

# Comprehensive Annual Financial Report

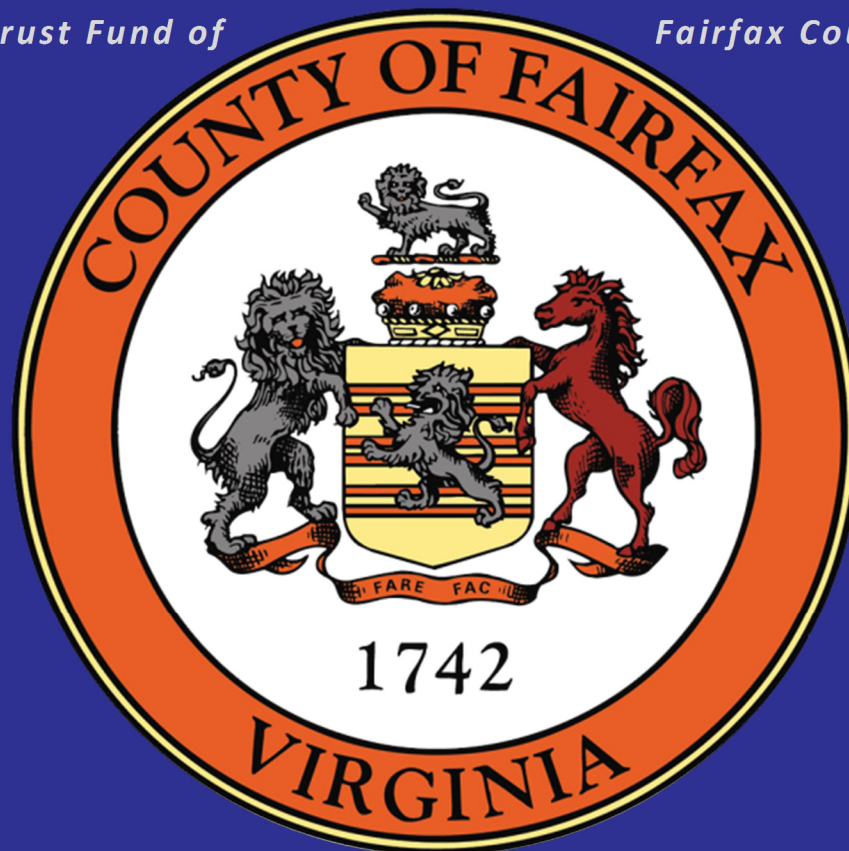
For the Fiscal Year Ended June 30, 2016

## FAIRFAX COUNTY

# POLICE officers RETIREMENT SYSTEM

*A Pension Trust Fund of*

*Fairfax County, Virginia*



# 2016

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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 22, 2016

Dear Members of the Board of Trustees:

I am pleased to submit to you the annual report of the Fairfax County Police Officers Retirement System (System) for the fiscal year ended June 30, 2016. 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 Police Officers Retirement System was created under authority granted by Chapter 303 of the Acts of Assembly (law of the Commonwealth of Virginia) on March 29, 1944, to provide defined benefit pension plan coverage for sworn full-time law enforcement officers of the Fairfax County Police Department. In 1981 Fairfax County enacted Article 7 of the Fairfax County Code, which adopted and continued Chapter 303 as amended. There were 1,319 active members, 75 in the Deferred Retirement Option Program (DROP), 47 vested members and 1,039 retirees participating in the System as of June 30, 2016. For calculations surrounding the Total Pension Liability and its components, Cheiron, the System's actuary, used June 30, 2016, 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

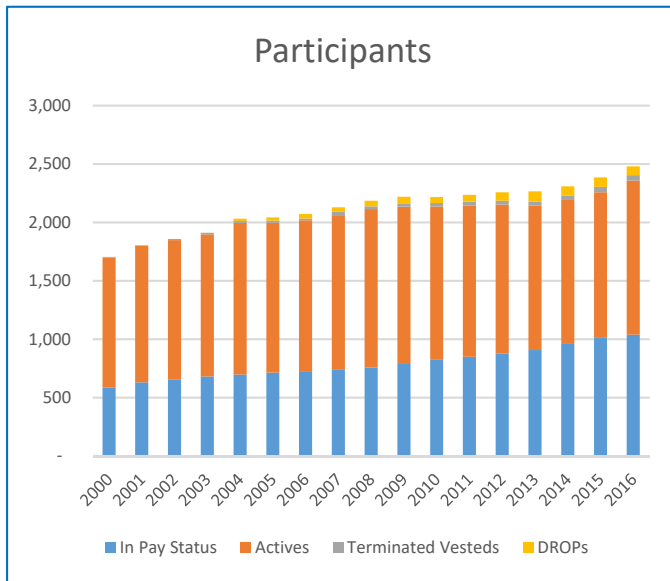
In fiscal year 2016, the System's investment returns were challenged by market downturns in a number of asset classes. The System's portfolio return for the year was 1.1% (0.9 %, net of fees), lagging the long term return target of 7.25%. This return placed in the 44<sup>th</sup> percentile of the BNY Mellon universe of public funds. However, over the long term, returns compared even more favorably, with investment returns for the ten-year period were 6.1% per year, ranking the fund in the top 11<sup>th</sup> 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

10680 Main Street \* Suite 280 \* Fairfax, VA 22030  
 Phone: 703-279-8200 \* 1-800-333-1633 \* Fax: 703-273-3185  
[www.fairfaxcounty.gov/retirement](http://www.fairfaxcounty.gov/retirement)

Additional details on the markets and the System’s investments are provided in the Investment Section.



### 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 adopted a 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 Footnote 3 to 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 current payroll, and are adjusted as necessary to accumulate sufficient assets to meet the costs of benefit payments when due. The valuation of the System performed as of June 30, 2016, indicated that the ratio of assets accumulated by the System to total actuarial accrued liabilities for benefits showed a decrease from 86.5% to 85.4%. The actuarial section contains further information on the results of the June 30, 2016, valuation. For purposes of calculating the net pension liability as of June, 30, 2016, in accordance with Governmental Accounting Standards Board’s (GASB) Statement Number 67, the System’s funded status was 81.4%.

Based on the June 30, 2015, actuarial valuation, the employer contribution rate for 2016 following the adopted corridor-based funding policy was 37.98%, an increase of 1.16% from the 2015 rate of 36.82%. This was done to improve the funded level of the plan, accomplished by raising the target unfunded liability amortization level from 93% to 95%, and to offset a decrease in the employee contribution rate (discussed further below).

### **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. This was accomplished by increasing the target amortization level for the unfunded liability from 90% in prior years to 91% in 2014 and 95% in 2016. This target was further increased to 97% for the County's 2017 adopted budget.

A five year actuarial experience study was completed by the System's actuary in early 2016, which entailed a detailed review of trends in salaries, decrement rates, inflation, mortality, investment returns, and other economic and demographic assumptions. The valuation date and data methodology were also reviewed.

Several major customer service-related initiatives were completed. The system's website received a major overhaul, in an effort to make it more user-friendly and to ensure that employees and retirees have access to relevant and understandable information. In addition, retirement training and outreach for our active police officers was expanded, again in an effort to ensure that they have all the information they need to plan for their retirement.

### **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 Police Officers Retirement System for its comprehensive annual financial report for the fiscal year ended June 30, 2015. This was the sixth 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, 2016, 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 independent auditors' report and certification from the actuary are included in this report.

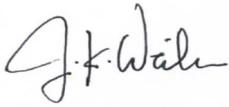
#### *Acknowledgements*

The annual report of the Police Officers Retirement System was prepared by the System's staff under the leadership of the Board of Trustees, whom I have the privilege to serve. I must also acknowledge the entire Retirement

Systems' team for their tireless work throughout the year to ensure that we continue to provide the best-possible service to and stewardship for the employees, retirees, and citizens of Fairfax County.

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/](http://www.fairfaxcounty.gov/retirement/).

Respectfully submitted,

A handwritten signature in black ink that reads "J. K. Weiler". The signature is written in a cursive, flowing style.

Jeffrey K. Weiler  
Executive Director



Government Finance Officers Association

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

Presented to

**Fairfax County  
Police Officers Retirement System  
Virginia**

For its Comprehensive Annual  
Financial Report  
for the Fiscal Year Ended

**June 30, 2015**

A handwritten signature in black ink, appearing to read "Jeffrey R. Emswiler".

Executive Director/CEO



Public Pension Coordinating Council

***Recognition Award for Funding  
2016***

Presented to

***Fairfax County Police Officers  
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)

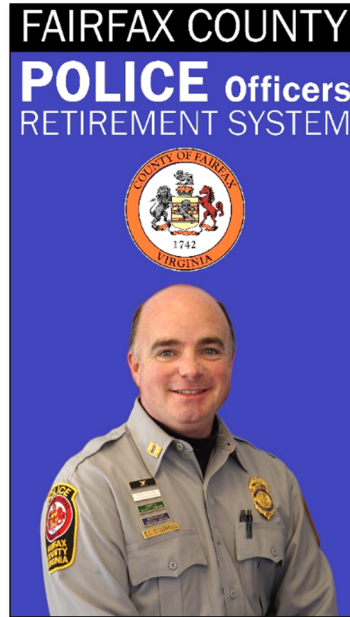
A handwritten signature in black ink that reads "Alan H. Winkle". The signature is fluid and cursive, with the first name "Alan" and last name "Winkle" clearly legible.

Alan H. Winkle  
Program Administrator



Seven members serve on the Fairfax County Police Officers Retirement System Board of Trustees. Three of the members are citizens appointed by the Fairfax County Board of Supervisors. Two of the members are elected by Fairfax County Government Employees, and one member is elected by retirees. The Director of Finance serves as an Ex Officio member.

**Board of Trustees**



**Edward C. O'Carroll**  
*President*  
 Elected Member Trustee  
*Term Expires: December 31, 2020*



**Richard Barron**  
*Vice President and Secretary*  
 Elected Member Trustee  
*Term Expires: December 31, 2018*



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



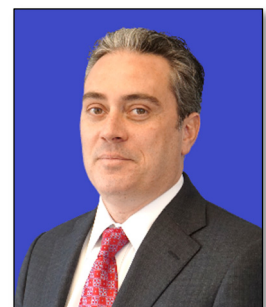
**James R. Dooley, Jr.**  
 Elected Retired Member Trustee  
*Term Expires: June 30, 2018*



**Vacant**  
 Board of Supervisors Appointee



**Stephen K. Gallagher**  
 Board of Supervisors Appointee  
*Term Expires: June 30, 2018*



**Brendan D. Harold**  
 Board of Supervisors Appointee  
*Term Expires: December 31, 2018*

**Administrative Organization**

**Administrative Staff**

Jeffrey K. Weiler  
*Executive Director*

Katherine Molnar, CFA  
*Senior Investment Officer*

**Professional Services**

**Actuary**

Cheiron  
Actuaries

**Auditor**

Cherry Bekaert, LLP  
Certified Public Accountants

**Investment Managers**

Acadian Asset Management, LLC  
Boston, MA

AQR Capital Management, LLC  
Greenwich, CT

BlackRock, Inc.  
San Francisco, CA

BlueCrest Capital Management, LLP  
New York, NY

Bridgewater Associates, L.P.  
Westport, CT

The Clifton Group  
Edina, MN

Cohen & Steers Capital Management, Inc.  
New York, NY

Czech Asset Management  
Old Greenwich, CT

DoubleLine Capital, L.P.  
Los Angeles, CA

Emerging Sovereign Group  
New York, NY

First Eagle Investment Management  
New York, NY

King Street Capital Management, L.P.  
New York, NY

**Investment Managers**  
**(continued)**

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

Neuberger Berman Group, LLC  
New York, NY

Oaktree Capital Management, L.P.  
Los Angeles, CA

PIMCO  
Newport Beach, CA

Sands Capital Management, Inc.  
Arlington, VA

Standish Mellon Asset Management Co.  
Pittsburgh, PA

Starboard Value, L.P.  
New York, NY

Systematica Investments Limited  
New York, NY

The Vanguard Group  
Malvern, PA

WCM Investment Management  
Laguna Beach, CA

**Custodian Bank**

BNY Mellon Asset Servicing  
Pittsburgh, PA

**Organization Chart**



**Board of Supervisors**  
*Left to right: Daniel G. Storck, John C. Cook, Catherine M. Hudgins, Jeffrey C. McKay, Sharon Bulova (Chairman At-Large), Penelope A. Gross (Vice Chairman), John W. Foust, Kathy L. Smith, Linda Q. Smyth, Pat Herrity*

**Board of Trustees**  
(Seven Members – see page 7)  
*Edward C. O’Carroll, Richard Barron, Christopher J. Pietsch, James R. Dooley, Jr., Stephen K. Gallagher, Brendan D. Harold, One vacant position*



**Executive Director**  
*Jeffrey K. Weiler*



**Senior Investment Officer**  
*Katherine Molnar, 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*



**Investment Analyst**  
*Damien Lee, CFA*



## Report of Independent Auditor

To Board of Supervisors  
County of Fairfax, Virginia

To the Board of Trustees  
Fairfax County Police Officers Retirement System

### **Report on the Financial Statements**

We have audited the accompanying financial statements of the Fairfax County Police Officers Retirement System (the "System"), a pension trust fund of the County of Fairfax, Virginia, as of and for the year ended June 30, 2016 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.

### ***Auditors' 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, 2016, 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 on pages 14-18 and required supplementary information on pages 35-37 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

*Supplementary and 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 introductory section on pages 1-10, the other supplementary information on page 38, the investment section on pages 39-51, the actuarial section on pages 53-58, and the statistical section on pages 59-62 are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The introductory section, schedule of investment and consultant expenses, schedule of administrative expenses, 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 18, 2016, 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.

Cherry Bekaert LLP

Tysons Corner, Virginia  
November 18, 2016

## Management's Discussion and Analysis (Unaudited)

This section presents management's discussion and analysis of the Fairfax County Police Officers Retirement System's ("System" or "Plan") financial performance and provides an overview of the financial activities for the fiscal year ended June 30, 2016. 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 statement; (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, 2016 and Statement of Changes in Fiduciary Net Position for the year ended June 30, 2016. 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, refunds of contributions and fees paid for professional services and administrative expenses.

**Notes to Financial Statements.** The Notes to Financial Statements are an integral part of the financial statements and include additional information and schedules to provide a better understanding of the financial statements. The Notes to Financial Statements include detailed information that are 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.** The Required Supplementary Information includes the Schedule of Changes in Net Pension Liability and Related Ratios, Schedule of Net Pension Liability, 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 Additional Supplementary notes are immediately following the Notes to the Financial Statements.

### Financial Highlights

The net position restricted for pension benefits as of June 30, 2016, and June 30, 2015, were \$1,270.4 million and \$1,280.9 million, respectively. The net position representing assets available to pay for current and future member pension benefits, decreased by \$10.5 million or 0.8 percent.

Total additions to net position decreased by 31.3 percent from \$88.4 million in 2015 to \$60.7 million in 2016 primarily due to lower, albeit positive, investment performance this year versus 2015.

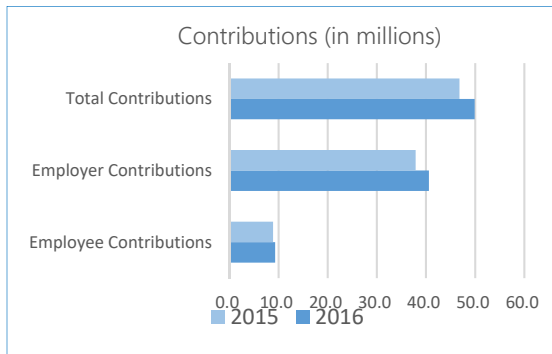
Net investment income decreased 74.2 percent from \$41.5 million in 2015 to \$10.7 million in 2016. The net money-weighted rate of return on investments on a fair value basis was approximately 0.9 percent in fiscal year 2016, and has decreased from 3.4 percent in fiscal year 2015.



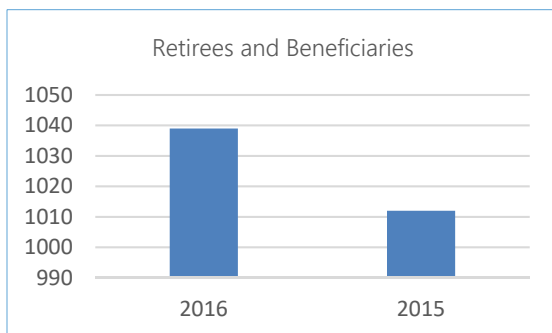
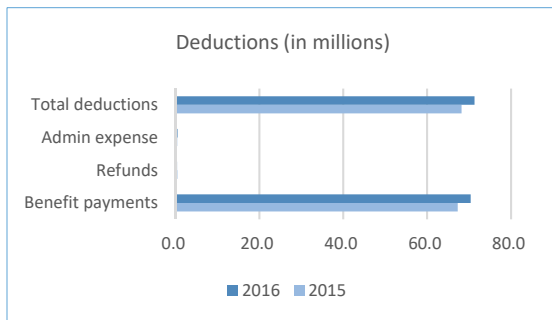
Management’s Discussion and Analysis

(continued)

Employer and employee contributions received totaled \$49.9 million, an increase of 6.6 percent or \$3.1 million compared to 2015 received contributions of \$46.8 million. The total employer contributions increased from \$37.9 million in fiscal year 2015 to \$40.6 million in fiscal year 2016.



Total deductions from fiduciary net position increased by \$3.1 million from \$68.2 million in 2015 to \$71.3 million in 2016. Member retirement benefit payments of \$70.4 million in 2016 make up the majority of total deduction and increased by \$3.1 million or 4.6 percent from \$67.3 million in 2015. The number of retired members and beneficiaries receiving a benefit payment increased 2.7 percent from 1,012 to 1,039 payees as of June 30, 2016.



The net pension liability as calculated per GASB 67 as of June 30, 2016, and June 30, 2015, were \$290.1 million and \$230.0 million, respectively. The net position as a percentage of total pension liability as of June 30, 2016, and June 30, 2015, were 81.4 percent and 84.8 percent, respectively. The net pension liability as a percentage of covered payroll has increased from 223.6 percent in 2015 to 271.1 percent in fiscal year 2016. The covered employee payroll increased from \$102.8 million in 2015 to \$107.0 million in 2016.

Administrative expenses have remained stable at 0.04 percent of the value of net position for fiscal year 2016.

	2016	2015
Net Pension Liability (in million)	\$290.1	\$230.0
Net Position as Percentage of TPL	81.4%	84.8%
Covered Employee Payroll (in million)	\$107.0	\$102.8
New Pension Liability as Percentage	271.1%	223.6%

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. As of June 30, 2016, The Police Officers Retirement System held a net position of \$1,270.4 million restricted for pension benefits. Total assets as of June 30, 2016, were \$1,288.7 million, representing a decrease of \$12.6 million, or 1.0 percent over the previous fiscal year. The main component of the decrease was due to deductions exceeding contributions that led to a decline in total cash and investment of \$1,279.5 million in fiscal year 2015 as compared to \$1,268.1 million in fiscal year 2016.

For fiscal year 2016, the net position of the Police Officers Retirement System decreased 0.8 percent resulting in a total net position value of \$1,270.4 million, reflecting a decrease of \$10.5 million over fiscal year 2015. The falling-off in net position was primarily due to deductions exceeding contributions, the decrease of securities lending activity by nearly 22.0 percent and a decrease in investment gains from \$41.5 million in 2015 to \$10.7 million in 2016.

The table in the following page details the Police Retirement System’s net position for the current and prior year.

## Management's Discussion and Analysis

(continued)

## Summary Statement of Fiduciary Net Position

Assets	2016	2015	Difference	Percentage of Change
Total cash and investments	\$1,268,051,495	\$1,279,501,163	(\$11,449,668)	-0.9%
Cash collateral, securities lending	12,294,528	15,634,903	(3,340,375)	-21.4%
Capital assets, net	272	544	(272)	-50.0%
Total receivables	<u>8,365,851</u>	<u>6,143,332</u>	<u>2,222,519</u>	36.2%
<b>Total assets</b>	<b>1,288,712,146</b>	<b>1,301,279,942</b>	<b>(12,567,796)</b>	<b>-1.0%</b>
<b>Liabilities</b>				
Purchase of investments	(3,857,400)	(2,789,710)	(1,067,690)	38.3%
Securities lending collateral	(12,294,528)	(15,634,903)	3,340,375	-21.4%
Accounts payables and others	<u>(2,170,505)</u>	<u>(1,940,239)</u>	<u>(230,266)</u>	11.9%
<b>Total liabilities</b>	<b><u>(18,322,433)</u></b>	<b><u>(20,364,852)</u></b>	<b><u>2,042,419</u></b>	<b>-10.0%</b>
<b>Net position restricted for pensions</b>	<b><u>\$1,270,389,713</u></b>	<b><u>\$1,280,915,090</u></b>	<b><u>(\$10,525,375)</u></b>	<b><u>-0.8%</u></b>

## Net Position for Current and Prior Fiscal Year

Fiscal Year	Ending Balances (millions)	Net change in dollars (millions)	Net Change in Percent
2016	\$1,270.4	(10.5)	(0.8)
2015	1,280.9	20.2	1.6

Total liabilities as of June 30, 2016, were \$18.3 million, representing a decrease of \$2.0 million, or 10.0 percent, over the previous year. The downturn in total liabilities is the result of a decreased level of securities lending activity resulting in a decrease in cash collateral received for securities on loan.

Securities lending cash collateral decreased by \$3.3 million or 21.4 percent due to a decrease in activities in the securities lending program. A separate account structure was implemented in fiscal year 2015 to replace a collective investment pool. The separate account now holds a large position in equity repurchase securities.

The actuarial value of the assets as of the last valuation on June 30, 2016, was \$1,333.2 million while actuarial liabilities as of the same period were \$1,560.5 million. For purposes of funding, this resulted in a funding ratio of 85.4 percent. However, for purposes of GASB 67, the Total Pension Liability as of June 30, 2016, was \$1,560.5 million compared to the Plan Fiduciary Net

Position of \$1,270.4 million, which results in a funding ratio of 81.4 percent.

(Dollars in millions)	2016	2015
Actuarial Accrued Liability	\$1,560.5	\$1,491.1
Actuarial Value of Assets	<u>1,333.2</u>	<u>1,290.0</u>
Unfunded Actuarial Liability	<u>\$227.3</u>	<u>\$201.1</u>
Funding Ratio	85.4%	86.5%
Total Pension Liability	\$1,560.5	\$1,510.9
Plan Fiduciary Net Position	<u>1,270.4</u>	<u>1,280.9</u>
Net Pension Liability	<u>\$290.1</u>	<u>\$230.0</u>
Funding Ratio	81.4%	84.8%

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

<u>Additions</u>	<u>2016</u>	<u>2015</u>	<u>Difference</u>	<u>Percentage of Change</u>
Employer Contributions	\$40,646,884	\$37,867,181	\$2,779,703	7.3%
Plan Member Contribution	9,324,066	8,889,931	434,135	4.9%
Net income from investments	10,718,655	41,545,283	(30,826,628)	-74.2%
Net income from securities lending	<u>45,373</u>	<u>55,870</u>	<u>(10,497)</u>	<u>-18.8%</u>
<b>Total Additions</b>	60,734,978	88,358,265	(27,623,287)	-31.3%
<b>Deductions</b>				
Benefit payments	70,352,623	67,276,713	3,075,910	4.6%
Refunds	397,188	480,447	(83,259)	-17.3%
Administrative expense	<u>510,544</u>	<u>443,230</u>	<u>67,314</u>	<u>15.2%</u>
<b>Total deductions</b>	<u>71,260,355</u>	<u>68,200,390</u>	<u>3,059,965</u>	<u>4.5%</u>
<b>Net increase/(decrease)</b>	<b><u>(\$10,525,377)</u></b>	<b><u>\$20,157,875</u></b>	<b><u>(\$30,683,252)</u></b>	<b><u>-152.2%</u></b>

**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 decreased by \$27.6 million or 31.3 percent in fiscal year 2016 attributed primarily to \$30.8 million, or 74.2 percent, less appreciation in the fair value of the investments. This is clearly a substantial decline compared to the previous year's investment performance due to the unfavorable market environment in fiscal year 2016.

Total contributions for the fiscal year ended June 30, 2016, amounted to \$49.9 million. This was an increase of \$3.1 million when compared with the activity of fiscal year 2015. The employer contributions for fiscal year 2016 increased by 7.1 percent due primarily to an increase in the employer contribution rate from 36.8 percent to 37.9 percent of salary. Employee contributions increased by 4.5 percent due to merit and COLA increase.

The system experienced a nearly 19.0 percent decrease in net income from securities lending as a result of a downturn in lending activities during the year. Albeit positive, investment returns were lower for fiscal year 2016 than 2015 reflecting moderate returns in the capital markets. Net investment income decreased from \$41.5 million in fiscal year 2015 to \$10.7 million in fiscal year 2016, which is consistent with

the decrease in the net money-weighted investment rate of return from 3.4 percent for fiscal year 2015 to 0.9 percent for fiscal year 2016.

Total deductions to the retirement system consist of the payments of benefits to retirees and beneficiaries, the refund of contributions to former members, and the cost of administering the retirement system. The total deductions for fiscal year 2016 were \$71.3 million, an increase of \$3.1 million, or 4.5 percent, over fiscal year 2015. Regular pension benefit payments increased as the number of retirees and beneficiaries receiving benefit payments climbed to 1,039 from 1,012 in fiscal year 2016. Benefit payments also increased due to a cost-of-living increase of 1.0 percent, and higher average benefits for new retirees. Refunds reflected a 17.3 percent decrease due to lower employee turnover or separation in the fiscal year.

<b>Participant Counts</b>	<b>2016</b>	<b>2015</b>
Actives	1,319	1,246
Drop	75	81
Terminated vested	47	47
Retiree in payment status	<u>1,039</u>	<u>1,012</u>
Total	2,480	2,386

## Management's Discussion and Analysis

(continued)

An actuarial valuation is performed annually by Cheiron. As of June 30, 2016, the date of the most recent actuarial valuation, the funded ratio of the system was 85.4 percent. This was a decrease of 1.1 percent from the July 1, 2015, valuation funded ratio of 86.5 percent. The combination of liabilities, investment results, and member and employer contributions over the last year led the funding ratio to decrease. Under GASB 67 calculation, using the December 31, 2015, data rolled forward to June 30, 2016, the plan fiduciary net position as a percentage of the total pension liability was 81.4 percent. It decreased from 84.8 percent in fiscal year 2015 primarily as a result of the slower growth in the plan fiduciary net position due to lower investment returns than forecasted.

**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 Administration Agency, 10680 Main Street, Suite 280, Fairfax, Virginia 22030. This report can also be found on the County's internet site at [www.fairfaxcounty.gov/retirement/](http://www.fairfaxcounty.gov/retirement/).

## Basic Financial Statements

## Statement of Fiduciary Net Position

as of June 30, 2016

**Assets**

Cash and short-term investments		
Equity in County's pooled cash and temporary investments	\$1,557,138	
Cash collateral received for securities on loan	12,294,528	
Short-term investments	<u>55,523,234</u>	
Total cash and short-term investments		\$69,374,900
Capital Assets		
Equipment, net	<u>272</u>	
Total capital assets		272
Receivables		
Accounts receivable	2,666,459	
Accrued interest and dividends	2,162,693	
Investment proceeds and other receivables	<u>3,536,699</u>	
Total receivables		8,365,851
Investments, at fair value		
Common and preferred stock	151,533,585	
Fixed income		
Asset-backed securities	75,710,401	
Corporate and other bonds	70,178,147	
U.S. Government obligations	53,072,184	
Pooled and mutual funds	<u>860,476,806</u>	
Total investments		<u>1,210,971,123</u>
Total assets		1,288,712,146
<b>Current Liabilities</b>		
Investment purchases and other liabilities	3,857,400	
Cash collateral received for securities on loan	12,294,528	
Accounts payable and accrued expenses	2,130,973	
Compensated absences, short-term	23,582	
<b>Noncurrent liabilities</b>		
Compensated absences, long-term	<u>15,950</u>	
Total liabilities		<u>(18,322,433)</u>
<b>Net position restricted for pensions</b>		<b><u>\$1,270,389,713</u></b>

See accompanying notes to financial statements.

## Basic Financial Statements

(continued)

## Statement of Changes in Fiduciary Net Position

For the Year Ended June 30, 2016

**Additions**

Contributions		
Employer	\$40,646,884	
Plan members	<u>9,324,066</u>	
Total contributions		\$49,970,950
Investment income from investment activities		
Net depreciation in fair value of investments	(2,135,185)	
Interest	11,420,882	
Dividends	<u>4,720,946</u>	
Total investment income	14,006,643	
Investment activity expense		
Management fees	(2,933,668)	
Custodial fees	(76,557)	
Consulting fees	(40,996)	
Allocated administration expense	<u>(236,767)</u>	
Total investment expense	<u>(3,287,988)</u>	
Net income/(loss) from investment activities		10,718,655
Securities lending activities		
Total Securities lending income	67,164	
Total securities lending expense	(21,791)	
Net income/(loss) from securities lending activities		<u>45,373</u>
Total net investment income/(loss)		<u>10,764,028</u>
Total additions		<b>60,734,978</b>

**Deductions**

Annuity benefits	65,061,094	
Disability benefits	1,397,337	
Survivor benefits	3,894,192	
Refunds of employee contributions	397,188	
Administrative expense	<u>510,544</u>	
Total deductions		71,260,355
Net decrease		(10,525,377)

**Net position restricted for pensions**

Beginning of fiscal year	<u>1,280,915,090</u>
End of fiscal year	<b><u>\$1,270,389,713</u></b>

See accompanying notes to financial statements.

## Notes to the Financial Statements

The Fairfax County Police Officers Retirement System is a legally separate single-employer defined benefit pension plan established under the Code of Virginia to provide defined pension benefits to certain Fairfax County, Virginia ("County") police. As such, the System is considered part of the 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 apply all applicable pronouncements of the Governmental Accounting Standards Board (GASB).

On February 2015, the Governmental Accounting Standards Board issued its standard on accounting and financial reporting issues related to fair value measurements. GASB no. 72, Fair Value Measurement and Application is applicable primarily to investments made by state and local governments, defines fair valuation and describes how fair value should be measured. This statement requires disclosures to be made about fair value measurements, the level of fair value hierarchy, and valuation techniques. In fiscal year 2016, the System implemented GASB Statement no. 72. Comprehensive footnote disclosures regarding this Statement is found on Note 3.

### 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 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 direct real estate are lagged by 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, 2016, 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 risk, 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 changes could materially affect the amounts reported in the financial statements.

Notes to the Financial Statements  
(continued)

*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 2016 Beginning Balance	\$40,439
Leave Earned	25,448
Leave Used	26,354
FY 2016 Ending Balance	39,533
Current	23,582

**Note 2. Summary of Plan Provisions**

**A. Plan Description.**

The System is a single-employer defined benefit pension plan. Benefit provisions are established and may be amended by County ordinance. All benefits vest at five years of service. The general provisions of the Police Officers Retirement System are as follows:

*Membership:*

The plan covers County police officers who are not covered by other plans of the County or the Virginia Retirement System. Members sworn before January 1, 2013, are members of Plan A. Members sworn on or after January 1, 2013, are members of Plan B.

*Contribution Rate:*

The member contribution rate is set by the County Ordinance and is currently 8.65 percent of base salary. The County contribution rate is set by the actuarial process and was 37.98 percent for fiscal year 2016. Police Officers do not participate in Social Security.

*Benefit:*

The benefit is 2.8 percent of average final compensation (highest consecutive three years) multiplied by creditable service including sick leave; and it is then increased by 3.0 percent. Plan B

members have a cap of 2,080 hours of sick leave that will count towards retirement service credit.

*Benefit Limit:*

The benefit is 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 amount in excess of the Section 415 limit.

*Normal Retirement:*

To be eligible for normal retirement, an individual must meet the following criteria: (a) if employed before July 1, 1981; attained the age of 55 or completed 20 years of service, or (b) if employed on or after July 1, 1981; attained the age of 55 or completed 25 years of service. The normal retirement benefit is calculated using average final compensation (i.e., the highest consecutive three years) and years (or partial years) of service at date of termination. The plan provides that unused sick leave credit may be used in the calculation of average final compensation by projecting the final salary during the unused sick leave period. Those sworn on or after January 1, 2013, may not use more than 2,080 hours of accrued sick leave toward service credit for retirement or Deferred Retirement Option program (DROP) entry. Unused sick leave is also used to increase years of service for calculating benefits and determining retirement eligibility.

*Deferred Retirement Option Program (DROP):*

Those eligible for normal retirement may enter DROP for a period of up to three years. While participating 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. Plan B members who enter DROP may use a maximum of 2,080 hours of sick leave towards retirement service credit.

*Early Retirement:*

A member is eligible for early retirement upon attaining at least 20 years of creditable service.

*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 employment. At age 55, these members are entitled



## Notes to the Financial Statements

(continued)

to their normal retirement benefit based on service with the Police Department.

***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 for total disability are 66.67 percent of the salary, reduced by any Workers' Compensation benefits. These benefits continue during the existence of the disability.

***Non-Service Connected Disability Retirement:***

Non-service connected disability retirement is available for vested members who become disabled due to an injury or illness that is not job-related. Normal retirement benefits are paid.

***Death Benefits:***

*If death occurs prior to retirement:* An automatic monthly benefit is payable to the member's spouse and children. This benefit equals \$2,252.59 for the spouse or surviving handicapped child (if there is no spouse), plus each eligible child receives \$901.03 up to a maximum total family benefit of \$4,505.17 (these benefits are indexed to inflation). If the death occurred in the line of duty, the spouse or surviving handicapped child (if there is no spouse) may elect to receive 66.67 percent of the member's regular salary at the time of death in lieu of the automatic benefits.

*If death occurs after retirement* In addition to the automatic benefit detailed above, at the time the member retires, the plan provides for the member to elect survivor benefit options for the Surviving Spouse or a Handicapped Child at 100 percent, 66.67 percent or 50.0 percent of the retiree's benefit.

***Cost of Living Benefit:***

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

[Note:](#) Detailed provisions may be found in the Retirement Handbook for Active Employees.

***B. Board of Trustees.***

Seven members serve on the Fairfax County Police Officers Retirement System. Three of the members are citizens appointed by the Fairfax County Board of

Supervisors. Two of the members are elected by Fairfax County Government Employees, and one of the members is elected by retiree representatives. The Director of Finance also serves as an Ex Officio member.

***C. Membership.***

At June 30, 2016, the date of the latest actuarial valuation, membership in the System consisted of:

Retirees and beneficiaries receiving benefits	1,039
Terminated plan members entitled to but not yet receiving benefits	47
Deferred Retirement Option Program (DROP) participants	75
Active plan members	1,319
<b>Total</b>	<b><u>2,480</u></b>

***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. 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%, 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 addition to the monthly retirement annuity. The DROP balance as of June 30, 2016, was \$7.1 million.

Notes to the Financial Statements  
(continued)

**E. Contributions**

The contribution requirements of the System’s members are established and may be amended by County ordinances. Member contributions are based on 8.65 percent of compensation for the year ended June 30, 2016. The County is required to contribute at an actuarially determined rate; the rate for the year ended June 30, 2016, was 37.98 percent of annual covered payroll. The decision was made to commit additional funding and a rate of 37.98 percent was adopted for fiscal year 2016. Total contributions for the fiscal year ended June 30, 2016, amounted to \$49.9 million.

**F. Deductions**

The deductions from the System include 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, 2016, amounted to \$71.3 million.

**Note 3. Investments**

*A. Investment Policy*

The authority to establish the System is set forth in Chapter 303 of the Acts of Assembly (law of the Commonwealth of Virginia). Section 26-45.1 of the Code of Virginia (Code), and updated by Section 51.1-803 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 a Statement of Investment Objectives and Policy which establishes a broad set of investment objectives, guidelines, risk tolerance and performance standards for the assets of the System. The Board of Trustees has the authority to amend the investment policy. The Board recognizes that investing in worldwide capital markets inherently entails the assumption of risk. The Board believes that part of the risk involved in managing the System’s assets can be reduced by

investing in diversified, lowly-correlated asset classes and employing different philosophies and investment management styles. The Board has selected a long-term strategic asset allocation strategy which provides a high degree of diversification, maintains appropriate asset coverage of plan liabilities, and also optimizes investment return. Investment decisions for these assets are made by the Board of Trustees or investment managers selected by the Board. The Board hires each of its investment advisory firms on the basis of its specific area of expertise as well as its fit with the total risk and return objectives of the System. Each manager exercises investment discretion around specifically mandated quality, concentration, benchmark and performance guidelines, and practices active risk controls in order to achieve the System’s investment expectations.

The following was the System’s adopted asset allocation policy as of June 30, 2016. Our asset allocation policy commonly exceeds 100% 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. We also commonly include 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
U.S. Equities	17.0%
International Equities	12.0%
Fixed Income	30.0%
Real Estate	5.0%
Alternatives	37.0%
Risk Parity	30.0%

*B. Concentrations*

For the most part, the overall investment policy does not identify a specific level of credit risk, interest rate risk or foreign currency risk. That is addressed at the individual account level. The guideline for “concentration of risk” is system-wide, however. The System does not hold investments (other than U.S. Government and U.S. Government-guaranteed obligations) in any one organization that represent 5.0 percent or more of net position available for benefits. All investments, except for the pooled and mutual

## Notes to the Financial Statements

(continued)

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 and the custodian provides insurance for all custody assets.

The System's fixed income portfolio shall be, on average, comprised of high-quality issues and limits are imposed on investment managers' below-investment-grade holdings. Unless otherwise specified, if any security has a split rating, the higher of the two ratings is used for the purposes of meeting minimum quality standards.

*C. Rate of Return*

For the year ended June 30, 2016, the annual money-weighted rate of return on pension plan investment, net of pension plan investment expense, was 0.9 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*

Investments by Fair Value Level	6/30/2016	Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3
Asset-backed securities	\$75,710,401		\$75,710,401	
Convertible or exchangeable securities	3,519,860		3,519,860	
Convertible securities	261,744	\$261,744		
Corporate and other bonds	67,159,773	2,163,135	64,996,638	
Equity	148,115,975	148,115,975		
Fixed income securities	5,406,299	5,406,299		
Futures contracts	1,399,904	1,399,904		
Natural resources	3,172,560			\$3,172,560
Preferred securities	245,050		245,050	
Short-term investments	55,468,942		1,722,223	53,746,719
U.S. Government obligations	<u>53,072,184</u>	<u>53,072,184</u>		
<b>Total investment by fair value level</b>	<b>\$413,532,692</b>	<b>\$210,419,241</b>	<b>\$146,194,172</b>	<b>\$56,919,279</b>
Investment measured at the net asset value (NAV)				
Alternative investments	\$201,974,313			
Fixed income	114,214,509			
International equities	49,558,651			
Risk parity	365,133,221			
U.S. equities	<u>122,026,679</u>			
<b>Total investments measured at the NAV</b>	<b>\$852,907,373</b>			
<b>Total investments measured at Fair Value</b>	<b><u>\$1,266,440,065</u></b>			

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 give the highest level to unadjusted quoted prices in

## Notes to the Financial Statements

(continued)

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 tables in the previous page show the fair value leveling 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.

## Investment Measured at NAV

	Fair Value	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Alternative investments	\$201,974,313	\$28,234,992	Monthly, Quarterly	60 days
Fixed income	114,214,509	41,183,069	Monthly, Semi-Annual,	10 to 90 days
International equities	49,558,651		Daily, Monthly	1 to 15 days
Risk parity	365,133,221		Monthly	3 to 15 days
U.S. equities	<u>122,026,679</u>		Monthly, Quarterly	15 to 90 days
Total investment measured at NAV	<u>\$852,907,373</u>	<u>\$69,418,061</u>		

**Alternative Investment:**

*Relative Value:* This type includes investment in a hedge fund that seeks to harvest risk premium from four return sources that have traditionally shown up as alpha, but as investors and attribution modeling have become more sophisticated, have become increasingly characterized as alternative or "style" premiums such as: Value – Tendency for relatively cheap assets to outperform relatively expensive ones; Momentum – Tendency for recent relative performance to continue in the near future; Carry – Tendency for higher-yielding assets to provide higher returns than lower; Defensive – Tendency for lower-risk, high-quality assets to generate higher returns. They 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 this hedge fund has been determined using the NAV per share of the investments.

*Multi-strategy:* This type includes two hedge funds. The first one uses quantitative and qualitative tools to optimize return per unit of volatility. The fair values of each of this hedge fund has been determined using the NAV per share of the investments. The fund has quarterly liquidity and 33 day notice period for redemptions. The second one focuses on acquiring minority equity stakes in institutionalized hedge fund firms with assets under management in excess of \$1.0 billion.

*Event Driven:* This type includes investment in a hedge fund focuses on global long/short credit and event driven positions. The fair values of the investments in this type have been determined using NAV per share (or its equivalent) of the investments. The fund has quarterly liquidity and 65 day notice period for redemptions.

*Global Macro:* This type includes two hedge funds. The first one has 100 active ideas across fixed income,

## Notes to the Financial Statements

(continued)

currencies, equities and commodities. The process is equally driven by analysis of the macro environment, flows of capital, and the expected reaction to changes in interest rates and other drivers. The fair values of the investments in this type have been determined using NAV per share (or its equivalent) of the investments. The second one focuses on China, investing in equity, credit, interest rate, currency and commodity products. The fund has monthly liquidity and 30 day notice period for redemptions.

*Trend Following:* This type includes one hedge fund that is a Commodity Trading Advisor (CTA) that analyzes market prices to determine trends then uses tactical asset allocation to capture and ride market trends. The Fund is a diversified portfolio with exposure to currencies, commodities, bonds and short interest rates, and equity indices at various times. These exposures are typically achieved through the use of derivatives which allows quick response because of the high liquidity in the derivative markets. The fair values of the investments in this type have been determined using NAV per share (or its equivalent) of the investments.

**Fixed Income:**

This type includes three funds and two private debt funds. The first one is a directional opportunistic global credit fund investing in public and private credit across commercial real estate, residential real estate, corporates, other. The fund invests principally in performing, stressed or distressed securities and loans of any type and within any sector across the global fixed income markets. The second one focuses on distressed residential and commercial real estate related debt and equity securities. The fund seeks to take advantage of global financial institutions which are deleveraging to comply with widespread regulatory reform and continuing to make non-economic asset sales decisions. The third one invests in U.S. convertible bonds and the fund has monthly liquidity and 10 day notice period for redemptions. The two private debt funds are middle market direct lending funds that negotiate 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 four to five years. Loan payments are also distributed on a quarterly basis. The loans are held at book value unless a payment default has occurred.

**International Equities:**

This type includes two funds. The first one is an international small cap fund that uses a quantitative approach. In addition to traditional value measures such as price/earnings and price/book ratios, the firm also considers growth-related factors, such as price momentum and trends in analysts' earnings estimates, to target undervalued companies that have strong prospects for future outperformance. The fund has daily liquidity. The second one seeks long term capital appreciation by investing primarily in companies located in emerging market countries and opportunistically, in frontier market countries. The portfolio typically holds 30-50 companies within global emerging markets. Country and sector exposures are primarily a by-product of individual stock selection. The fund has monthly liquidity and 15 day notice period for redemptions.

**Risk Parity:**

This type includes three funds that invests across asset classes using a risk balanced approach in their asset allocation of the Funds with the intent to balance risk across all four combinations of Rising and Falling Growth and Inflation. The main goal is to construct a portfolio that achieves the best risk adjusted return at a 10% expected volatility by overweighting the lower risk asset classes and balance expected returns in inflationary, deflation, high growth and low growth periods. 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 using NAV per share (or its equivalent) of the investments.

**U.S. Equities:**

This type includes three hedge funds. The first one is a bundled portable alpha mandate which uses futures on the S&P 500 Index and ports it to a fundamental global macro/fixed income fund. The fund has

## Notes to the Financial Statements

(continued)

exposure to interest rates, Foreign exchange, equity indices and commodities. However, the majority of its exposure is generally to interest rates. It differs from the average macro fund in that it will also have exposure (albeit very limited) to credit (both IG & HY), mortgages (Residential Mortgage Backed Securities & Commercial Mortgage Backed Securities) and Asset-Backed Securities. The second one is a U.S. small cap deep value long/short equity fund. The team looks for companies with management or capital structure issues. They identify undervalued companies and then perform a fundamental value analysis to find catalysts that may spark change in the company. The Fund will then, on its own or together with other members of a group, acquire a controlling interest in the company and then force management to enact the changes they feel are necessary for a turnaround. The fair

values of each of these hedge funds has been determined using the NAV per share of the investments. The fund has quarterly liquidity and 90 day notice period for redemptions. The third one is based on the fundamental concepts of value (buying securities that are cheap and selling those that are expensive) and momentum (buying securities that are getting better and selling those that are getting worse) investing. The fund applies both concepts through the use of numerous proprietary indicators across many sectors, while generally giving more weight to value than momentum. This is a long/short strategy that maintains a net 100% invested position by investing 130% of portfolio assets in long positions and 30% in short positions. The fund has monthly liquidity and 15 day notice period for redemptions

E. The System's investment quality ratings at June 30, 2016, were as follows:

Type of Investment	Fair Value	Ratings	Percent of Fixed
US Government	\$53,072,184	AA	26.7%
Corporate and other	1,084,259	AAA	0.5%
	6,346,588	AA	3.2%
	1,471,685	A	0.7%
	6,491,107	BBB	3.3%
	23,095,108	BB	11.6%
	16,835,768	B	8.5%
	2,811,715	CCC	1.4%
	3,480,700	CC	1.7%
	792,595	D	0.4%
	7,768,622	NR	3.9%
Asset-backed	30,392,820	AA	15.3%
	3,715,493	BBB	1.9%
	869,494	BB	0.4%
	923,387	B	0.5%
	5,802,093	CCC	2.9%
	2,183,150	CC	1.1%
	14,770,099	D	7.4%
	<u>17,053,865</u>	NR	<u>8.6%</u>
<b>Total fixed income</b>	<b>\$198,960,732</b>		<b>100.0%</b>
<b>Short-term</b>			
Cash and cash equivalents	\$1,776,515	Unrated	
Police Enhanced STIF*	<u>53,746,719</u>	Unrated	
	<b>\$55,523,234</b>		

\*Short-term investment

As of June 30, 2016, the fixed income portfolio consisted of 51.6 percent invested in investment grade securities, 35.9 percent invested in securities rated below-investment-grade and 12.5 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.

## Notes to the Financial Statements

(continued)

F. The System's investments' sensitivity to interest rates at June 30, 2016, were as follows:

Investment Type	Fair Value	Option-Adjusted Duration (yrs)	Percentage of Fixed Income
US Government	\$53,072,184	6.0	26.7%
Corporate and other bonds	70,178,147	5.4	35.3%
Asset-backed securities	<u>75,710,401</u>	<u>3.7</u>	<u>38.0%</u>
<b>Total Fixed Income</b>	<b><u>\$198,960,732</u></b>	<b><u>4.9</u></b>	<b><u>100.0%</u></b>
<b>Short term investments</b>			
Cash and cash equivalents	1,776,514	0	
Police Enhanced STIF	<u>53,746,719</u>	<u>0.1</u>	
	<u>\$55,523,233</u>		

As of June 30, 2016, the System's overall fixed income portfolio option-adjusted duration was 4.9 years. BCAG's established option-adjusted duration was 5.47 years.

G. Short term investments of \$55.5 million includes a position of \$53.7 million of uninvested 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 is the risk that changes in exchange rates will adversely affect the fair value of the investment. The System's investments at June 30, 2015, held in currencies other than U.S. dollars were as follows:

International Securities	Short-Term Investments and Other	Convertible and Fixed Income	Equity	Total
Australian Dollar	\$1	\$233,040	\$7,064,695	\$7,297,736
Brazil Real	0	152,044	28,536	180,580
Canadian Dollar	49,899	67,514	4,375,813	4,493,226
Colombian Peso	0	645,297		645,297
Danish Krone	0		6,777,755	6,777,755
Euro Currency Unit	24,306	83,166	19,867,938	19,975,410
Hong Kong Dollar	5		9,540,555	9,540,560
Indian Rupee	0	812,362		812,362
Indonesian Rupiah	0	39,155		39,155
Israeli Shekel	0		99,443	99,443
Japanese Yen	23,645		21,941,391	21,965,036
Mexican Peso	0	1,961,835	1,040,469	3,002,304
Norwegian Krone	0		378,192	378,192
Pound Sterling	(2)	166,658	14,652,951	14,819,607
Singapore Dollar	(0)	454,833	1,158,093	1,612,926
South African Rand	0	0	600,274	600,274
South Korean Won	0	0	1,227,982	1,227,982
Swedish Krona	0	0	1,025,783	1,025,783
Swiss Franc	0	0	4,511,220	4,511,220
Thailand Baht	0	0	322,964	322,964
Turkish Lira	<u>2</u>	<u>0</u>	<u>86,335</u>	<u>86,337</u>
	<u>\$97,856</u>	<u>\$4,615,904</u>	<u>\$94,700,389</u>	<u>\$99,414,149</u>

I. Derivative Financial Instruments.



## Notes to the Financial Statements

(continued)

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 2016, 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. Others such as asset-backed securities, like collateralized mortgage obligations (CMOs), are sensitive to changes in interest rates and pre-payments. It should also be noted that the System 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 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. To address counterparty risk, the System instructs our investment managers who use swaps, forwards, and options to only enter into contracts with counterparties rated at investment grade of BBB or

better by at least one nationally recognized rating agency.

At June 30, 2016, the System held the following three types of derivative financial instruments: futures, swaps and currency forwards. Futures, swaps and currency forwards contracts provide the System with the opportunity to build passive benchmark positions, manage portfolio durations in relation to various benchmarks, adjust portfolio yield curve exposure, 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 GASB 53 are reported at fair value. The change 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

(continued)

The notional value of the System's investment in futures contracts at June 30, 2016, is as follows:

Types of Futures	Base Exposure	Notational Cost
Cash & cash equiv futures- Short	(\$54,170,391)	(\$55,073,654)
Equity-Long	100,225,090	100,939,952
Fixed income securities- Long	<u>52,808,242</u>	<u>51,596,739</u>
<b>Total</b>	<b><u>\$98,862,941</u></b>	<b><u>\$97,463,037</u></b>

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, 2016:

	Base Exposure	Fair Value
<b>Fixed Income Swaps</b>		
Cleared credit default swaps	\$251,690	\$244,917

Currency Forwards.

Currency forwards represent foreign exchange contracts and are used to effect 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.

Foreign Currency Contracts Purchased	Notional (local currency)	Foreign Currency Contract Receivable in U.S. Dollars	Unrealized Gain/(Loss)
Euro Currency Unit	(\$656,000)	(\$730,726)	\$9,187
Japanese Yen	(125,811,000)	(1,229,654)	(53,548)
Pound Sterling	(104,000)	(139,062)	<u>12,107</u>
			<u>(\$32,254)</u>

Notes to the Financial Statements  
(continued)

*J. Securities Lending.* The Board of Trustees' policies permit the System to lend its securities to broker-dealers 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. 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 balance sheets since the Retirement Administration Agency does not have the ability to pledge or sell the collateral securities absent borrower default.

agent made on its behalf. At year end, 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 than last year to equity repurchase securities. At June 30, 2016, 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.

The System did not impose any restrictions during fiscal year 2016 on the amounts of loans the lending

The following represents the balances relating to the securities lending transactions at June 30, 2016:

Securities Lent	Underlying Securities	Cash Collateral Investment Value	Securities Collateral Investment Value
Lent for Cash Collateral			
Corporate and other bonds	\$120,090	\$123,350	
Common and preferred stocks	11,696,291	12,171,178	
Lent for Securities Collateral			
Common and preferred stocks	<u>14,432,961</u>	_____	<u>\$15,946,222</u>
<b>Total Securities lent</b>	<b><u>\$26,249,342</u></b>	<b><u>\$12,294,528</u></b>	<b><u>\$15,946,222</u></b>

## Notes to the Financial Statements

(continued)

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

The components of the net pension liability at June 30, 2016, were as follows:

Total pension liability	\$1,560,517,712
Plan fiduciary net position	1,270,389,713
Net pension liability	\$290,127,999
Plan fiduciary net position as a percentage of the total pension liability	81.4%

*B. Actuarial Methods and Assumptions.* The Total Pension Liability was determined by an actuarial valuation as of June 30, 2016, using the following actuarial assumptions, applied to all periods included in the measurement.

Discount rate, net of plan	7.25%
Inflation	2.75%
Salary increases, 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 13, 2016. In the Schedule of Changes in Net Pension Liability, the beginning of year amount differs from the actuarial accrued liability listed in the July 1, 2015, actuarial valuation report because GASB 67 disclosures used a roll-forward methodology and did not include the liability gain that was measured in the 2015 valuation.

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 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, 2016, was 31.37 percent of annual covered payroll. The decision was made to commit additional funding and a rate of 37.98 percent was adopted for fiscal year 2016. Since the PORS'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 again to 95.0 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% 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. 20% of deaths are assumed to be service-connected.

The actuarial assumptions used in the June 30, 2016, valuation were based on the results of an actuarial experience study for the period July 1, 2010 to June 30, 2015.

Notes to the Financial Statements

(continued)

*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 real rates of return for each major asset class included in the System's target asset allocation as of June 30, 2016, are summarized below.

Asset Class	Long Term Expected Real Rate of Return
U.S. Equities	4.65%
International Equities	4.50%
Fixed Income	2.40%
High Yield	4.20%
Real Estate	4.65%
Commodity	4.65%
Risk Parity	6.00%
Absolute Return	9.85%

*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.

In making this determination, we assumed the outflows would equal the anticipated benefit payments from the 2015 actuarial valuation. The administrative expenses attributable to current actives were assumed to equal 0.30 percent of covered payroll. The inflows to the plan were

assumed to continue at the average aggregate rate for the 2015 active population of 8.65 percent of payroll and County contributions were projected at 37.98 percent for fiscal year 2016, 38.98 percent for fiscal year 2017, with continued increases to 42.42% to be contributed until 2032. After that time the County contribution was assumed to drop to the normal cost plus expenses (21.87 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 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	Discount Rate	1% Increase
	6.25%	7.25%	8.25%
Net Pension Liability	\$495,152,354	\$290,127,999	\$99,840,413
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	72.0%	81.4%	92.7%

**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)

<b>Schedule of Changes in the Net Pension Liability and Related Ratios</b>			
	Year Ended June 30		
	2016	2015	2014
Total Pension Liability			
Service cost	\$30,913,269	\$30,389,897	\$30,858,609
Interest	110,362,493	106,739,905	102,492,490
Changes in benefit terms	0	0	0
Differences between expected and actual experience	(30,820,874)	(11,515,790)	0
Changes in assumptions	9,895,400	0	0
Benefit payments, including refunds of member contributions	<u>(70,749,811)</u>	<u>(67,757,160)</u>	<u>(62,287,705)</u>
Net Change in Total Pension Liability	<u>49,600,477</u>	<u>57,856,852</u>	<u>71,063,394</u>
Total Pension Liability - beginning	<u>1,510,917,235</u>	<u>1,453,060,383</u>	<u>1,381,996,989</u>
Total Pension Liability - ending (a)	<u>\$1,560,517,712</u>	<u>\$1,510,917,235</u>	<u>\$1,453,060,383</u>
Plan Fiduciary Net Position			
Contributions - employer	\$40,646,884	\$37,867,181	\$34,178,960
Contributions - member	9,324,066	8,889,931	10,091,331
Net investment income	10,764,028	41,601,153	176,683,610
Benefit payments, including refunds of member contributions	(70,749,811)	(67,757,160)	(62,287,705)
Administrative expenses	<u>(510,544)</u>	<u>(443,230)</u>	<u>(431,064)</u>
Net Change in Plan Fiduciary Net Position	<u>(10,525,377)</u>	<u>20,157,875</u>	<u>158,235,132</u>
Plan Fiduciary Net Position - beginning	<u>1,280,915,090</u>	<u>1,260,757,215</u>	<u>1,102,522,083</u>
Plan Fiduciary Net Position - ending (b)	<u>1,270,389,713</u>	<u>1,280,915,090</u>	<u>1,260,757,215</u>
Net Pension Liability (Asset) - ending (a)-(b)	<u>\$290,127,999</u>	<u>\$230,002,145</u>	<u>\$192,303,168</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	81.4%	84.8%	86.8%
Covered Employee Payroll	<u>\$107,021,811</u>	<u>\$102,844,055</u>	<u>\$100,912,194</u>
Net Pension Liability as a Percentage of Covered Employee Payroll	271.1%	223.6%	190.6%

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 Police Officers Retirement Systems.

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

## Required Supplementary Information

(continued)

## Schedule of Net Pension Liability

Year Ended June 30

	2016	2015	2014
Total Pension Liability	\$1,560,517,712	\$1,510,917,235	\$1,453,060,383
Plan Fiduciary Net Position	<u>1,270,389,713</u>	<u>1,280,915,090</u>	<u>1,260,757,215</u>
Net Pension Liability	<u>\$290,127,999</u>	<u>\$230,002,145</u>	<u>\$192,303,168</u>
Plan Fiduciary Net Position as a Percentage of the Total Plan Liability	81.4%	84.8%	86.8%
Covered Employee Payroll	\$107,021,811	\$102,844,055	\$100,912,194
Net Pension Liability as a Percentage of Covered Payroll	271.1%	223.6%	190.6%

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
2016	0.9%
2015	3.4%
2014	16.2%

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

## Schedule of Employer Contributions

Fiscal Year	Actuarial Determined Contribution	Contributions in Relations to the Actuarial Determined Contribution	Contribution Deficiency (Excess)	Covered Employee Payroll	Contributions as a Percentage of Covered Payroll
2016	\$40,646,884	\$40,646,884	\$-	\$107,021,811	37.98%
2015	37,867,181	37,867,181	-	102,844,055	36.82%
2014	34,178,960	34,178,960	-	100,912,194	33.87%
2013	34,011,347	34,011,347	-	102,598,332	33.15%
2012	31,700,690	31,700,690	-	101,280,160	31.30%
2011	29,174,611	29,174,611	-	103,054,083	28.31%
2010	23,766,626	23,766,626	-	104,057,032	22.84%
2009	23,508,402	23,508,402	-	102,926,454	22.84%
2008	21,447,907	21,447,907	-	102,132,890	21.00%
2007	19,222,753	19,222,753	-	98,326,102	19.55%

## Required Supplementary Information

(continued)

### Notes to Schedule

Valuation Date	6/30/2014
Timing	Actuarially determined contribution rates are calculated based on the actuarial valuation one year prior to the beginning of the plan year
Actuarial cost method	Entry Age
Asset valuation method	3-year smoothed market
Amortization method	Corridor method, amortize liability outside of 95% corridor over an open 15 year period with level % of payroll.
Discount rate	7.5%
Amortization growth rate	3.0%
Price inflation	FYE 2016 2.75%, FYE 2015 and prior 3.0%
Salary increases	3.0% plus merit component based on employee's years of service
Mortality	Sex distinct RP-2000 Combined Mortality projected to 2015 using Scale AA

A complete description of the methods and assumptions used to determine contribution rates for the year ending June 30, 2016, can be found in the June 30, 2016, actuarial valuation report.

### Summary of Significant Changes to the Pension System

The summary of employer and employee contribution rates during the past 5 years and other significant changes in the pension system are as follows:

Contribution Rates		
Fiscal Year	Employer	Employee
2016	37.98%	8.65%
2015	36.82%	8.65%
2014	33.87%	10%
2013	33.15%	10%
2012	31.30%	10%

**July 2014** Member contribution rate decreased from 10% to 8.65%

**January 2013** Police officers sworn on or after January 1, 2013, will be automatically enrolled in Option B. The maximum amount of accrued sick leave is capped at 2,080 hours.

## Other Supplementary Information

## Schedule of Investment &amp; Consultant Expenses

For the Year Ended June 30, 2016

Activity		
Investment expenses		
Investment manager fees	\$2,933,668	
Custodial Fees	76,557	
Other consultant expenses		
Consulting fees	<u>40,996</u>	
<b>Total Investment and Consulting Fees</b>		<b><u>\$3,051,221</u></b>

## Schedule of Administrative Expenses

June 30, 2016

Personnel services		
Salaries and wages	\$224,540	
Fringe benefits	<u>100,059</u>	
Total personnel services		\$324,599
Professional services		
Actuarial	62,269	
Audit	6,276	
Legal	<u>0</u>	
Total professional services		68,545
Communications		
Phone charges	4,792	
Printing, binding and copying	3,171	
Postage	<u>3,539</u>	
Total communications		11,502
Supplies		
Office supplies	<u>2,635</u>	
Total supplies		2,635
Other services and charges		
Board and staff travel and development	27,169	
Professional membership	1,066	
Professional subscription	99	
Insurance	7,889	
Building rent	18,882	
Equipment	181	
Computer system	36,518	
Other operating	<u>11,459</u>	
Total other services and charges		<u>103,263</u>
<b>Total Administrative Expenses</b>		<b><u>\$510,544</u></b>





## County of Fairfax, Virginia

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

November 14, 2015

Dear Members of the Board of Trustees:

U.S. equity markets provided mixed returns in the fiscal year 2016 as episodes of heightened market volatility interrupted an otherwise positive market environment. Domestic bond markets proved attractive during these periods of disruption providing a desired safe haven for investors and delivering strong returns. On the international side, non-U.S. developed equities edged lower as U.S. dollar strength cut into returns and political turmoil led by the U.K.'s decision to leave the EU sent a wave of volatility through the market. Despite easy policy from central banks in Europe and Japan, continuing growth concerns also contributed to negative equity returns.

The U.S. economy appeared to exhibit continued resilience in the face of global market conditions and geo-political events. More consistently positive economic news for the U.S. helped push domestic equity prices higher. Notwithstanding, yields on most fixed income securities narrowed on greater demand for safe haven assets, even as the economy grew at a moderately-healthy pace and unemployment receded further. The large-cap domestic equity market, as measured by the S&P 500 Index, capped off the fiscal year with a +4.0% return even as most smaller-cap domestic indices posted losses. The domestic bond market, as measured by the Barclays Aggregate Bond Index, returned +6.0% over the same period. The global equity market, as measured by the MSCI All Country World Index (net), returned -3.7% for the fiscal year, reflecting a blend of the positive results in the U.S. and the negative performance in the non-U.S. developed markets (MSCI EAFE down -10.2% for the trailing year) and emerging markets (MSCI EM down 12.1%).

During the quarter ended September 30, 2015, international equities contracted sharply with developed markets down around 10% and emerging markets losing nearly 18%. Fear of a pending rate hike by the Fed and negative headlines from China and Greece helped fuel the selloff. Greece and Brazil were among the hardest hit emerging economies, trading down 35% and 33%, respectively. Emerging market small-cap stocks continued to outpace their larger-cap peers. Within developed markets, European equities were down 8%, while Japanese stocks lost 10%. At home, equities suffered their worst quarterly loss in four years. The S&P 500 Index declined 6.4% in the third quarter, erasing its gains for the year; the Russell 2000 Index lost 11.9%. Within large-cap stocks, growth bested value, while value stocks lost less in the small-cap space. Overall, energy and healthcare were among the worst performing sectors. Within the U.S., Treasuries and other high-grade assets rallied as lower quality securities sold off amid the market volatility. To this end, the Barclays U.S. Aggregate Bond Index gained 1.2% in the third quarter. Risk premiums widened with U.S. investment-grade corporate spreads increasing 24 basis points to 169 basis points. High-yield bond spreads spiked 160 basis points to 630 basis points with the Barclays U.S. Corporate High Yield Index losing 4.8%.



### Fairfax County Retirement Systems

10680 Main Street \* Suite 280 \* Fairfax, VA 22030

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

[www.fairfaxcounty.gov/retirement/](http://www.fairfaxcounty.gov/retirement/)

The Treasury curve flattened over the quarter; the yield on the 30-year Treasury fell 24 basis points to 2.90%, while the yield on the one-year Treasury increased by six basis points to 0.34%. Outside the U.S., developed market bonds rallied as investors shunned risk; the Citigroup WGBI Index rose 1.7% in the third quarter. Meanwhile, emerging market debt faced headwinds. Weakening currencies continue to be the principal drag on emerging market debt. Consequently, debt denominated in local currency declined the most, losing 10.5%, while hard-currency sovereign debt fell 1.7%, according to the JP Morgan EMBI Index. In general, the debt of exporters of oil and commodities underperformed during the quarter. Brazilian debt was also sharply lower, rocked by a ratings downgrade by Standard & Poor's Ratings Services and continued economic weakness.

U.S. equities ended a volatile 2015 on a strong note. Despite a solid fourth quarter, the year saw the lowest gains for the S&P 500 since 2008 and for the Russell 2000 since 2011. Earlier in the quarter, equities rallied amid robust corporate earnings and macroeconomic data. Subsequently, stocks faltered amid plunging oil prices and concerns around the impact of a stronger U.S. dollar as the Fed tightens monetary policy. The consumer discretionary sector led performance in large caps in 2015 while healthcare dominated small caps; energy was the worst performing sector in both. Growth bested value in large and small equities. Meanwhile, developed markets recouped a portion of their third quarter losses, gaining 4.8% in the last quarter. For the calendar year, international equities were down around 0.4%. The energy and materials sectors drove losses, trading down over 16% in 2015; consumer staples and healthcare were the strongest performers, up over 8%. Emerging economies returned 0.7% as the Fed's 25 basis points rate hike—its first since 2006—drove markets lower; healthcare and consumer discretionary sectors gained during the quarter while industrials and staples lagged. For 2015, the materials sector—down over 20%—was a major detractor of performance. Brazil traded off 41% as the real declined sharply amid the country's political and economic problems. At home, the Fed's well telegraphed rate hike drove government yields higher in the fourth quarter, resulting in losses for Treasuries with maturities of less than one year. Within corporate credit, the precipitous selloff in commodity-related sectors was unrelenting. Consequently, high-yield debt was the worst performer during the quarter and in 2015, losing 2.07% and 4.47%, respectively; in high yield, energy and metals and mining lost nearly 25% last year. Investment-grade credit spreads widened 34 basis points over the course of 2015 to 165 basis points; contributors included global growth concerns, falling commodity prices, and record issuance of \$1.3 trillion which hampered liquidity. Abroad, emerging market debt remained hindered by a strengthening U.S. dollar, causing the local currency index to lose 0.01% compared to returns of 1.25% for the dollar-denominated index. Within developed markets, weakening currencies aided losses of 1.23%, according to the Citigroup WGBI Index.

Concerns around global growth and the precipitous decline in oil prices roiled stocks initially in the first quarter of 2016 but reassuring economic data triggered a dramatic reversal in March. The Standard & Poor's 500 Index posted its best return in March since 2009, putting it back in the black for the year. The S&P 500 ended the quarter with gains of 1.3%, while the Russell 2000 Index was down 1.5%. Returns were generally driven by the beaten down areas of the market, including smaller, lower-quality and commodity-related equities; however, high-quality stocks still lead for the year. Defensive bond-proxy sectors, for instance, telecom and utilities, were the best performers; value outperformed growth. Across the pond, developed markets also sold off earlier in the year and then rebounded following further rate cuts by the European Central Bank and comments from the Federal Reserve on a slowing pace for raising rates that fueled a weaker dollar. Non-U.S. markets lost 3%, according to the MSCI EAFE Index. European banks were hit the hardest during the quarter leading to losses of 9.6% for the financial sector. Energy, a laggard in 2015, was the best performing sector with returns of 4.7%. Japan experienced the worst results, selling off 6.5% in the first quarter. Similarly, emerging markets started the year with a sharp selloff, subsequently reversing course. As a result, emerging markets returned 13% in March—their best month since 2011. For the quarter, emerging markets gained 5.7%, besting other equity markets. Strongest performers included Brazil with gains of 27.4%. Global fixed-income markets staged a dramatic comeback in the second half of the quarter. Global yields were pushed lower with the ECB and Bank of Japan cutting rates deeper into negative territory. Further stimulus from the ECB, a dovish Fed statement and improvements in macroeconomic data bolstered performance. Global investment-grade spreads tightened during the period led by the industrials sector, while global high-yield debt sharply rebounded; at home, high-yield issues gained

3.2%. Given the rebound in commodities, commodity-related sectors led performance. Returns were positive across emerging markets with local sovereign debt markets leading the way as rates fell and currencies appreciated.

Markets witnessed quite a surprise in the second quarter of 2016 as the United Kingdom voted to leave the European Union. Concerns of increased political risk in the U.K. and Europe briefly jolted equity and currency markets across the globe. Risk assets sharply sold off but quickly reversed as market concerns abated. U.S. markets followed suit and ultimately continued their rally as the S&P 500 ended the quarter up 2.5%. Outside the U.S., emerging markets demonstrated resiliency to finish the quarter in positive territory. Developed market equities modestly recovered with the MSCI EAFE down only 1.5%. The Russell 2000 had a strong quarter as 9 out of the 10 economic sectors registered positive returns. From a sector basis, the more defensive sectors led the market higher with energy, telecommunications, utilities and health care. Sectors lagging in the quarter were consumer discretionary, information technology and industrials. Across the developed world, equity markets declined following the U.K.'s decision to leave the EU before rallying in the final days of the quarter. Ireland and Italy led developed markets lower, selling off 9.9% and 9.7%, respectively. In local terms, Japanese equity markets declined nearly 7%, while, for U.S. dollar investors, Japan equities returned a positive 1% as the yen approached a 2 year high against the dollar. The yen has rallied considerably for the year and continues to benefit from its perceived safe-haven status. Similar to the U.S., energy was the top sector in developed markets, returning roughly 11.5% while consumer discretionary stocks were one of the weakest returning -8.2% for the quarter. Within emerging markets, investors looked past the Brexit fears and recognized ongoing positive developments. Latin America was a particular focus, where favorable election results in Peru and further progress in the impeachment process in Brazil led to those markets returning 16.9% and 13.3%, respectively. In contrast, China equity markets continued to waver, trailing the broader benchmark with a return of -1.7%. From a sector perspective, consumer staples stocks performed the best, returning 4.2% for the quarter. The second quarter illustrated the current dichotomy within fixed income: safe-haven assets rallied significantly, while risky assets also outperformed as investors continued to search for yield. Globally, the 10 year German bund broke into negative territory, falling 28 bps to -0.13%. In Japan, 10-year bond yields continued to move lower, settling at -0.22%. At home, the U.S. 10 year Treasury yield compressed 29 bps, nearing its all-time low at 1.49%. The Barclays Aggregate returned 2.2%, while U.S. High Yield returned 5.5% for the quarter. Overall, credit was broadly supported by lower quality sectors. Non-credit risk assets also performed well, as emerging market local debt returned 2.7% in the quarter with a strong rebound in June of 5.9%. For the year, emerging local debt remains one of the best performing risk assets in fixed income, returning over 14%.

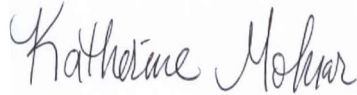
#### **Police Officers Retirement System**

The Police Officers Retirement System operates a balanced and diversified investment program with disciplined asset re-balancing to achieve strategic long-term goals. This disciplined investment process has been effective in achieving a long-term record of consistent asset growth.

For fiscal year 2016, investments provided a return of 1.1%, gross of fees (0.9%, net of fees). The System's annualized rates of return, gross of fees, were 6.8% (6.6%, net of fees) over the last three years and 5.9%, (5.7%, net of fees), over the last five years, 6.4%, (6.1%, net of fees), over the last ten years. The System's returns ranked in the 44th percentile of The Bank of New York Mellon universe of public plans in 2016, in the 44th percentile for the latest 3-year period, in the 71st percentile for the last 5 years, and in the 11th percentile of public plans for the past 10 years (performance are calculated using time-weighted rate of return).

During the past twelve months, we continue to focus on overall portfolio management, monitoring the financial markets and maintaining a high quality group of investment managers. The Sands Capital Emerging Markets Growth Fund was added to the International Equity manager lineup replacing Acadian Emerging Markets Fund. PIMCO Bonds Plus was removed from the Fixed Income manager lineup. AQR Style Premia, Dyal II, and Emerging Sovereign Group Nexus Fund were added to the Alternative manager lineup.

Sincerely,

A handwritten signature in cursive script that reads "Katherine Molnar". The signature is written in black ink on a light-colored background.

Katherine Molnar, CFA  
Senior Investment Officer

## Investments by Category and Investment Manager \*\*

June 30, 2016

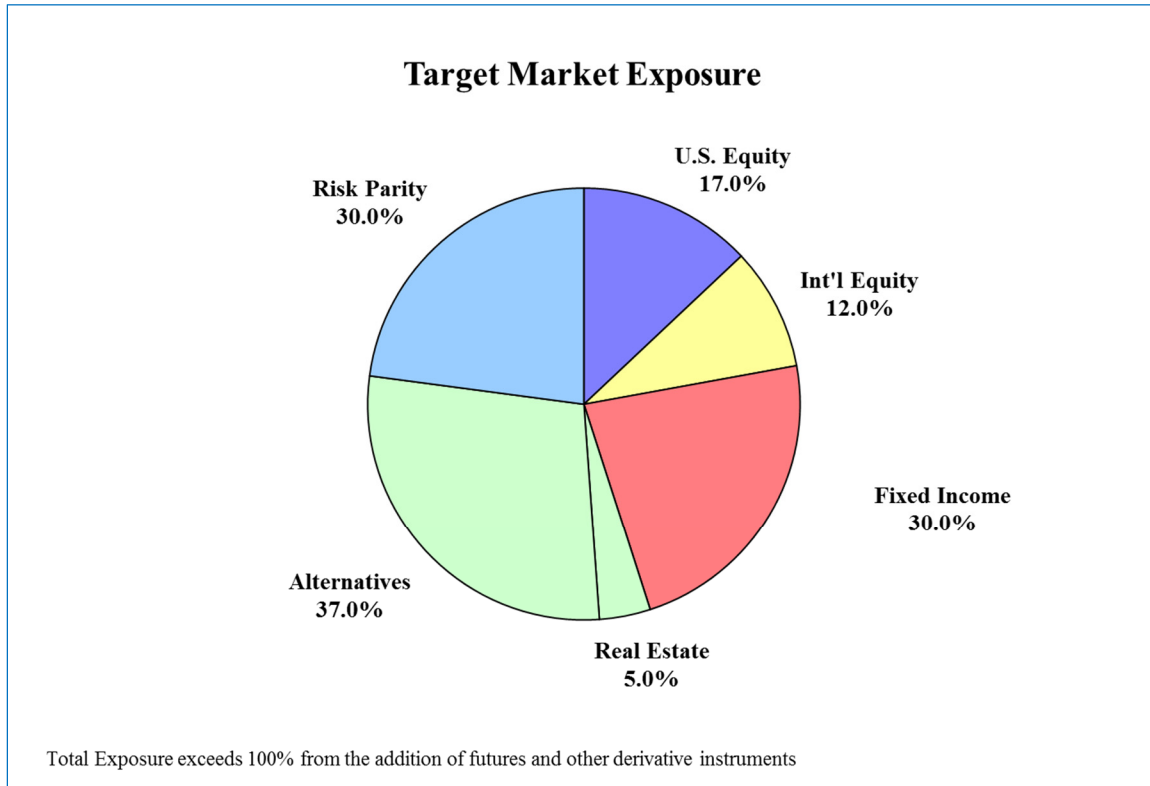
<i>Asset Class</i>				<b>% of Total</b>
<b>Manager</b>	<b>Investment Style</b>	<b>Total Fair Values</b>		<b>Portfolio</b>
<b><i>U.S. Equities</i></b>				
AQR Capital Management*	Small Cap Core	\$30,592,245		2.41%
PIMCO StocksPlus PARS*	Enhanced S&P 500 Index	54,127,240		4.26%
Starboard Value and Opportunity*	Small Cap Value Activist	37,307,193		2.94%
<b><i>International Equities</i></b>				
Acadian Asset Management*	Developed Markets Small Cap	18,014,343		1.42%
First Eagle Investment Management	Developed Markets Value	46,131,744		3.63%
Sands Capital Management*	Emerging Markets	31,544,308		2.49%
WCM Investment Management	Developed Markets Growth	48,780,222		3.84%
<b><i>Fixed Income</i></b>				
DoubleLine Capital	Mortgage-Backed Securities	90,330,502		7.11%
Loomis, Sayles & Company	High Yield Bonds	63,848,102		5.03%
Oaktree Capital Management*	Convertible Bonds	24,572,208		1.93%
PIMCO BRAVO II*	Bank Recapitalization/Value	27,193,577		2.14%
PIMCO Tactical Opportunities*	Directional Opportunistic Global Credit	25,710,924		2.02%
Czech Asset Management*	Direct Lending	36,737,800		2.89%
Parametric	TIPS	53,252,057		4.19%
The Vanguard Group*	Corporate High Yield	2,153,370		0.17%
<b><i>Real Estate</i></b>				
Cohen & Steers Capital Management	Global Real Estate Securities	69,810,332		5.50%
<b><i>Alternatives</i></b>				
AQR Style Premia*	Global Macro Absolute Return Fund	57,357,500		4.52%
BlueCrest Capital Management*	Multi-Strategy Fund	6,421,606		0.51%
Bridgewater Pure Alpha*	Global Macro Absolute Return Fund	45,355,425		3.57%
Dyal Capital Partners*	Multi-Strategy Fund	9,955,772		0.79%
Emerging Sovereign Group*	Global Macro Absolute Return Fund	8,403,436		0.66%
King Street Capital*	Long/Short Credit, Event Driven	45,257,964		3.57%
Systematica Investment Services*	Global Macro Absolute Return Fund	29,222,610		2.30%
<b><i>Risk Parity</i></b>				
AQR Global Risk Premium*	Risk Parity	132,341,524		10.42%
Blackrock Market Advantage*	Risk Parity	116,821,065		9.20%
Bridgewater Optimal Portfolio*	Risk Parity	115,970,631		9.13%
<b><i>Short-term</i></b>				
Parametric	Beta Manager	24,651,601		1.94%
Cash Held at County Treasurer	Operating Cash Account	1,561,468		0.12%
BNY Mellon Cash Investment Strategies	Plan Level Cash Accounts	<u>16,466,718</u>		<u>1.30%</u>
<b>Total Investments</b>		<b><u>\$1,269,893,487</u></b>		<b><u>100.00%</u></b>
*Pooled cash		*see pages 8-9 for complete listings of investment professionals.		

Police Officers Retirement System – Allocation of Capital Exposures

**Target Asset Allocation**

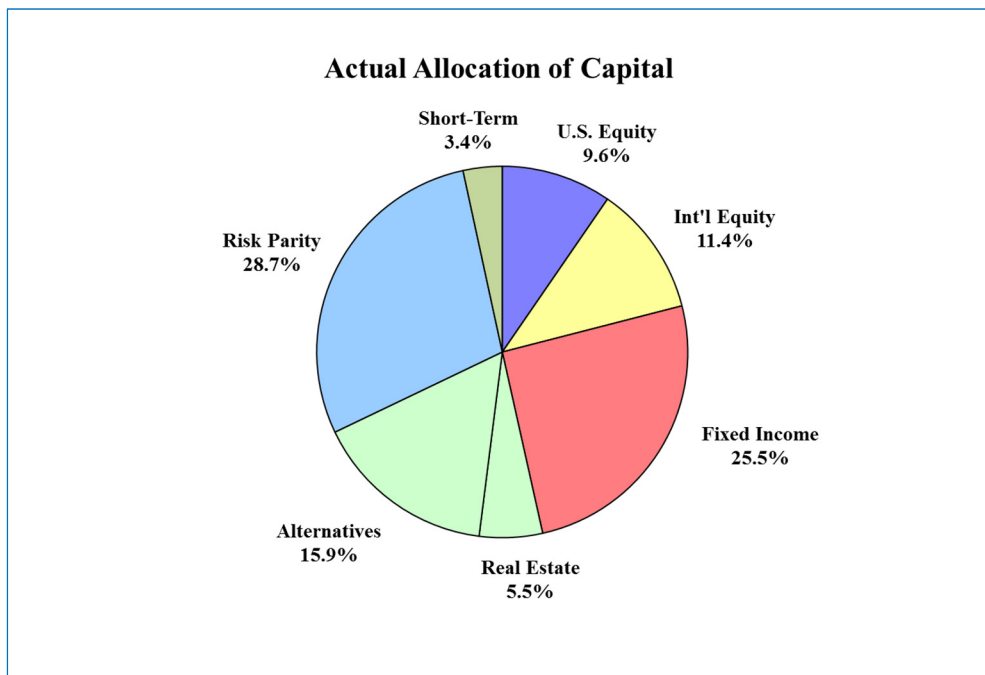
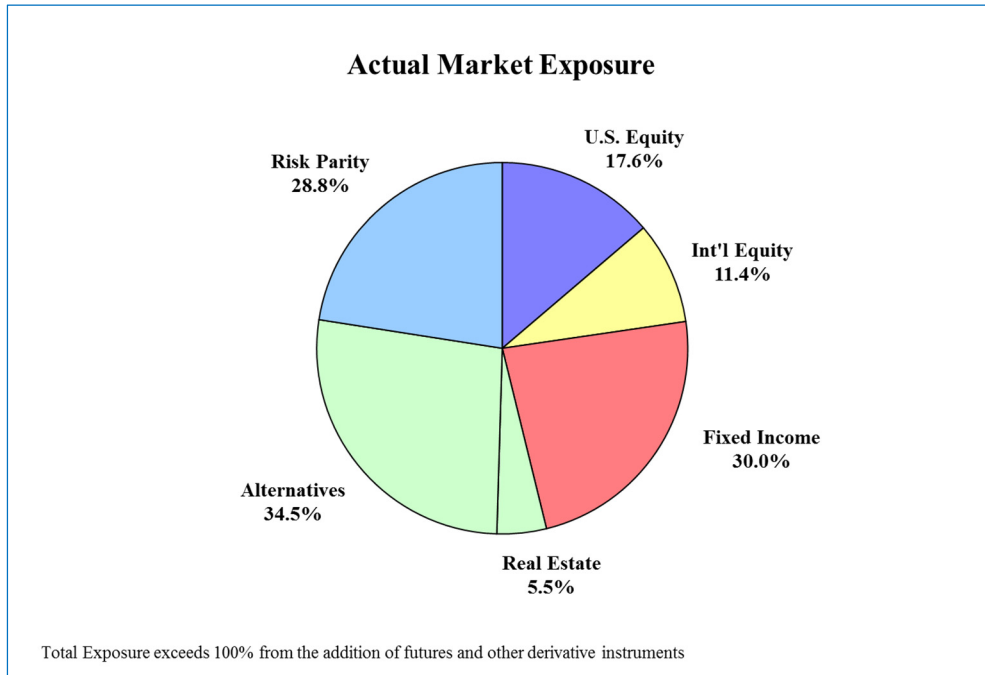
The asset structure shown below represents the Trustees' assessment of their optimal asset allocation as of June 30, 2016. The target asset allocation provides a reasonable expectation that the System's investment objectives can be achieved based on historical relationships of asset class performance.

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, 2016.



### Actual Asset Allocation as of June 30, 2016

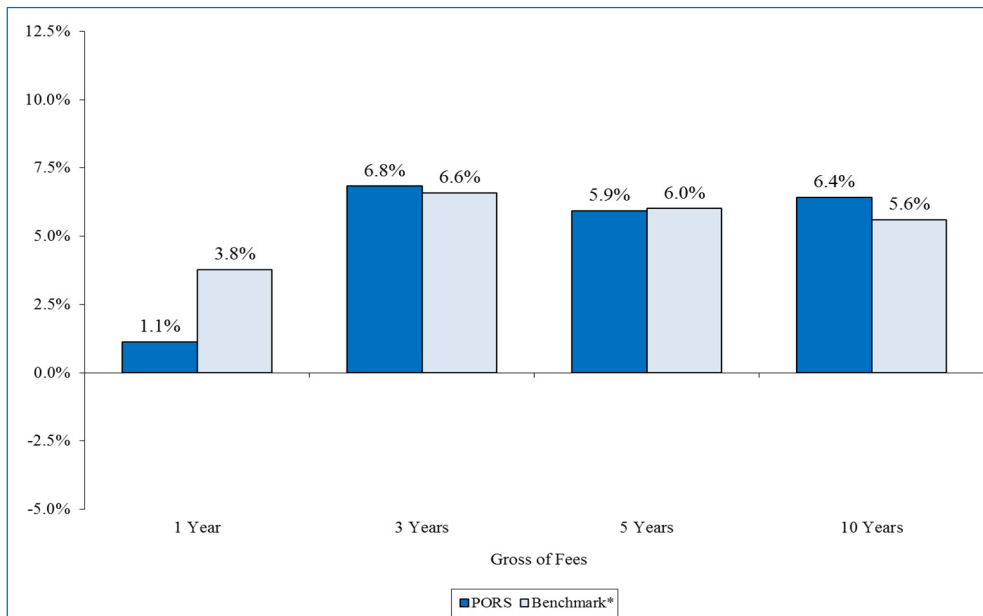
The asset structure of Police Officers Retirement System has historically reflected a proper balance of the System's needs for liquidity, growth of assets, and risk tolerance. The System's investment policy is designed to continue to meet its long-term investment objectives while, at the same time, providing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



**Investment Results**

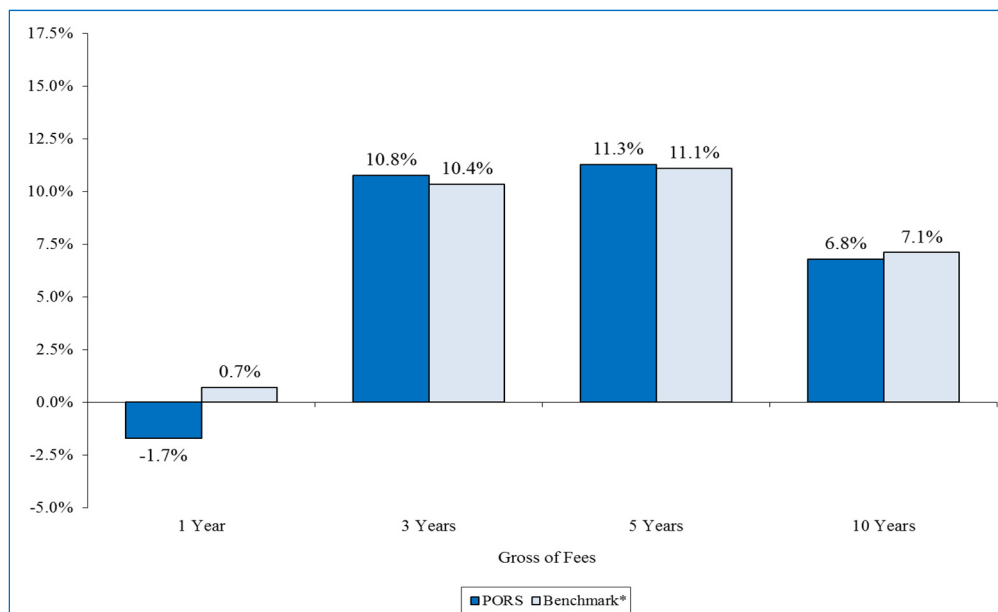
(Time weighted return, gross of fees)

Total Fund:



\*Current Blended Benchmark. Current Benchmark: 30% Risk Parity Benchmark (25% MSCI All Country World Index, 25% Bloomberg Commodity Index Total Return, 75% Barclays World Govt Inflation-Linked All Maturities USD Hdg, 75% Barclays Global Treasury 7 to 10 Yr Hedged Index -100% LIBOR 3 Month), 12% S&P 500, 5% R2000, 9.5% MSCI EAFE, 2.5% MSCI Emerging Markets, 25% BC Aggregate Bond Index, 5% B of A Merrill Lynch High Yield Master, 5% FTSE EPRA/NAREIT Developed, 6% LIBOR +3% (Benchmark has been revised through time)

U.S. Equity:



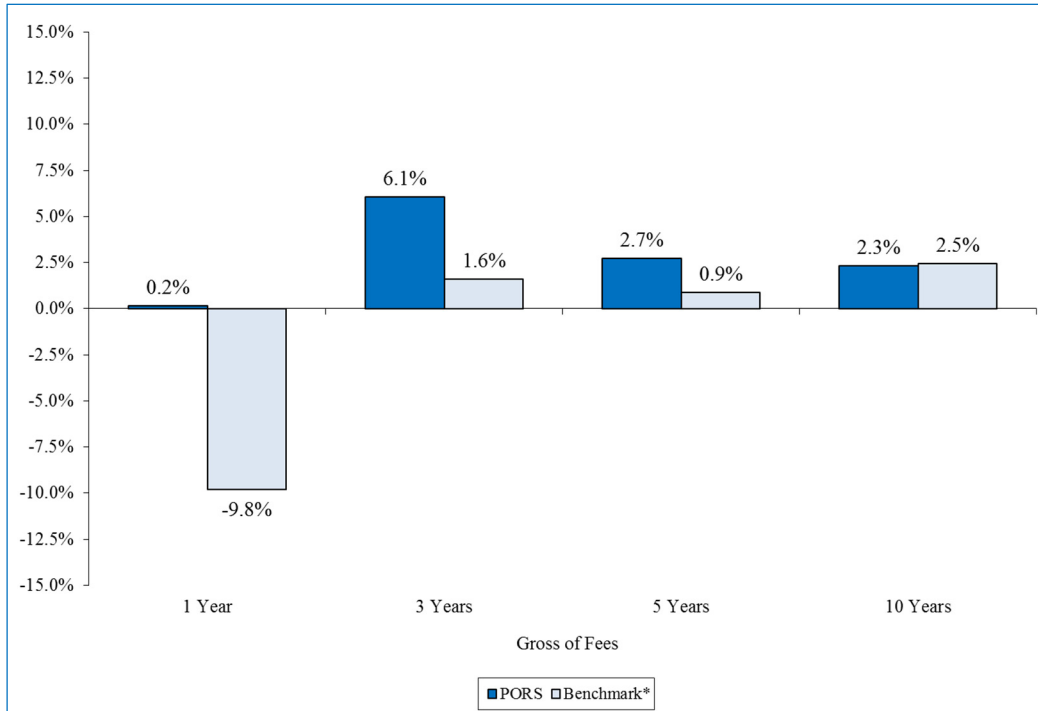
\*Current Benchmark: 70% S&P 500, 30% Russell 2000 (Benchmark has been revised through time)



**Investment Results**

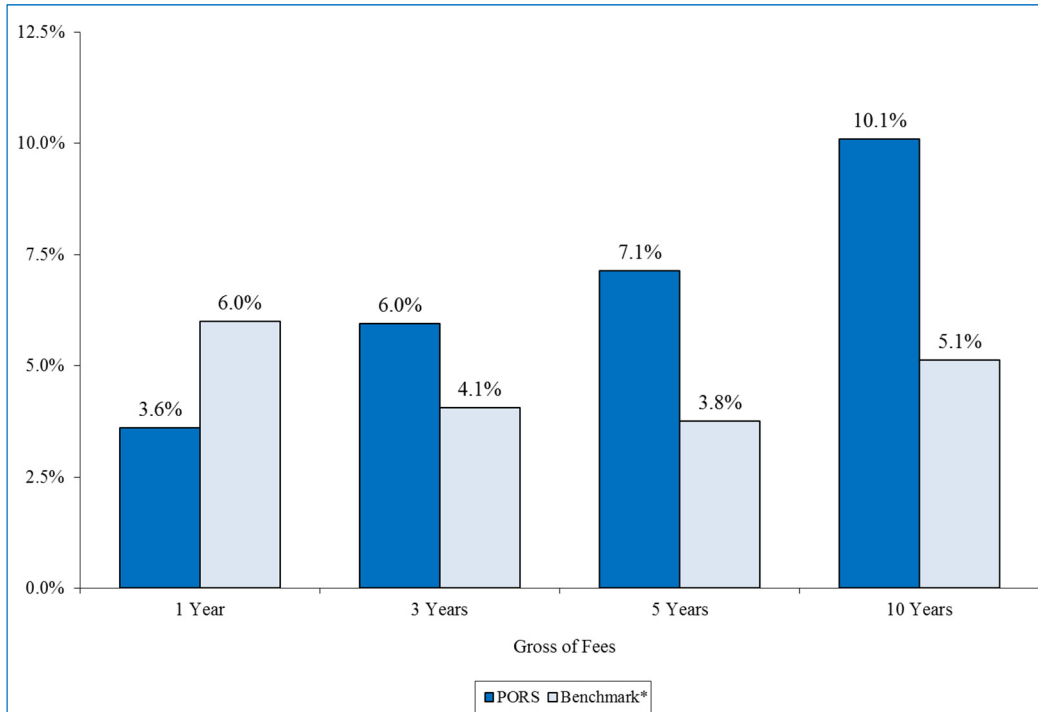
(Time weighted return, gross of fees)

**International Equity:**



\*Current Benchmark: MSCI All Country World ex U.S. (Benchmark has been revised through time)

**Fixed Income:**

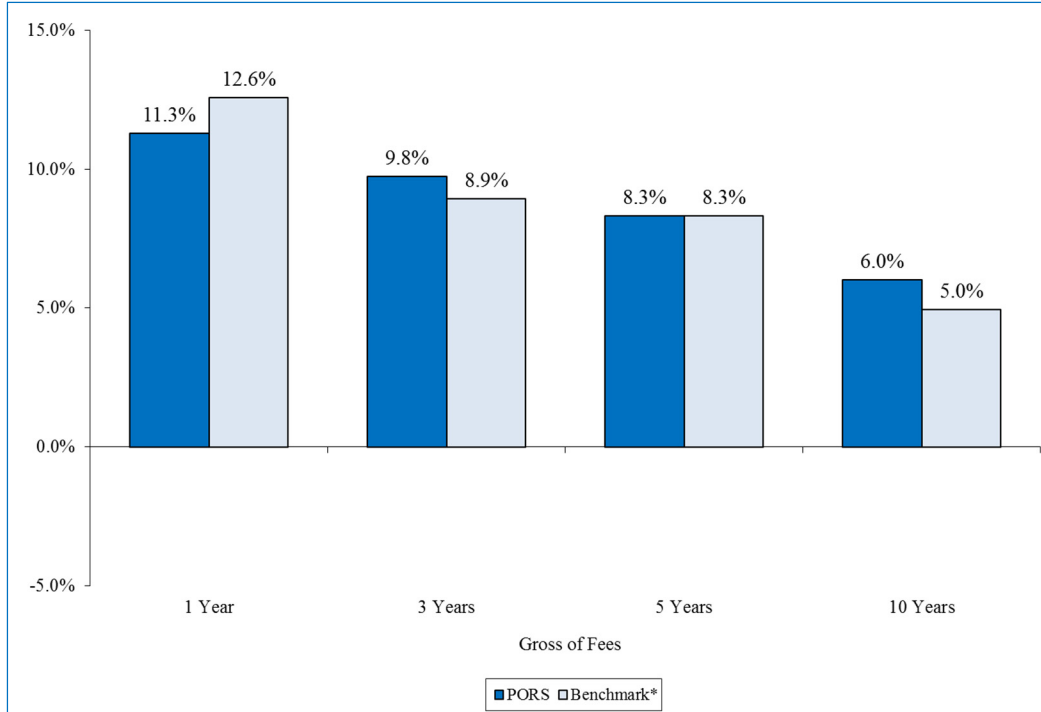


\*\*Current Benchmark: Barclays Aggregate (Benchmark has been revised through time)

**Investment Results**

(Time weighted return, gross of fees)

**Real Estate:**



\*Current Benchmark: FTSE EPRA/NAREIT Developed Index (Benchmark has been revised through time)

## Schedule of Ten Largest Equity &amp; Fixed Income Holdings\*

## Ten Largest Equity Holdings\*

No. Shares	Description	Cost	Fair Value	% of Total Portfolio
19,396	Simon Property Group Inc	\$3,696,720	\$4,206,992	0.33%
37,904	Nestle Sa	2,553,088	2,923,923	0.23%
61,805	Klepierre	2,687,060	2,736,191	0.22%
25,595	Reckitt Benckiser Group Plc	2,248,677	2,562,733	0.20%
3,700	Keyence Corp	1,850,300	2,493,596	0.20%
94,889	Taiwan Semiconductor Manufacturing Company	1,570,714	2,488,938	0.20%
69,502	HCP Inc	2,318,260	2,458,981	0.19%
126,400	Mitsubishi Estate Co Ltd	2,608,650	2,307,703	0.18%
17,615	Chubb Ltd	1,384,016	2,302,457	0.18%
26,560	CSL Ltd	1,911,140	2,218,536	0.17%
	<b>Total</b>	<b><u>\$22,828,625</u></b>	<b><u>\$26,700,050</u></b>	<b><u>2.10%</u></b>

## 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
14,009,148	U.S. Treas-CPI Inflation Index, 0.125%, 07/15/2024	\$13,710,648	\$14,149,940	1.11%
8,007,589	U.S. Treas-CPI Inflation Index, 1.250%, 07/15/2020	8,594,825	8,604,635	0.68%
7,765,520	U.S. Treas-CPI Inflation Index, 1.375%, 07/15/2018	8,168,856	8,144,400	0.64%
6,257,239	U.S. Treas-CPI Inflation Index, 1.375%, 02/15/2044	7,018,253	7,233,369	0.57%
6,956,285	U.S. Treas-CPI Inflation Index, 0.125%, 07/15/2022	7,091,404	7,113,011	0.56%
4,530,361	U.S. Treas-CPI Inflation Index, 3.625%, 04/15/2028	6,270,532	6,267,935	0.49%
6,121,055	Fnma Gtd Remic P/t 15-79 Za, 3.000%, 11/25/2045	5,840,069	6,043,869	0.48%
5,000,000	Puerto Rico Cmwlt, 8.000%, 07/01/2035	3,841,375	3,337,600	0.26%
2,625,340	FhImc Multiclass Mtg 4223 Sb, Var Rt, 07/15/2043	2,037,920	2,511,820	0.20%
2,694,500	Gnma Gtd Remic P/t 13-88 Lz, 2.500%, 06/16/2043	2,127,313	2,480,530	0.20%
	<b>Total</b>	<b><u>\$64,701,195</u></b>	<b><u>\$65,887,109</u></b>	<b><u>5.19%</u></b>

\*Full disclosure of holdings is available upon request.

Schedule of Brokerage Commissions					
Broker Name	Year Ended June 30, 2016				
	Base Volume	Total Shares	Base Commission	Commission Percentage	
Citigroup Gbl Mkts/Salomon, New York	\$2,808,921	788,521	\$4,413	0.16%	
D Carnegie Ab, Stockholm	1,112,408	41,713	1,671	0.15%	
Kas Bank Nv, Amsterdam	1,191,311	163,951	1,785	0.15%	
Green Street Advisors (UK) Ltd, London	1,272,846	110,948	1,903	0.15%	
Carnegie Bank As, Copenhagen	2,903,040	45,325	4,294	0.15%	
Stifel Nicolaus	712,726	38,885	1,035	0.15%	
Clas Australia Pty Ltd, Sydney	543,362	93,566	783	0.14%	
Banque Paribas, Paris	427,795	44,478	607	0.14%	
Macquarie Bank Ltd, Hong Kong	2,448,942	1,150,595	3,396	0.14%	
Nesbitt Burns, Toronto	526,453	40,396	677	0.13%	
Credit Lyonnais Secs, Singapore	2,288,189	71,654	2,933	0.13%	
Berenberg Gossler & Cie, Hamburg	598,505	23,550	767	0.13%	
Parel, Paris	611,808	22,173	727	0.12%	
Daiwa Secs Amer Inc, New York	7,330,205	380,011	8,530	0.12%	
Instinet Europe Limited, London	1,440,501	21,621	1,672	0.12%	
Macquarie Bank Limited, Sydney	451,704	89,906	519	0.11%	
Merrill Lynch Intl London Equities	5,286,578	1,225,765	5,924	0.11%	
Deutsche Bk Secs Inc, Ny	3,550,094	271,734	3,926	0.11%	
J P Morgan Secs Ltd, London	6,048,665	257,806	6,340	0.10%	
Wells Fargo Securities Llc, Charlotte	405,138	16,796	407	0.10%	
Societe Generale London Branch, London	1,158,831	47,358	1,158	0.10%	
UBS Warburg Asia Ltd, Hong Kong	4,116,901	974,080	4,068	0.10%	
Morgan Stanley & Co Inc, Ny	7,812,708	693,161	7,639	0.10%	
Credit Lyonnais Secs (Asia), Hong Kong	1,117,229	156,551	1,087	0.10%	
BNP Paribas Sec Svcs, London	485,189	214,930	470	0.10%	
SMBC Securities, Inc New York	1,335,990	16,625	1,288	0.10%	
UBS Equities, London	712,133	47,872	678	0.10%	
Mizuho Securities Usa Inc. New York	1,647,176	54,045	1,561	0.09%	
RBC Dominion Secs Inc, Toronto	1,055,130	40,288	994	0.09%	
Merrill Lynch Gilts Ltd, London	3,436,508	110,752	3,198	0.09%	
Credit Suisse, New York	2,837,455	270,859	2,593	0.09%	
Citigroup Gbl Mkts Inc, New York	5,213,256	153,002	4,661	0.09%	
Goldman Sachs & Co, Ny	37,501,503	301,664	32,646	0.09%	
Barclays Capital Inc, New York	1,460,781	37,080	1,166	0.08%	
Barclays Capital Le, Jersey City	1,288,708	39,726	1,020	0.08%	
Cantor Fitzgerald Europe, London	541,614	122,598	418	0.08%	
J.P. Morgan Clearing Corp, New York	20,603,028	1,227,916	13,081	0.06%	
UBS Securities Llc, Stamford	1,378,969	31,067	867	0.06%	
BMO Capital Markets Corp, New York	496,104	13,248	279	0.06%	
Goldman Sachs Execution & Clearing , Ny	1,456,134	40,444	809	0.06%	
National Finl Svcs Corp, New York	3,682,742	72,903	2,044	0.06%	
Goldman Sachs Intl, London	519,932	37,843	274	0.05%	
RBC Capital Markets Llc, New York	1,904,397	45,978	905	0.05%	
Merrill Lynch Pierce Fenner Smith Inc Ny	9,448,740	210,789	4,404	0.05%	
ITG Hong Kong Limited, Hong Kong	623,424	178,361	249	0.04%	
Bloomberg Tradebook, London	1,460,674	215,259	583	0.04%	
Bernstein Sanford C & Co, New York	5,820,739	138,558	2,127	0.04%	
BNY Convergenx / LJR, Houston	2,276,898	36,613	549	0.02%	
Converge Llc, New York	3,215,559	47,025	705	0.02%	
State Street Global Markets Llc, Boston	805,223	31,444	148	0.02%	
Other Brokers	9,780,083	1,349,769	10,410	0.11%	
<b>Total</b>	<b>\$177,152,949</b>	<b>11,857,202</b>	<b>\$154,388</b>	<b>0.09%</b>	

<b>Investment Summary</b>				
<b>(Based on Capital Allocation)</b>				
	<b>As of June 30, 2015</b>		<b>As of June 30, 2016</b>	
	<b>Fair Value</b>	<b>% Fair Value</b>	<b>Fair Value</b>	<b>% Fair Value</b>
U.S. Equities	\$146,520,770	11.40%	\$122,026,678	9.61%
International Equities	138,075,472	10.80%	144,470,617	11.38%
Fixed Income	383,258,764	29.90%	323,798,540	25.48%
Real Estate	63,109,181	5.00%	69,810,332	5.50%
Alternatives	164,991,578	12.90%	201,974,313	15.92%
Risk Parity	367,788,458	28.70%	365,133,220	28.75%
Short-term	<u>16,981,958</u>	<u>1.30%</u>	<u>42,679,787</u>	<u>3.36%</u>
<b>Total</b>	<b><u>\$1,280,726,181</u></b>	<b><u>100.00%</u></b>	<b><u>\$1,269,893,487</u></b>	<b><u>100.00%</u></b>

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*Classic Values, Innovative Advice.*

November 1, 2016

Fairfax County Police Officers  
Retirement System  
10680 Main Street, Suite 280  
Fairfax, Virginia 22030-3812

Dear Members of the Board:

At your request, we have performed an actuarial valuation of the Fairfax County Police Officers Retirement System as of June 30, 2016. 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) 2016 contribution was developed in the 2014 valuation report and was based on a corridor level of 95%.

#### ***Assumptions***

The actuarial assumptions used in performing the June 30, 2016 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 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 2015 actuarial valuation, Cheiron prepared the Analysis of Financial Experience, Schedule of Retirants 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, 2016.

**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 Police Officers 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 Police Officers 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 Police Officers 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. Milligan, FSA  
Associate Actuary





### Summary of Valuation Results

The Actuarially Determined Contribution rate for Fiscal Year (FY) 2016 was developed in the 2014 valuation report and was based on a corridor floor of 95%. 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 2016 valuation. Prior to performing the 2016 valuation, a full experience study was performed using data from 2010-2015. As a result of this study many of the actuarial assumptions have been changed since the 2015 financial reporting. The impact of the changes can be found in the Schedule of Changes in the Net Pension Liability, as disclosed in the Financial Section. For more detail on the changes and analysis we would refer you to the experience study report.

The System historically used a July 1 date for both funding calculations and for accounting disclosures. While the System and the County disclosed liabilities under the Governmental Accounting Standards Board (GASB) Statements Numbers 25 and 27, this was an appropriate technique because this statement allowed for disclosure of liability and assets as of the prior year. Once GASB's Statements Numbers 67 and 68 required the System to disclose their best estimate of the liability as of the plan year-end, along with assets at the same date, the disclosure of year-end liabilities was moved to using rollforward techniques. This has led to a situation where the June 30, 2015 TPL was estimated while the July 1, 2015 actuarial liability for funding purposes was calculated using more recent data. The two liability measures ceased to match one another.

In order to address this discrepancy, starting with 2016 the Board has elected to use a June 30 valuation date based on collecting data and valuing liabilities figures as of December 31 and adjusting the resulting liabilities for a six month period to the following June 30. These June 30 liability figures are then be compared to the June 30 assets for purposes of both the funding and financial accounting disclosures. The same liability results will now be used for both the actuarial funding valuation and financial reports removing a source of confusion.

### Summary of Actuarial Assumptions and Methods

#### **Funding Method**

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) 2016 contribution was based on a corridor level of 95%.

#### **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**

The funding liabilities are calculated as of December 31 of the prior year and adjusted using standard actuarial techniques to the June 30 valuation date.

**Long Term Assumptions Used to Determine System Costs and Liabilities**

**Demographic Assumptions  
Healthy Mortality**

Annual Deaths Per 10,000 Members Mortality Projected to 2016		
Age	Male	Female
20	6	2
25	6	2
30	5	2
35	6	3
40	8	5
45	13	8
50	52	29
55	67	38
60	90	59
65	139	98
70	223	156
75	364	251
80	605	414
85	1,032	726
90	1,768	1,281
95	2,720	2,072
100	3,788	3,022

\*Post-retirement mortality shown

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. 20% of deaths are assumed to be service-connected.

**Disabled Mortality**

Annual Deaths Per 1,000 Members Mortality Projected to 2016		
Age	Male	Female
45	19	11
50	22	14
55	23	15
60	25	19
65	31	25
70	42	34
75	58	50
80	82	74

100% and 115% of the RP-2014 Disabled Annuitant Mortality Table for males and females respectively, projected using the RPEC-2015 model, with an ultimate rate of 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.

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

Annual Terminations Per 1,000 Members	
Years of Service	Terminations
0	70
1	50
2	40
3	33
4	28
5	23
6	20
7	15
8	14
9	11
10	8
11	7
12	6
13	6
14	5
15	5
16	4
17	4
18	3
19	3
20	2
21	2
22	1
23	1
24	1
25 or more	0

It is assumed that members who terminated before normal or early retirement age elect to receive a refund of contributions instead of vested benefits.

**Disability**

Annual Disabilities Per 1,000 Members*	
Age	Male and Female
20	1
25	1
30	1
35	1
40	2
45	3
50	5
55	8
60	8

\* 70% of disabilities are assumed to be service-connected. Of these, 100% are assumed to receive Workers' Compensation benefits.

**Retirement/DROP**

Years of Service	Retirement/DROP*
25	40%
26	40
27	40
28	40
29	40
30	40
31	40
32	40
33	40
34	40
35+	100

\*70% of those who leave under this decrement are assumed to DROP, with the other 30% taking immediate retirement.

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

Years of Service	Merit/Seniority Increase*
0	7.00%
1	6.00
2	5.00
3	4.00
4	3.00
5	2.00
6+	1.00

**Family Composition**

For purposes of valuing the pre-retirement death benefit, an assumption is made concerning how many employees are married. The assumption used in this valuation is that 80% of active employees are married at death and that the female spouse is five years younger than the male spouse is.

**Sick Leave Credit**

The unused sick leave balance as reported for each active member is used as of the valuation date. Future sick leave accruals are assumed to accrue at 100% of each participant's annual average, but 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:	0.40% of payroll.

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

**Changes since Last Valuation**

All assumptions have been updated in accordance with the 2015 experience study. Please see the experience study report for details on the analysis and the assumptions before and after adoption.

**Analysis of Financial Experience**  
**Gain and Loss in Accrued Liability during Years Ended June 30<sup>1</sup>**  
**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
2010	(\$31,755,165.0)	\$3,313,576.0	(\$28,441,589.0)	\$0.0	(\$28,441,589.0)
2011	26,496,140.0	(12,495,024.0)	14,001,116	(5,795,987.0)	8,205,129
2012	(8,996,470.0)	1,919,058.0	(7,077,412)	0.0	(7,077,412)
2013	523,678.0	17,282,544.0	17,806,222	0.0	17,806,222
2014	31,937,393.0	11,575,441.0	43,512,834	(3,202,649.0)	40,310,185
2015	(4,528,707.0)	19,857,201.0	15,328,494	0.0	15,328,494
2016	(31,414,324.0)	10,963,818.0	(20,450,506)	(9,895,400.0)	(30,345,906)

<sup>1</sup> Schedule comes from the Actuarial Valuation as of June 30, 2016

**Schedule of Retirees and Beneficiaries**  
**Added To and Removed From Rolls**

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		
2010	48	\$3,725,160	12	\$574,000	824	\$45,078,724	7.52%	\$54,707
2011	34	3,623,899	8	306,852	850	48,395,771	7.36%	56,936
2012	37	3,304,118	11	433,632	876	51,266,257	5.93%	58,523
2013	51	3,747,038	20	820,110	907	54,193,185	5.71%	59,750
2014	71	5,441,901	12	671,616	966	58,963,469	8.80%	61,039
2015	62	4,149,523	16	534,130	1,012	62,578,862	6.15%	61,837
2016	35	1,828,843	8	288,260	1,039	64,119,445	2.46%	61,713

**Solvency Test<sup>2</sup>**

Aggregate Accrued Liabilities For							
Valuation Date June 30	(1) Active Member Contribution	(2) Retirees, Vested Terms Beneficiaries & Drop	(3) Active Members (County Financed Portion)	Reported Assets *	Portion of Accrued Liabilities by Reported Assets		
					(1)	(2)	(3)
2010	\$100,709,756	\$695,041,990	\$339,263,552	\$899,543,387	100%	100%	31%
2011	104,188,027	732,172,476	383,248,604	982,153,681	100%	100%	38%
2012	107,411,328	798,639,061	380,790,276	1,035,444,171	100%	100%	34%
2013	107,211,514	859,305,980	374,612,001	1,101,474,728	100%	100%	36%
2014	106,872,811	913,113,803	421,557,979	1,224,882,430	100%	100%	49%
2015	105,765,035	961,692,517	423,602,482	1,289,972,504	100%	100%	53%
2016	110,961,165	995,104,603	454,451,944	1,333,218,360	100%	100%	50%

<sup>2</sup> Schedule 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.

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	Contributions % of Covered Payroll	Net Investments Income (loss)	Total Additions
2007	\$11,796,129	\$19,222,753	19.55%	\$138,659,208	\$169,678,090
2008	11,175,450	21,447,907	21.00%	-55,802,375	-23,179,018
2009	11,246,986	23,508,402	22.34%	-151,727,985	-116,972,297
2010	10,389,241	23,766,626	22.84%	143,107,767	177,263,634
2011	10,142,459	29,174,611	28.31%	210,054,206	249,371,276
2012	10,109,068	31,700,690	31.30%	-6,731,294	35,078,464
2013	10,258,858	34,011,347	33.15%	96,783,078	141,053,283
2014	10,091,331	34,178,960	33.87%	176,683,610	220,953,901
2015	8,889,931	37,867,181	36.82%	41,601,153	88,358,265
2016	9,324,066	40,646,884	38.98	10,764,028	60,734,978

**Schedule of Deductions by Type**

Fiscal Year	Benefit Payments	Refunds of Contributions	Administrative Expenses	Total Deductions
2007	\$37,310,748	\$435,566	\$429,093	\$38,175,407
2008	39,533,485	607,913	445,751	40,587,149
2009	43,467,322	761,803	337,334	44,566,459
2010	47,096,822	406,863	349,179	47,852,864
2011	49,429,119	466,363	362,889	50,258,371
2012	52,043,157	357,901	372,137	52,773,195
2013	55,266,464	300,847	415,119	55,982,430
2014	61,715,421	572,284	431,064	62,718,769
2015	67,276,713	480,447	443,230	68,200,390
2016	70,352,623	397,188	510,544	71,260,355

**Schedule of Benefit Payments by Type**

Fiscal Year	Service Annuity	Service - Connected Disability	Ordinary Disability	Survivor Benefit	Total
2007	\$34,077,659	\$1,194,359	\$124,092	\$1,914,638	\$37,310,748
2008	36,099,484	1,228,039	94,230	2,111,932	39,533,685
2009	39,708,613	1,241,328	90,442	2,426,939	43,467,322
2010	43,069,896	1,218,305	90,804	2,717,817	47,096,822
2011	45,302,801	1,173,023	109,018	2,844,277	49,429,119
2012	47,757,201	1,180,749	149,163	2,956,044	52,043,157
2013	50,784,313	1,212,826	147,739	3,121,586	55,266,464
2014	56,871,422	1,179,687	130,181	3,534,131	61,715,421
2015	62,221,104	1,182,810	134,897	3,737,902	67,276,713
2016	65,061,094	1,262,170	135,167	3,894,192	70,352,623

Schedule of Retired Members by Benefit Type

Fiscal Year	Service Annuity	Service-Connected Disability	Ordinary Disability	Survivor Benefit	Total
2007	618	32	7	86	743
2008	634	30	6	87	757
2009	660	30	6	92	788
2010	691	30	6	97	824
2011	716	30	7	97	850
2012	735	30	7	104	876
2013	764	30	6	107	907
2014	813	29	6	118	966
2015	862	29	6	115	1012
2016	880	30	6	123	1039

Schedule of Average Monthly Benefit Amounts

Fiscal Year	Service Annuity	Service-Connected Disability	Ordinary Disability	Survivor Benefit	Average
2007	\$4,511	\$3,266	\$1,401	\$2,013	\$4,139
2008	4,752	3,453	1,256	2,208	4,381
2009	4,805	3,439	1,261	2,301	4,434
2010	4,956	3,360	1,290	2,305	4,559
2011	5,154	3,284	1,776	2,392	4,745
2012	5,320	3,370	1,825	2,385	4,877
2013	5,427	3,334	1,844	2,418	4,979
2014	5,551	3,385	1,874	2,469	5,087
2015	5,592	3,236	1,877	2,515	5,153
2016	5,599	3,556	1,877	2,424	5,143

## Schedule of Average Benefit Payments

Years of Credited Service*	2 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30+
<b><u>Period 7/1/2006 to 6/30/2007</u></b>							
Average Monthly Benefit	-	-	-	-	\$4,615	\$5,536	\$5,426
Average of Final Monthly Salaries	-	-	-	-	6,524	6,921	6,170
Number of Retirees	-	-	-	-	7	29	3
<b><u>Period 7/1/2007 to 6/30/2008</u></b>							
Average Monthly Benefit	-	-	\$2,178	\$3,084	4,964	5,043	5,388
Average of Final Monthly Salaries	-	-	5,725	5,696	7,390	6,770	5,959
Number of Retirees	-	-	1	1	11	13	1
<b><u>Period 7/1/2008 to 6/30/2009</u></b>							
Average Monthly Benefit	-	\$4,163	-	1,559	4,494	5,823	-
Average of Final Monthly Salaries	-	5,810	-	3,929	6,992	7,269	-
Number of Retirees	-	1	-	1	12	13	-
<b><u>Period 7/1/2009 to 6/30/2010</u></b>							
Average Monthly Benefit	-	-	3,069	-	4,278	5,307	-
Average of Final Monthly Salaries	-	-	5,936	-	7,866	7,182	-
Number of Retirees	-	-	2	-	4	32	-
<b><u>Period 7/1/2010 to 6/30/2011</u></b>							
Average Monthly Benefit	-	4,163	-	4,580	4,169	6,193	6,504
Average of Final Monthly Salaries	-	6,062	-	6,669	7,099	8,246	7,576
Number of Retirees	-	1	-	1	8	20	2
<b><u>Period 7/1/2011 to 6/30/2012</u></b>							
Average Monthly Benefit	-	600	-	-	4,565	5,800	-
Average of Final Monthly Salaries	-	3,711	-	-	7,437	7,661	-
Number of Retirees	-	1	-	-	4	17	-
<b><u>Period 7/1/2012 to 6/30/2013</u></b>							
Average Monthly Benefit	-	-	4,339	-	4,070	5,702	7,525
Average of Final Monthly Salaries	-	-	6,319	-	7,416	8,056	8,661
Number of Retirees	-	-	1	-	4	27	3
<b><u>Period 7/1/2013 to 6/30/2014</u></b>							
Average Monthly Benefit	-	-	-	3,147	4,041	5,795	6,965
Average of Final Monthly Salaries	-	-	-	6,728	7,192	8,016	,837
Number of Retirees	-	-	-	2	9	37	7
<b><u>Period 7/1/2014 to 6/30/2015</u></b>							
Average Monthly Benefit	-	997	3,202	3,758	4,059	5,624	8,047
Average of Final Monthly Salaries	-	5,519	6,235	6,925	7,507	7,840	8,698
Number of Retirees	-	1	2	2	3	32	5
<b><u>Period 7/1/2015 to 12/31/2015</u></b>							
Average Monthly Benefit	-	3,726	-	3,113	3,590	5,792	8,409
Average of Final Monthly Salaries	-	5,589	-	6,492	6,977	7,982	9,192
Number of Retirees	-	1	-	1	1	15	5

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

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	56	31	4	0	0	0	0	0	0	91
25 to 29	38	95	45	2	0	0	0	0	0	180
30 to 34	6	42	106	56	0	0	0	0	0	210
35 to 39	7	15	39	116	65	0	0	0	0	242
40 to 44	2	8	16	61	131	53	0	0	0	271
45 to 49	1	2	6	37	57	84	14	0	0	201
50 to 54	0	1	5	17	17	30	29	2	101	
55 to 59	0	2	3	3	2	6	1	5	22	
60 to 64	0	0	0	0	1	0	0	0	1	
65 & up	0	0	0	0	0	0	0	0	0	
<b>Total</b>	<b>110</b>	<b>196</b>	<b>224</b>	<b>292</b>	<b>273</b>	<b>173</b>	<b>44</b>	<b>7</b>	<b>1,319</b>	

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	\$3,232,205	\$1,707,198	\$243,844	\$0	\$0	\$0	\$0	\$0	\$5,183,247
25 to 29	2,278,450	5,699,364	3,018,252	131,178	0	0	0	0	11,127,244
30 to 34	360,694	2,571,901	7,712,668	4,498,591	0	0	0	0	15,143,854
35 to 39	429,831	963,049	2,923,355	9,508,739	5,775,225	0	0	0	19,600,199
40 to 44	119,486	550,714	1,265,301	4,969,263	11,483,896	5,291,045	0	0	23,679,705
45 to 49	68,656	135,865	454,892	3,068,100	4,934,076	8,349,450	1,610,775	0	18,621,814
50 to 54	0	70,206	360,920	1,359,334	1,416,111	2,821,881	3,165,782	197,907	9,392,141
55 to 59	0	143,846	232,011	245,235	172,368	607,625	100,817	771,499	2,273,401
60 to 64	0	0	0	0	81,499	0	0	0	81,499
65 & up	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>\$6,489,322</b>	<b>\$11,842,143</b>	<b>\$16,211,243</b>	<b>\$23,780,440</b>	<b>\$23,863,175</b>	<b>\$17,070,001</b>	<b>\$4,877,374</b>	<b>\$969,406</b>	<b>\$105,103,104</b>



# FAIRFAX COUNTY POLICE Officers RETIREMENT SYSTEM



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FAIRFAX COUNTY  
**Retirement** SYSTEMS  
EMPLOYEES' POLICE Officers UNIFORMED

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