustees based on our most recent review of the System's experience for the five-year period ending June 30, 2015. The assumptions and methods used for funding purposes were developed in compliance with the actuarial standards of practice as they relate to pension plans. The assumptions reflect our understanding of the likely future experience of the System and the assumptions both individually and as a whole represent our best estimate for the future experience of the System. The results of this report are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the underlying assumptions, the results would vary accordingly.

Reliance on Others

In preparing our valuation, we relied on information (some oral and some written) supplied by the System. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standards of Practice No. 23.

Supporting Schedules

As a part of the 2018 actuarial valuation, Cheiron prepared the Analysis of Financial Experience, Schedule of Retirees and Beneficiaries Added to and Removed from the Rolls and Solvency Test provided in this Actuarial Section.

We are also responsible for the disclosures of Net Pension Liability and its components in the Financial Section. The information provided in Note 4 of the Financial Section comes from the Actuarial Valuation as of June 30, 2018.

Compliance with Code of Virginia §51.1-800

Code of Virginia §51.1-800 requires that the benefits provided to a retiree at age 65 from a local retirement system equal or exceed two-thirds of the allowance to which the employee would be entitled under the provisions of the Virginia Retirement System (VRS).

Although there is no formal procedure for making this comparison, we compared the least valuable rate under the Employees' Retirement System to the most valuable accrual rate under the VRS, making adjustments for the fact that employee contributions are required in excess of the VRS 5% rate. We found that the employer-provided accrual rates do exceed two-thirds of the most valuable employer-provided accrual rates under the VRS plan.

We certify that, to the best of our knowledge and understanding, the Fairfax County Employees' Retirement System satisfies the requirements of the Code of Virginia §51.1-800.

Certification

To the best of our knowledge, this section and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices that are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinions contained in this section. This section does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

This section was prepared for the Fairfax County Employees' Retirement System for the purposes described herein and for the use by the plan auditor in completing an audit related to the matters herein. Other users of this section are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to any other user.

Sincerely,
Cheiron



Fiona E. Liston, FSA
Principal Consulting Actuary



Coralie A. Taylor, FSA
Associate Actuary



Summary of Valuation Results

The Actuarially Determined Contribution rate for Fiscal Year (FY) 2018 was developed in the 2016 valuation report and was based on a corridor floor of 98%. For more information on the Corridor method please see the Funding Method section of this report.

Amounts disclosed in Note 4 of the Financial Section were developed in conjunction with the 2018 valuation.

Summary of Actuarial Assumptions and Methods

The entry age normal funding method is used to determine costs. Under this method, the County contribution has three components: the normal cost, the payment toward the unfunded actuarial liability, and the expense rate.

The normal cost is a level percent of pay cost which, along with the member contributions, will pay for projected benefits at retirement for each plan participant.

The actuarial liability is that portion of the present value of future benefits that will not be paid by future County normal costs or member contributions. The difference between this liability and funds accumulated as of the same date is referred to as the unfunded actuarial liability.

The expense rate is added to cover the System's administrative expenses.

Under the corridor funding method, the County's total contribution rate is equal to the normal cost rate plus the UAL amortization rates for changes due to assumption changes or amendments passed since July 1, 2001 plus the expense rate as long as the System's actuarial funded ratio remains within a corridor of 90% to 120%. If the funded ratio falls outside this corridor, a credit (if above 120%) or charge (if below 90%) will be established based on a 15-year amortization equal to the amount necessary to re-enter the corridor. Once the funded ratio is within the corridor, the contribution rate will return to the normal cost rate plus amortization of post-2001 changes plus

expense rate. The County is taking steps to increase the bottom of the corridor from the originally established 90% up to 100% by 2020. The Fiscal Year (FY) 2018 contribution was based on a corridor level of 98%.

Actuarial Value of Assets

For purposes of determining the County contribution to the System, we use an actuarial value of assets. The asset adjustment method dampens the volatility in asset values that could occur because of fluctuations in market conditions. Use of an asset smoothing method is consistent with the long-term nature of the actuarial valuation process.

In determining the actuarial value of assets, we calculate an expected actuarial value based on cash flow for the year and imputed returns at the actuarial assumption. This expected value is compared to the market value, and one-third of the difference is added to the preliminary actuarial value to arrive at the final actuarial value.

Changes since Last Valuation

None

Long Term Assumptions Used to Determine System Costs and Liabilities

**Demographic Assumptions
Healthy Mortality**

Annual Deaths Per 10,000 Members Mortality Projected to 2018		
Age	Male	Female
20	4	2
25	5	2
30	5	2
35	6	3
40	7	4
45	11	7
50	46	27
55	63	37
60	86	54
65	124	84
70	190	133
75	307	217
80	518	367
85	902	651
90	1,597	1,171
95	2,522	1,936
100	3,580	2,872

Post-retirement mortality shown

110% and 100% of the RP-2014 Healthy Annuitant Mortality Table for males and females, respectively, backed down to 2006 then projected using the RPEC-2015 model, with an ultimate rate of 0.65% for ages 20-85 grading down to an ultimate rate of 0% for ages 115-120 and convergence to the ultimate rate in the year 2015. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.

5% of pre-retirement deaths are assumed to be service-connected.

Disabled Mortality

Annual Deaths Per 10,000 Disabled Members

Mortality Projected to 2018		
Age	Male	Female
45	173	105
50	208	135
55	235	169
60	267	204
65	324	249
70	415	335
75	565	490
80	806	740

100% and 115% of the RP-2014 Disabled Annuitant Mortality Table for males and females, respectively, backed down to 2006 then projected using the RPEC-2015 model, with an ultimate rate of 0.65% for ages 20-85 grading down to an ultimate rate of 0% for ages 115-120 and convergence to the ultimate rate in the year 2015. The valuation uses fully generational projection of mortality improvements. Sample rates shown are projected through the valuation date.

**Termination of Employment
(Prior to Normal Retirement Eligibility)**

Annual Termination Rates Per 1,000 Members - County	
Service	Termination
0	176
5	72
10	39
15	19
20	10
25	4
30	0

Annual Termination Rates Per 1,000 Members - Schools	
Service	Termination
0	250
5	45
10	28
15	18
20	12
25	10
30	0

It is assumed that members who terminate before the earlier of age 45 or with age plus service equal to 60 elect to receive a refund of contributions instead of vested benefits.

Termination rates drop to zero three years prior to reaching Rule of 80 (or Rule of 85 for Plans C and D) retirement.

Disability

Annual Disabilities Per 10,000 Members*		
Age	Male	Female
25	2	1
30	2	1
35	2	1
40	3	2
45	7	6
50	14	11
55	21	17
60	27	21

*30% of disabilities are assumed to be service-connected. Of these, 5% are assumed to receive Social Security benefits and 31% are assumed to receive Workers' Compensation benefits.

No disability is assumed to occur once members reach eligibility for retirement.

Retirement/DROP

Annual (Male and Female)	
Age	Normal
50	190
51	200
52	200
53	230
54	240
55	275
56	250
57	300
58	250
59	250
60	250
61	275
62	300
63	250
64	350
65	400
66	250
67	250
68	200
69	250
70	250
71	250
72	250
73	250
74	250
75	1,000

*Those who leave under this decrement are assumed to DROP in accordance with the percentages below. Those who do not take DROP are assumed to take immediate retirement. DROP participants are assumed to remain in DROP for three years and receive interest at 5% per annum on their DROP deferrals.

Percentage of Retirements/DROP who are assumed to be DROP

Age	DROP
50	70%
55	68%
60	63%
65	30%
70	30%
75	30%

Merit/Seniority Salary Increase
(in addition to across-the-board increase)

County	
Service	Merit/Seniority Increase
0	4.00%
5	1.55%
10	1.30%
15	1.05%
20	0.80%
25	0.55%
30	0.50%

Schools	
Service	Merit/Seniority Increase
0	5.20%
5	2.10%
10	1.50%
15	1.10%
20	0.80%
25	0.60%
30	0.60%

Family Composition

For purposes of valuing the pre-retirement death benefit, an assumption is made that 80% of employees are married at death while active and that the female spouse is three years younger than the male spouse.

Sick Leave Credit

Unused sick leave balances as reported for each active member are used as of the valuation date. Future sick leave accruals for members hired prior to 2013 are assumed to accrue at 100% of each participant's annual average but are capped at 124 hours per year.

Economic Assumptions

Investment Return:	7.25% compounded per annum.
Rate of General Wage Increase:	2.75% compounded per annum.*
Rate of Increase in Cost-of-Living:	2.50% compounded per annum.**
Total Payroll Increase (For amortization):	2.75% compounded per annum.
Administrative Expenses:	0.25% of payroll.

*General Wage Increase assumption applies for projecting contributions and developing Social Security benefits.

**Benefit increases are limited to 4% per year.

Changes since Last Valuation

None

Analysis of Financial Experience
Gain and Loss in Accrued Liability during Years Ended June 30¹
Resulting from Differences between Assumed Experience and Actual Experience

Type of Activity	Investment Income	Combined Liability Experience	Gain (or Loss) During Year from Financial Experience	Non-Recurring Items	Composite Gain (or Loss) During Year
2012	\$59,620,255	(\$74,547,089)	(\$14,926,834)	\$ -	(\$14,926,834)
2013	46,004,262	(39,401,877)	6,602,385	(727,193)	5,875,192
2014	113,443,149	3,445,687	116,888,836	(1,462,698)	115,426,138
2015	(33,127,096)	73,129,057	40,001,961	-	40,001,961
2016	(120,548,533)	34,314,735	(86,233,798)	(69,346,439)	(155,580,237)
2017	(90,769,788)	(74,947,986)	(165,717,774)	(582,418)	(166,300,192)
2018	(64,779,936)	(41,362,698)	(106,142,634)	(603,265)	(106,745,899)

¹ Schedule comes from the Actuarial Valuation as of June 30, 2018.

Schedule of Retirees and Beneficiaries
Added To and Removed From Rolls²

Year Ended June 30,	Added to Rolls		Removed From Rolls		On Rolls @ Yr. End		% Increase Allowance	Average Allowance
	No.	Annual Allowance	No.	Annual Allowance	No.	Annual Allowance		
2009	533	\$14,697,864	187	\$3,032,662	5,931	\$145,132,570	8.74%	\$24,470
2010	450	14,483,584	163	2,748,741	6,218	156,867,413	8.09%	25,228
2011	518	18,345,093	168	2,885,600	6,568	172,326,906	9.86%	26,237
2012	472	17,441,822	152	2,971,259	6,888	186,797,469	8.40%	27,119
2013	559	17,469,060	184	3,336,404	7,263	200,930,125	7.57%	27,665
2014	547	17,306,458	184	3,482,147	7,626	214,754,436	6.88%	28,161
2015	625	18,026,882	230	4,321,038	8,021	228,460,280	6.38%	28,483
2016	307	9,011,712	139	3,011,824	8,189	234,460,168	2.63%	28,631
2017	639	21,100,152	225	3,847,450	8,603	251,712,870	7.36%	29,259
2018	628	18,659,672	242	5,140,831	8,989	265,231,711	5.37%	29,506

² Prior to 2016, amounts are based on June 30 benefits adjusted for known COLA effective July 1. Post-2015, amounts reported are based on benefits on December 31 prior to the valuation date.

Solvency Test¹

Aggregate Accrued Liabilities For							
Valuation Date June 30,	(1) Active Member Contributions	(2) Retirees, Vested Terms, Beneficiaries & DROP	(3) Active Members (County Financed Portion)	Reported Assets	(1)	(2)	(3)
					Portion of Accrued Liabilities by Reported Assets		
2009	\$312,357,412	\$1,813,482,907	\$1,410,033,226	\$2,603,283,631	100%	100%	34%
2010	329,166,585	1,985,373,546	1,456,519,392	2,636,051,959	100%	100%	22%
2011	339,170,151	2,177,027,867	1,502,726,115	2,841,466,151	100%	100%	22%
2012	332,723,684	2,411,862,623	1,519,589,131	3,053,412,085	100%	100%	20%
2013	355,254,873	2,587,007,980	1,531,567,801	3,261,923,577	100%	100%	21%
2014	363,335,228	2,769,188,984	1,668,195,558	3,614,067,515	100%	100%	29%
2015	372,037,954	2,884,906,681	1,649,587,057	3,759,611,811	100%	100%	30%
2016	396,434,811	2,987,100,852	1,732,881,508	3,831,179,295	100%	100%	26%
2017	380,179,076	3,216,480,052	1,771,072,393	3,930,924,191	100%	100%	26%
2018	397,692,499	3,444,004,357	1,749,526,935	4,070,486,587	100%	100%	13%

¹Schedule uses actuarial value of assets. Results would be different if market value of assets were used. Despite the name of this exhibit, the liabilities presented in this schedule are not an appropriate measurement of the settlement value of the System.

Schedule of Funding Progress

Valuation Date June 30,	Actuarial Value of Assets (a)	Actuarial Accrued Liabilities (b)	Unfunded Actuarial Accrued Liabilities (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
2009	\$2,603,283,631	\$3,535,873,545	\$932,589,914	74%	\$628,481,359	148%
2010	2,636,051,959	3,771,059,523	1,135,007,564	70%	629,248,592	180%
2011	2,841,466,151	4,018,924,133	1,177,457,982	71%	642,073,198	183%
2012	3,053,412,085	4,264,175,438	1,210,763,353	72%	642,638,926	188%
2013	3,261,923,577	4,473,830,654	1,211,907,077	73%	655,612,800	185%
2014	3,614,067,515	4,800,719,770	1,186,652,255	75%	659,360,128	180%
2015	3,759,611,811	4,906,531,692	1,146,919,881	77%	663,896,916	173%
2016	3,831,179,295	5,116,417,171	1,285,237,876	75%	702,787,358	183%
2017	3,930,924,191	5,367,731,521	1,436,807,330	73%	728,022,176	197%
2018	4,070,486,587	5,591,223,791	1,520,737,204	73%	754,080,802	202%

Schedule of Active Member Valuation Data

	Valuation Date June 30,	Number of Active Members ¹	Covered Payroll	Average Annual Salary	Percentage Increase in Average Pay
School	2008	6,250	175,830,069	28,133	
	2009	6,217	177,828,225	28,604	1.67%
	2010	6,024	177,595,319	29,481	3.07%
	2011	5,868	176,955,893	30,156	2.29%
	2012	5,855	169,890,909	29,016	-3.78%
	2013	5,901	181,728,377	30,796	6.13%
	2014	5,869	181,560,970	30,936	0.45%
	2015	5,692	179,763,202	31,582	2.09%
	2016	5,927	189,237,256	31,928	1.10%
	2017	5,836	194,881,548	33,393	4.59%
	2018	5,665	\$196,161,116	\$34,627	3.70%
County	2008	8,455	440,067,203	52,048	
	2009	8,399	456,378,666	54,337	4.40%
	2010	8,145	457,813,306	56,208	3.44%
	2011 ²	8,388	465,117,303	55,450	-1.35%
	2012	8,252	472,748,020	57,289	3.32%
	2013	8,110	473,884,424	58,432	2.00%
	2014	7,993	477,799,159	59,777	2.30%
	2015	7,977	484,133,722	60,691	1.53%
	2016	8,244	513,551,736	62,294	2.64%
	2017	8,150	533,140,400	65,416	5.01%
	2018	8,239	\$557,919,686	\$67,717	3.52%

¹ Excludes DROP participants.

² Includes 410 New Entrants not classified as County or Schools at time of valuation.

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The Statistical Section presents historical information regarding the retirement plan. This information includes a ten-year analysis of the sources of change in plan net assets, benefit payments, the number of retired members and average monthly benefits. Sources of additions include employer and plan member contributions and net investment income; deductions include benefit payments to retirees and beneficiaries, refunds of employee contributions and administrative expenses. The amounts of benefits paid, the count of benefit recipients and the average benefit payments are provided by type of benefit, including service retirement annuities, service-connected and ordinary disability benefits and survivor benefits.

Schedule of Additions by Source

Fiscal Year	Plan Member Contributions	Employer Contributions	Employer Contributions % of Covered Payroll	Net Investment Income (loss)	Total Additions
2009	\$33,927,190	\$65,110,832	9.62%	(\$653,558,145)	(\$554,520,123)
2010	31,733,516	64,069,102	9.71%	506,165,571	601,968,189
2011	31,041,076	96,607,535	14.70%	577,459,169	705,107,780
2012	31,702,075	114,682,538	17.20%	246,376,212	392,760,825
2013	32,551,927	127,448,018	19.05%	245,374,617	405,374,562
2014	32,758,587	129,618,309	19.30%	490,196,386	652,573,282
2015	33,193,593	138,493,099	20.18%	16,342,457	188,029,149
2016	34,627,061	155,780,373	21.99%	(16,668,287)	173,739,147
2017	35,476,023	167,311,608	22.90%	243,496,177	446,283,808
2018	36,357,591	188,578,414	25.29%	269,418,157	494,354,162

Schedule of Deductions by Type

Fiscal Year	Benefit Payments	Refunds of Contributions	Administrative Expenses	Total Deductions
2009	\$165,529,137	\$3,256,153	\$1,519,846	\$170,305,136
2010	166,271,110	4,075,162	1,593,223	171,939,495
2011	183,800,128	3,884,082	1,640,016	189,324,226
2012	199,503,336	3,781,497	1,687,040	204,971,873
2013	219,229,038	2,988,397	1,877,620	224,095,055
2014	235,204,611	3,356,282	1,884,827	240,445,720
2015	254,875,795	3,958,786	1,896,614	260,731,195
2016	270,800,631	4,101,311	2,112,595	277,014,537
2017	281,258,687	3,671,886	2,050,848	286,981,421
2018	296,255,029	4,386,395	2,170,638	302,812,062

Schedule of Benefit Payments by Type

Fiscal Year	Service Annuity	Service-Connected Disability	Ordinary Disability	Survivor Benefit	Total
2009	\$155,179,988	\$3,200,844	\$3,845,105	\$3,303,200	\$165,529,137
2010	155,512,982	3,232,803	3,939,896	3,585,429	166,271,110
2011	172,362,105	3,176,876	4,232,345	4,028,802	183,800,128
2012	187,702,064	3,187,892	4,353,983	4,259,397	199,503,336
2013	206,701,293	3,436,007	4,490,924	4,600,814	219,229,038
2014	222,547,552	3,416,714	4,412,110	4,828,235	235,204,611
2015	241,694,202	3,498,363	4,444,633	5,238,597	254,875,795
2016	257,182,159	3,482,679	4,371,713	5,764,080	270,800,631
2017	267,245,571	3,501,643	4,323,112	6,188,361	281,258,687
2018	281,675,071	3,467,455	4,413,607	6,698,896	296,255,029

Schedule of Retired Members by Benefit Type

Fiscal Year	Service Annuity	Service-Connected Disability	Ordinary Disability	Survivor Benefit	Total
2009	5,133	153	383	262	5,931
2010	5,392	157	389	280	6,218
2011	5,712	153	400	303	6,568
2012	6,030	152	396	310	6,888
2013	6,392	153	390	328	7,263
2014	6,757	149	374	346	7,626
2015	7,139	149	368	365	8,021
2016	7,300	149	359	381	8,189
2017	7,691	146	358	408	8,603
2018	8,058	139	354	438	8,989

Schedule of Average Monthly Benefit Amounts

Fiscal Year	Service Annuity	Service-Connected Disability	Ordinary Disability	Survivor Benefit	Average
2009	\$2,187	\$1,710	\$841	\$1,092	\$2,039
2010	2,250	1,708	872	1,193	2,102
2011	2,339	1,761	896	1,225	2,186
2012	2,409	1,857	935	1,247	2,260
2013	2,450	1,913	941	1,274	2,305
2014	2,503	2,105	968	1,284	2,364
2015	2,506	2,148	988	1,323	2,376
2016	2,521	2,272	1,005	1,360	2,396
2017	2,568	2,103	995	1,344	2,436
2018	2,586	2,172	1,010	1,348	2,457

	Schedule of Average Benefit Payments						
	Years of Credited Service *						
	2-4	5-9	10-14	15-19	20-24	25-29	30+
Period 7/1/2007 to 6/30/2008							
Average Monthly Benefit **	\$190	\$530	\$1,026	\$1,712	\$2,255	\$2,819	\$3,229
Average of Final Monthly Salaries	\$2,997	\$3,539	\$4,093	\$5,045	\$5,276	\$5,652	\$5,317
Number of Retirees	26	60	43	70	69	58	31
Period 7/1/2008 to 6/30/2009							
Average Monthly Benefit **	199	541	911	1,732	2,298	3,150	3,603
Average of Final Monthly Salaries	3,118	4,098	3,923	5,046	5,539	6,082	6,064
Number of Retirees	32	72	46	81	101	92	48
Period 7/1/2009 to 6/30/2010							
Average Monthly Benefit **	196	496	928	1,553	2,205	2,945	3,880
Average of Final Monthly Salaries	3,088	3,451	4,034	4,678	5,409	5,646	6,346
Number of Retirees	24	60	47	66	87	43	34
Period 7/1/2010 to 6/30/2011							
Average Monthly Benefit **	243	564	972	1,823	2,504	2,940	3,633
Average of Final Monthly Salaries	3,317	3,772	4,278	5,416	5,796	5,855	6,164
Number of Retirees	29	57	59	75	112	67	46
Period 7/1/2011 to 6/30/2012							
Average Monthly Benefit **	259	525	970	1,690	2,565	3,042	3,699
Average of Final Monthly Salaries	3,712	3,764	4,147	5,145	6,145	6,060	6,252
Number of Retirees	25	52	54	65	89	80	30
Period 7/1/2012 to 6/30/2013							
Average Monthly Benefit **	207	581	990	1,832	2,514	3,123	4,569
Average of Final Monthly Salaries	2,847	4,114	4,278	5,430	5,860	6,300	7,428
Number of Retirees	34	66	54	69	113	77	37
Period 7/1/2013 to 6/30/2014							
Average Monthly Benefit **	243	538	1,012	1,746	2,512	3,173	3,918
Average of Final Monthly Salaries	3,693	3,835	4,501	5,445	5,964	6,214	6,543
Number of Retirees	30	68	69	57	88	88	39
Period 7/1/2014 to 6/30/2015							
Average Monthly Benefit **	243	598	1,035	1,784	2,596	3,061	4,010
Average of Final Monthly Salaries	3,146	4,053	4,450	5,328	6,108	6,071	6,532
Number of Retirees	20	79	70	68	108	110	42
Period 7/1/2015 to 12/31/2015							
Average Monthly Benefit **	171	532	1,132	1,708	2,423	3,316	3,540
Average of Final Monthly Salaries	2,784	3,682	4,751	5,117	5,640	6,581	5,826
Number of Retirees	7	37	42	34	55	51	19
Period 1/1/2016 to 12/31/2016							
Average Monthly Benefit **	285	645	1,001	1,777	2,753	3,458	4,504
Average of Final Monthly Salaries	4,220	4,481	4,332	5,276	6,520	6,773	7,267
Number of Retirees	24	89	90	85	89	128	65
Period 1/1/2017 to 12/31/2017							
Average Monthly Benefit **	261	549	1,055	1,670	2,662	3,443	4,544
Average of Final Monthly Salaries	3,541	3,718	4,570	5,005	6,278	6,773	7,375
Number of Retirees	33	102	99	86	81	94	52

*The Years of Credited Service is the service used in the determination of benefits, which may be different than service for eligibility.

**Does not include supplements.

Active Participants Count by Age/Service

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	124	61	1	-	-	-	-	-	186
25 to 29	276	453	76	5	-	-	-	-	810
30 to 34	252	514	317	125	1	-	-	-	1209
35 to 39	244	496	304	322	94	2	-	-	1462
40 to 44	231	441	310	345	190	50	3	-	1570
45 to 49	242	548	388	397	280	157	81	22	2115
50 to 54	204	525	432	379	308	210	162	45	2265
55 to 59	159	474	453	448	344	163	56	56	2153
60 to 64	102	300	367	368	198	59	38	30	1462
65 & up	42	148	182	141	93	26	18	22	672
Total	1876	3960	2830	2530	1508	667	358	175	13,904

Active Participants Total Salary by Age/ Service

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$4,114,668	\$2,292,463	\$38,733	\$-	\$-	\$-	\$-	\$-	\$6,445,864
25 to 29	11,052,175	21,426,892	3,928,145	264,828	-	-	-	-	36,672,040
30 to 34	10,702,358	26,724,752	17,168,043	6,572,509	46,627	-	-	-	61,214,289
35 to 39	9,149,347	25,178,944	17,688,707	19,409,287	5,620,628	110,471	-	-	77,157,384
40 to 44	7,903,446	20,799,353	16,900,587	20,676,604	12,878,615	3,484,598	215,415	-	82,858,618
45 to 49	7,570,469	23,249,037	19,352,365	24,235,361	19,194,401	12,676,817	6,687,217	1,735,869	114,701,536
50 to 54	6,010,536	20,246,197	19,141,836	21,823,677	21,214,598	16,172,401	13,857,395	3,715,031	122,181,671
55 to 59	4,378,135	19,388,191	20,467,326	24,514,807	22,666,761	12,251,553	4,775,236	4,975,736	113,417,745
60 to 64	2,651,438	11,072,877	16,453,386	20,313,696	12,794,249	3,985,853	3,105,357	2,891,505	73,268,361
65 & up	973,385	4,750,605	6,740,114	6,704,693	5,322,825	1,723,559	1,147,462	2,210,705	29,573,348
Total	\$64,505,957	\$175,129,311	\$137,879,242	\$144,515,462	\$99,738,704	\$50,405,252	\$29,788,082	\$15,528,846	\$717,490,856

Retirees by Location

Retirees By State	
State	% of Total
VA	83.36%
FL	4.33%
MD	3.46%
NC	2.96%
SC	1.76%
WV	1.60%
PA	0.84%
TX	0.58%
CA	0.57%
GA	0.53%

Retirees Living in Fairfax County	
County	% of Total
Fairfax County	37.36%

Retirees by Fairfax County City	
Fairfax	4.56%
Springfield	4.42%
Alexandria	4.30%
Centreville	3.20%
Falls Church	2.67%
Herndon	2.58%
Annandale	2.39%
Burke	2.17%
Reston	2.04%
Vienna	2.04%
Lorton	1.20%
Chantilly	1.15%
Clifton	0.99%
Franconia	0.99%
McLean	0.89%
Fairfax Station	0.75%
Oakton	0.53%
Great Falls	0.30%
Fort Belvoir	0.06%
Dunn Loring	0.05%
Merrifield	0.04%

EMPLOYEES' RETIREMENT SYSTEM

Fairfax County Retirement Systems
12015 Lee Jackson Memorial Highway, Suite 350
Fairfax, VA 22033
703.279.8200
www.fairfaxcounty.gov/retirement

