

2016 - 2015

**District of Columbia Retirement Board**  
a Pension Trust Fund of the District of Columbia



**Comprehensive Annual Financial Report**  
For the fiscal years ended September 30, 2016 and 2015



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## **Comprehensive Annual Financial Report**

For the fiscal years ended September 30, 2016 and 2015

### **District of Columbia Retirement Board**

a Pension Trust Fund of the District of Columbia

Prepared by the District of Columbia Retirement Board's Finance Department

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## Letter of Transmittal



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March 31, 2017

Board of Trustees  
District of Columbia Retirement Board  
900 7th Street NW  
Washington, D.C. 20001

Dear Board Members:

I am happy to submit the Comprehensive Annual Financial Report (CAFR) of the District of Columbia Retirement Board (DCRB). This CAFR is a presentation of the financial results for DCRB for the fiscal years ended September 30, 2016 and 2015. These financial results provide useful information related to DCRB's administration of the assets that are held in trust for the members of the District of Columbia Police Officers and Firefighters' Retirement Plan and the District of Columbia Teachers' Retirement Plan (the Plans).

DCRB pays benefits and provides a range of retirement administration services to members from the date of their initial participation in the Plans as well as throughout their lifetimes and the lifetimes of their survivors. These Plans were adopted by the District of Columbia (DC or District) on July 1, 1997. DCRB also serves as the third-party administrator for benefits under the frozen federal plans, for which the U.S. Department of Treasury (Treasury) is financially responsible. As of September 30, 2016, there were 26,270 members in the frozen federal and active District Replacement Plans, of which 18,854 are members of the Replacement Plans funded by the District Government.

DCRB has exclusive authority and discretion to manage the assets of the District of Columbia Teachers' Retirement Fund and the District of Columbia Police Officers and Fire Fighters' Retirement Fund (collectively referred to as the Fund), that are held in trust for the sole benefit of Plan participants, and their eligible survivors and beneficiaries. The Fund assets can be used only to pay benefits to Plan members, as well as associated expenses necessary to administer the retirement program. As of September 30, 2016, the market value of the Fund was valued at approximately \$6.8 billion, an increase of approximately \$645 million in total asset value over September 30, 2015.

During the fiscal year ended September 30, 2016, we continued to fulfill our core missions: A) investing and managing the assets of the Fund, and B) administering retirement benefits for Plan members. Using DCRB's strategic goals as guides, I will summarize our accomplishments for FY 2016.

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Jan Adams • Jeffrey Barnette • Lyle M. Blanchard • Joseph W. Clark • Mary A. Collins • Gary W. Hankins  
Darrick O. Ross • Nathan A. Saunders • Edward C. Smith • Thomas N. Tippet • Michael J. Warren • Lenda P. Washington

Joseph W. Clark  
Chairman

Sheila Morgan-Johnson  
Interim Executive Director

## Letter of Transmittal

### THE INVESTMENT OF FUND ASSETS

In its role of investing and managing the assets of the Fund, DCRB is guided by two strategic goals: 1) Prudently invest the Fund assets to provide long-term sustainable risk-adjusted returns, and 2) Safeguard the integrity of the Fund.

#### 1. Prudently invest Fund assets to provide long-term sustainable risk-adjusted returns.

DCRB's ongoing responsibility is to prudently manage the Fund assets, with the goal of earning a return that meets or exceeds our actuarial investment return assumption. The Fund earned a net return of 9.3 percent for FY 2016. Because the Fund has a long-term investment horizon, the Board has established an actuarial return target of 6.5 percent to sustain the Fund's health over the long term. I am pleased to report that, since inception in October 1982, the Fund has generated an annualized gross rate of return of 8.7 percent, surpassing the actuarial return target by 2.2 percent per year.

In building a solid foundation for achieving long-term, sustainable risk-adjusted returns, the Board routinely reviews investment manager performance against benchmark returns, and rebalances the portfolio to maintain compliance with asset allocation targets and ranges.

The following are some of the investment activities that were completed during FY 2016:

- An asset allocation study was conducted to ensure the continued alignment of the Board's asset allocation policy with the long-term liability structure.
- We systematically reviewed the investment performance and operational processes of investment service providers.
- Trustees and Staff were provided with education on investment and regulatory matters, including fiduciary responsibilities.

In the upcoming fiscal year, we will implement the new asset allocation policy, complete an actuarial experience study to determine actual versus projected costs, and conduct a projection study that will serve as a planning tool to guide investment decisions and assist in estimating our liquidity needs in the near term.

#### 2. Safeguard the integrity of the Fund.

The Board's independent actuary conducts an actuarial valuation each year. In addition, DCRB's financial statements are audited annually. I am pleased to report that DCRB received an unmodified, or "clean," opinion from its independent audit firm for FY 2016. You will find the opinion letter in the Financial Section of this document. DCRB will strive to obtain clean audit opinions annually and will continue to report our financial activities according to accounting principles generally accepted in the U.S.

As business continuity is critical to our agency, DCRB recently completed projects focused on updating our disaster-recovery and continuity-of-operations plans. In addition, during FY 2016, we developed processes and implemented security requirements to ensure compliance with the Federal Information Security Management Act (FISMA) for data management. Also, we have implemented security measures to mitigate the risk of data loss and maintain the confidentiality of personally identifiable information (PII). Beyond these efforts, we conduct annual training on privacy awareness and cybersecurity practices.

## Letter of Transmittal

### THE ADMINISTRATION OF RETIREMENT BENEFITS FOR MEMBERS OF THE PLANS

In administering benefits, DCRB is guided by three strategic goals: 1) Expand and improve benefits administration capabilities to assure that benefits are paid to our members accurately and timely; 2) Foster member and stakeholder trust through enhanced communications and collaborative outreach; and 3) Refine DCRB's organizational structure to meet changing agency responsibilities.

#### **1. Expand and improve benefits administration capabilities to ensure that benefits are paid to our members accurately and timely.**

Four years ago, DCRB initiated a Retirement Modernization Program intended to improve benefits administration by enhancing the quality of data used to calculate benefits and upgrading information technology through the acquisition of a Pension Information Management System (PIMS) that will be owned and maintained by DCRB. Projects completed through FY 2016 were focused on collaborating with other District agencies to cleanse and enhance existing data, and to prepare for a PIMS acquisition.

The PIMS will electronically house all District pension-related information in one place. In addition, that system will be programmed to allow DCRB to provide a full range of retirement services for Plan members, including the ability to administer member benefits.

During FY 2016, DCRB worked with the District's Office of the Chief Technology Officer (OCTO) and Treasury to begin the automated transmission of data directly to the System to Administer Retirement (STAR) system, a pension/payroll system developed, maintained, operated, and owned by Treasury. This process eliminates the manual entry of data to calculate retirement benefits. It will serve to decrease errors, reduce processing time, maintain data quality and allow for the eventual installation of the PIMS in an existing environment of automated rather than manual processes. In addition, a Data Management Project, which was implemented in FY 2016, serves as a central repository for member data, facilitates our ability to assess the accuracy of data received from other agencies, and enables seamless communications among the various systems.

Further, DCRB plans to begin issuing estimated annual benefit statements to active members. In FY 2016, DCRB established a pilot project of approximately 200 active firefighters to review and comment on a preliminary annual benefit statement. These statements will provide an estimated accrued benefit as of a specific date in 2017, as well as the benefit amount projected to the member's expected regular retirement date.

#### **2. Foster member and stakeholder trust through enhanced communications and collaborative outreach.**

DCRB began issuing a quarterly newsletter cycle (instead of the previous semi-annual cycle) during FY 2016 by adding a newsletter exclusively for teachers and one exclusively for police officers and firefighters, which focus on information pertinent to the Plans and the retirement process.

#### **3. Refine DCRB's organizational structure to meet agency responsibilities and needs.**

Over the next few years, DCRB will be acquiring and implementing a PIMS that will be used to calculate pension benefits and provide Plan members with a wide range of services, many of which are not currently possible. It is important to point out that, unlike other organizations, which periodically upgrade an existing system, DCRB will be starting from the ground floor, an undertaking that will require considerable time, cost and effort. In addition, as the new system is developed, we will need to identify changes to our business processes, most of which were put into place years ago to accommodate the current paper-based environment.

## Letter of Transmittal

### Management Responsibility for Financial Reporting

The responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with DCRB management. We believe the data, as presented, is accurate in all material respects, that it is presented in a manner designed to fairly set forth the Plan Net Position and the Changes in Net Position and that all disclosures necessary to enable the reader to gain the maximum understanding of the financial activities of the Fund have been included.

The accounting records of DCRB are maintained by DCRB staff. Pension payment information is contained within STAR, which is managed by Treasury. DCRB's employee payroll is processed through the District of Columbia's PeopleSoft System.

The independent auditors' report was issued by the public accounting firm of CliftonLarsonAllen LLP, whose selection was approved by DCRB's Board of Trustees. This report on the Plans is presented in the Financial Section of the CAFR.

The actuarial certification and related schedules included in the CAFR were provided by Cavanaugh Macdonald Consulting, LLC, whose selection was approved by DCRB's Board of Trustees. The valuation results are presented in the Actuarial Section of this CAFR.

The Fund's custodial bank as of September 30, 2016, Northern Trust, records and reports all investment and cash management transactions, and the Board exercises close review and controls over those records and transactions.

The Management's Discussion and Analysis area of the Financial Section provides a narrative introduction and overview of DCRB's financial statements. It serves to supplement the Introductory Section of the CAFR, as well as financial statements, notes and supplementary information within the Financial Section.

Additional disclosures that are specifically required by statute are also included in the report. DCRB management is responsible for maintaining internal accounting controls to provide reasonable assurance that transactions are properly authorized and recorded on an accrual basis in accordance with U.S. Generally Accepted Accounting Principles (GAAP) and that the financial statements conform with Governmental Accounting Standards Board (GASB) and American Institute of Certified Public Accountants (AICPA) reporting standards and GFOA guidelines. Consideration is given to the adequacy of internal accounting controls for systems under the control of DCRB and systems that are shared with other governmental offices or service providers. DCRB requires that its service providers undergo an annual service organization control report (SOC 1 report) review by independent public accountants and that government offices whose systems are used by DCRB are subjected to an annual audit. These controls are designed to provide reasonable assurance regarding the safekeeping of assets and the reliability of financial records.

We believe the internal controls in effect during the fiscal years ended September 30, 2016 and 2015 adequately safeguarded the Fund's assets and provided reasonable assurance regarding the proper recording of financial transactions. 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 judgment by management.

## Letter of Transmittal

### Awards

GFOA Awarded the Certificate of Achievement for Excellence in Financial Reporting to DCRB for its CAFR for the fiscal years ended September 30, 2015 and 2014. This was the eighth consecutive year we received this award. In order to be awarded a Certificate of Achievement, DCRB must publish an easily readable and efficiently organized comprehensive annual financial report. This report must satisfy both GAAP and other applicable regulatory requirements. A Certificate of Achievement is valid for a period of one year. We believe that our CAFR continues to meet the Certificate of Achievement Program's requirements and we are submitting it to GFOA to determine its eligibility for continuing certification.

We were also among the public retirement systems that received the Public Pension Coordinating Council's (PPCC) Public Pension Standards 2015 Award in recognition of meeting professional standards for plan design and administration. The PPCC is a national confederation of state retirement associations whose standards are widely recognized benchmarks for public pension systems in the areas of plan design, funding, actuarial and financial audits and member communications.

### Conclusion

In summary, I am pleased to report that the Fund is in excellent shape. It is in sound financial condition, and we pay members accurately and timely. Further, the Board's trustees are engaged and committed to its mission, and we have a knowledgeable and experienced senior team managing the Agency's strategic initiatives. Together, we continue to move forward in creating a comprehensive retirement administration system that will be capable of serving the needs of Plan participants in the 21st century.

I would like to express my appreciation to the U.S. Department of Treasury's Office of D.C. Pensions, the District of Columbia City Council, the D.C. Office of Financial and Operations Systems, the D.C. Office of Budget and Planning, all other D.C. Government Offices that support the Board, and DCRB's trustees, staff, consultants and service providers for their tireless efforts to assure the financial soundness and successful operation of the District of Columbia Retirement Board.

If you have any questions regarding this CAFR of the District of Columbia Retirement Board for the fiscal years ended September 30, 2016 and 2015, please direct them to my office at any time.

Respectfully submitted,



Sheila Morgan-Johnson,  
Interim Executive Director  
District of Columbia Retirement Board

## About DCRB

### History

DCRB is an independent agency of the District of Columbia government that was created by Congress in 1979 under the Retirement Reform Act (the Reform Act). Prior to the Reform Act, eligibility and benefit rules and financing arrangements for the Plans were authorized by acts of Congress and administered by the Federal Government. Benefits were paid monthly from the general revenues of the U.S. Treasury on a “pay-as-you-go” basis when workers retired, not on a prefunded basis using actuarial assumptions and methods.

In 1997, with the passage of the National Capital Revitalization and Self-Government Improvement Act (the Revitalization Act), the Federal Government assumed responsibility for the unfunded pension liabilities for retirement benefits earned as of June 30, 1997.

In 1998, the District of Columbia passed the Police Officers, Firefighters and Teachers Retirement Benefit Replacement Plan Act (the Replacement Plan Act), which established retirement plans for pension benefits accrued after June 30, 1997 and the method for calculating the employer’s (District of Columbia) annual contribution to the retirement Fund. The Board’s independent actuary determines the level of covered payroll and calculates the employer’s annual contribution which is expressed as a percentage of payroll (the normal contribution rate) for each participant group.

With the passage of the District’s Office of Financial Operations and Systems Reorganization Act of 2004, DCRB assumed certain benefits administration responsibilities for the Plans from the District’s Office of Pay and Retirement Services. Those responsibilities included recordkeeping, related administrative tasks, and the payment of benefits for participants hired on or after July 1, 1997, who earned benefits under the District Plans. Under a memorandum of understanding signed in 2005, DCRB assumed the same administrative responsibilities for participants hired prior to July 1, 1997 and whose benefit costs are the responsibility of the U.S. Treasury.

## About DCRB

### Profile of the Plans

The District of Columbia Police Officers and Firefighters' Retirement Plan provides retirement, service-related disability, non-service-related disability and death benefits. All police officers and firefighters of the District of Columbia automatically become members on their date of employment. Police cadets are not eligible.

The District of Columbia Teachers' Retirement Plan provides retirement, disability and death benefits. Permanent, temporary and probationary teachers for the District of Columbia public day schools become members automatically on their date of employment. Other employees covered include school librarians, principals and counselors. Former District of Columbia teachers working at charter schools may be eligible to remain in the Plan.

In order to minimize administrative expenses while providing a broad range of investment options that are economically feasible, the assets of the Plans are comingled for investment purposes. The investment returns of the Fund are calculated based on the fair value of the assets. The Board seeks long-term investment returns in excess of the actuarial investment rate of return assumption at a level of risk commensurate with the expected levels of returns and consistent with sound and responsible investment practices. The Board, working closely with investment consultants and with input from its actuary, selects the optimal asset allocation policy which best reflects the risk tolerance and investment goals of the Fund.

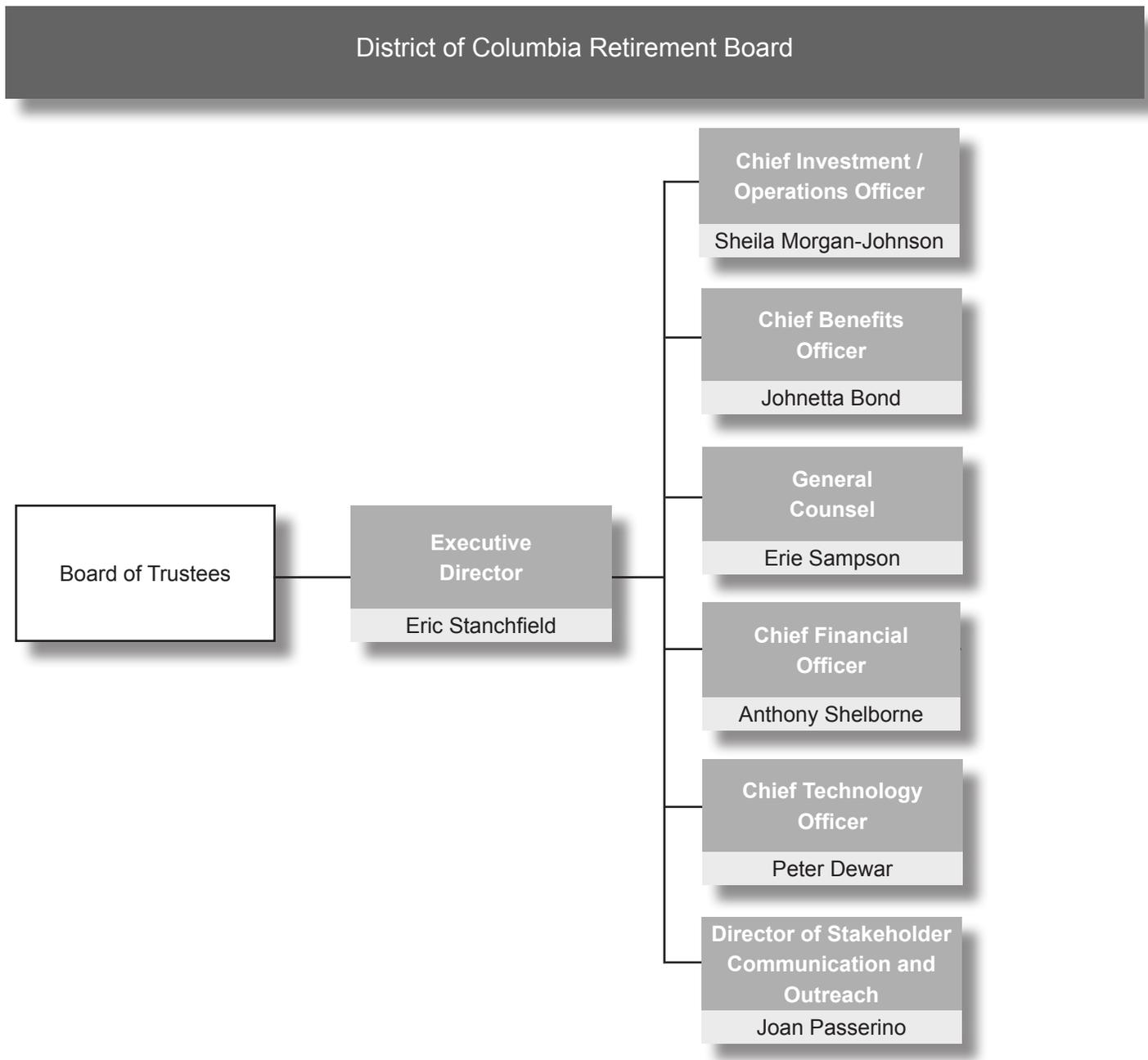
The asset allocation policy is implemented through the careful screening and selection of investment managers that have an audited, favorable, long-term track record, a disciplined investment process, and reasonable investment management fees. The Fund also seeks to outperform the Policy Benchmark, computed as the weighted average index return of the strategic asset allocation as described in the Investments Section.

Upon assuming responsibility for administering the Plans in October 2005, DCRB established a Benefits Department that is available to all active Plan members and retirees, calculates benefit payments and works closely with the U.S. Department of the Treasury's Office of D.C. Pensions (ODCP) to implement system changes resulting from software upgrades or legislation affecting plan provisions. DCRB produces plan communications that include periodic newsletters and Summary Plan Descriptions, as prescribed by statute. ODCP maintains the retirement information system that calculates benefits, issues monthly benefit payments to retirees and survivors and handles all payment-related activities, including tax withholdings and premiums for health and life insurance coverage.

By statute, the Board of Trustees is responsible for establishing DCRB's annual budget. The budget relies on monies derived from the Fund's investment earnings and employer and employee contributions. In addition, DCRB receives reimbursements as the third-party administrator for the frozen federal plans covering members whose pension benefits are financed by the U.S. Treasury. The District Council provides oversight of the budget process and, pursuant to Section 1-711 (f) of the District of Columbia Code, "may establish the amount of funds which will be allocated by the Board for administrative expenses, but may not specify the purposes for which such funds may be expended or the amounts which may be expended for the various activities."

## Organizational Structure

As of September 30, 2016



Auditor	Actuary	Investment Consultants*	
 <b>CliftonLarsonAllen</b>	 <b>Cavanaugh Macdonald</b> CONSULTING, LLC <i>The experience and dedication you deserve</i>		 <b>MEKETA INVESTMENT GROUP</b>

\*Information regarding the investment consultants can be found in the Schedule of Fees and Commissions in the Investments Section.

## Board of Trustees

As of September 30, 2016

DCRB's Board (the Board) has 12 Trustees, six (6) of whom are elected by the participant groups, three (3) who are appointed by the Mayor, and three (3) who are appointed by the District Council. In addition, the DC Treasurer (representing the District's Chief Financial Officer), serves on the Board as an ex-officio (non-voting) member. The Trustees, who are fiduciaries, must act solely in the interest of all Plan members.



**Lyle M. Blanchard**  
*Treasurer*  
Council Appointee  
Current Term:  
2013 - 2017



**Joseph M. Bress**  
*Chairman*  
Council Appointee  
Current Term:  
2016 - 2020



**Joseph W. Clark**  
*Parliamentarian*  
Mayoral Appointee  
Current Term:  
2014 - 2018



**Mary A. Collins**  
*Elected Retired Teacher*  
Current Term:  
2014 - 2018



**Barbara Davis Blum**  
*Mayoral Appointee*  
Current Term:  
2012 - 2016



**Gary W. Hankins**  
*Sergeant-at-Arms*  
Elected Retired Police  
Current Term:  
2013 - 2017



**Darrick O. Ross**  
*Elected Active Police*  
Current Term:  
2015 - 2019



**Nathan A. Saunders**  
*Elected Active Teacher*  
Term:  
2013 - 2017

**Board of Trustees**

As of September 30, 2016



**Edward C. Smith**  
*Elected Active Firefighter*  
Current Term:  
2013 - 2017



**Thomas N. Tippet**  
*Elected Retired Firefighter*  
Current Term:  
2016 - 2020



**Michael J. Warren**  
*Secretary*  
Council Appointee  
Current Term:  
2011 - 2015



**Lenda P. Washington**  
*Mayoral Appointee*  
Current Term:  
2014 - 2019

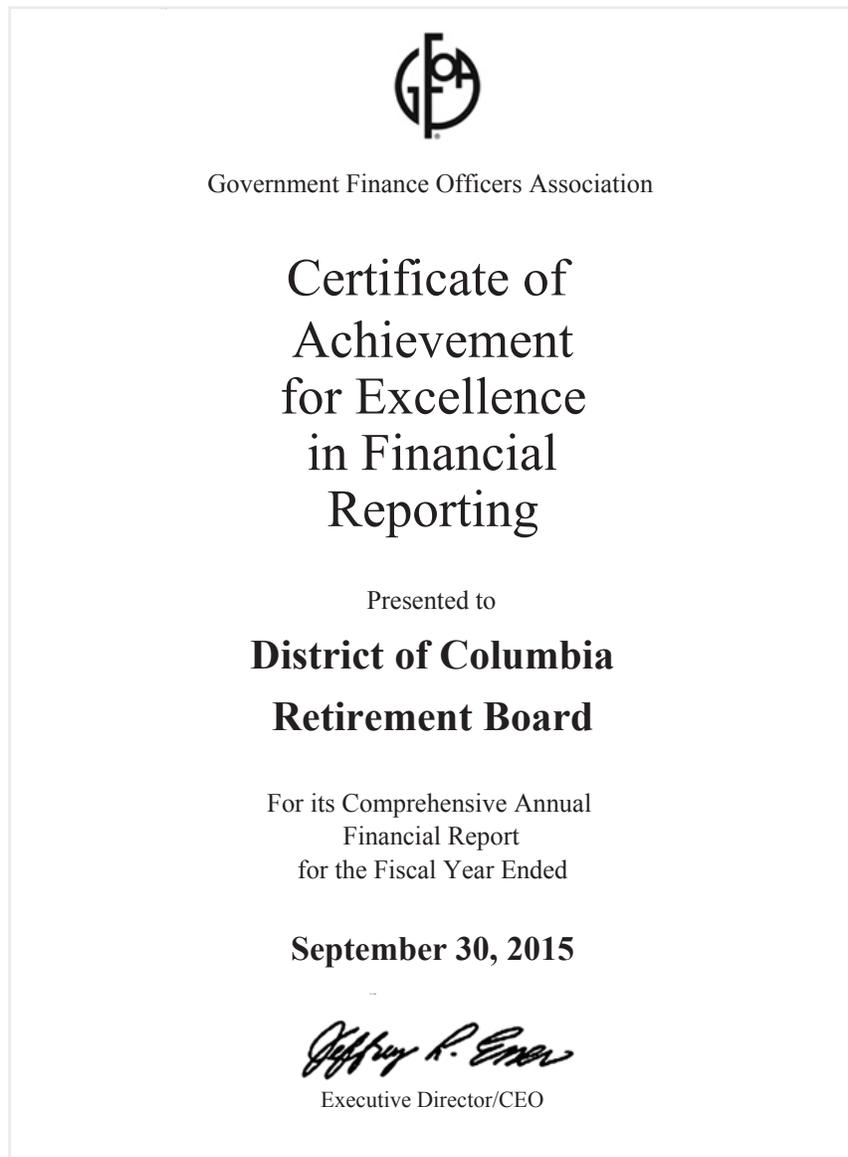


**Jeffery E. Barnett**  
*Designee of the D.C. CFO*  
D.C. Deputy CFO/Treasurer

## Awards

### Certificate of Achievement for Excellence in Financial Reporting

The Government Finance Officers Association of the United States and Canada (GFOA) awarded a Certificate of Achievement for Excellence in Financial Reporting to DCRB for our Comprehensive Annual Financial Report for the Fiscal Years ended September 30, 2015 and 2014. The Certificate of Achievement is awarded to a government for publishing an easily readable and efficiently organized comprehensive annual financial report that satisfies both generally accepted accounting principles and applicable legal requirements. DCRB's Finance department has won this award for the past seven years. We believe our current comprehensive annual report continues to meet the Certificate of Achievement Program's requirements.



## Awards

### Public Pension Standards Award

The Public Pension Coordinating Council (PPCC) awarded a Public Pension Standards Award for Funding to DCRB for the Fiscal Year ended September 30, 2015. In order to be awarded a Public Pension Standards Award, a public pension program must meet professional standards for plan funding as set forth in the Public Pension Standards A public Pension Standards Award is valid for a period of one year.



Public Pension Coordinating Council

Recognition Award for Funding  
**2015**

Presented to

District of Columbia Retirement Board

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, appearing to read 'Alan H. Winkle'.

Alan H. Winkle  
Program Administrator

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## Independent Auditors' Report



CliftonLarsonAllen LLP  
[www.CLAconnect.com](http://www.CLAconnect.com)

### INDEPENDENT AUDITORS' REPORT

Board of Trustees  
District of Columbia Teachers' Retirement Fund and the  
District of Columbia Police Officers and Firefighters' Retirement Fund

#### Report on Financial Statements

We have audited the accompanying combining statements of fiduciary net position of the District of Columbia Teachers' Retirement Fund and the District of Columbia Police Officers and Firefighters' Retirement Fund, Pension Trust Funds of the Government of the District of Columbia (the District), as of September 30, 2016 and 2015, and the related combining statements of changes in fiduciary net position for the years then ended, 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 audits. We conducted our audits 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 of 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 auditors' 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.



## Independent Auditors' Report

### Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the District of Columbia Teachers' Retirement Fund and the District of Columbia Police Officers and Firefighters' Retirement Fund as of September 30, 2016 and 2015, and the respective changes in their financial position for the years then ended in accordance with accounting principles generally accepted in the United States of America.

### Emphasis of Matter

As discussed in Note 1, these financial statements only present the District of Columbia Teachers' Retirement Fund and the District of Columbia Police Officers and Firefighters' Retirement Fund and do not purport to, and do not, present the financial position of the Government of the District of Columbia as of September 30, 2016 and 2015, and the changes in its financial position for the years then ended in conformity 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 and the schedules of changes in the net pension liability and related ratios, employer contributions and investment returns, as listed in the table of contents, be presented to supplement the financial statements. Such information, although not a part of the financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the 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 and the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the financial statements, and other knowledge we obtained during our audits of the financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

### Other Information

Our audits were conducted for the purpose of forming an opinion on the District of Columbia Teachers' Retirement Fund and the District of Columbia Police Officers and Firefighters' Retirement Fund financial statements. The supplementary information, including the schedules of administrative expenses, investment expenses, and payments to consultants, as listed in the table of contents, is presented for purposes of additional analysis and is not a required part of the financial statements.

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

The introductory, investment, actuarial and statistical sections, as listed in the table of contents, have not been subjected to the auditing procedures applied in the audit of the financial statements, and accordingly, we do not express an opinion or provide any assurance on it.

## Independent Auditors' Report

### **Other Reporting Required by Government Auditing Standards**

In accordance with Government Auditing Standards, we have also issued our report dated January 3, 2017 on our consideration of the District of Columbia Teachers' Retirement Fund and the District of Columbia Police Officers and Firefighters' Retirement Fund's internal control over financial reporting and on our tests of their 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 District of Columbia Teachers' Retirement Fund and the District of Columbia Police Officers and Firefighters' Retirement Fund's internal control over financial reporting and compliance.

*CliftonLarsonAllen LLP*

**CliftonLarsonAllen LLP**

Baltimore, Maryland

January 3, 2017

## Management's Discussion and Analysis

### INTRODUCTION

This discussion and analysis provides an overview of the financial activities of the District of Columbia Teachers' Retirement Fund (TRF) and Police Officers and Firefighters' Retirement Fund (POFRF), for the years ended September 30, 2016, 2015 and 2014, which collectively will be referred to as the "District Retirement Funds" or the "Fund." This discussion and analysis should be read in conjunction with the financial statements, the notes to the financial statements, the required supplementary information and the supplementary information provided in this report.

The District of Columbia Retirement Board (the Board or DCRB) is an independent agency of the District of Columbia (the District or D.C.) government. The Board is responsible for managing the assets of the District Retirement Funds. As authorized by D.C. Code, the Board pools the assets of the TRF and the POFRF into a single investment portfolio. The Board allocates the investment returns and expenses, and the administrative expenses of the Board, between the two District Retirement Funds in proportion to their respective net position. The Board maintains financial records of contributions, purchases of service, benefit payments, refunds, investment earnings, investment expenses and administrative expenses.

Effective October 1, 2005, the Board entered into a Memorandum of Understanding (MOU) with the District of Columbia and the United States Department of the Treasury (the U.S. Treasury) to administer the pension benefits under the TRF and the POFRF for all retirees, survivors and beneficiaries that are the financial responsibility of the District of Columbia (service earned on and after July 1, 1997) and the Federal Government (service through June 30, 1997). In addition to the Board's administrative duties, the U.S. Treasury also provides certain administrative services related to the administration of pension benefits under the District of Columbia Teachers' Retirement Plan and the District of Columbia Police Officers and Firefighters' Retirement Plan (the Plans). The administrative costs incurred while administering the pension benefits are shared by DCRB and the U.S. Treasury in accordance with an MOU that is agreed to annually between the two parties.

### OVERVIEW OF THE FINANCIAL STATEMENTS AND SCHEDULES

The following discussion and analysis are intended to serve as an introduction to DCRB's financial statements. The basic financial statements include:

**The Combining Statements of Fiduciary Net Position** are a point-in-time snapshot of plan fund balances at fiscal year end. It reports the assets available to pay future benefits to retirees, and any liabilities that are owed as of the statement date. The resulting Net Position (Assets – Liabilities = Net Position) represents the value of assets restricted for pensions net of liabilities owed as of the financial statement date.

**The Combining Statements of Changes in Fiduciary Net Position** display the effect of financial transactions that occurred during the fiscal year, where Additions – Deductions = Change in Net Net Position. This increase (or decrease) in Net Position reflects the change in the value of Net Position Restricted for Pensions.

**The Notes to Financial Statements** contain disclosures and discussions which support the data presented in the financial statements. The notes present information about the creation and administration of the Fund, significant accounting policies, and investments. The notes are an integral part of the financial statements and should be considered in conjunction with any review of the financial statements.

**The Required Supplementary Information** The required supplementary information consists of schedules of changes of employers' net pension liability and related ratios, employer contributions, and the money-weighted rate of investment returns.

**The Supplementary Information** includes additional information on the District Retirement Funds including schedules of administrative expenses, investment expenses and payments to consultants. These schedules include more detailed information pertaining to the Plans.

## Management's Discussion and Analysis

### ANALYSIS OF FINANCIAL INFORMATION

DCRB's funding objective is to meet long-term benefit obligations with net investment income and employer and member contributions. The discussion below provides an analysis of the current year's financial activities in relation to the current member population and relevant economic conditions for the combined Funds.

#### Additions to Net Position (Revenues)

Additions to net position are comprised of employer contributions, employee contributions, net investment income, and other income. These additions for fiscal year 2016 totaled \$818.2 million, an increase of \$868.5 million over the fiscal year 2015 amount of \$(50.3) million. This increase was primarily due to the higher investment returns in fiscal year 2016.

Employer contributions in fiscal year 2016 totaled \$180.6 million, an increase of \$37.7 million over the fiscal year 2015 amount of \$142.9 million. The fiscal year 2016 employer contribution was derived from the contribution rate calculated in the actuary's report for the period ended October 1, 2014 multiplied by covered payroll and adjusted for timing differences caused by the contribution being calculated 2 years in arrears. This adjustment is required by the D.C. Code.

Employee contributions in fiscal year 2016 totaled \$66.4 million, an increase of \$1.1 million over the fiscal year 2015 amount of \$65.3 million. Employee contributions consist of amounts paid by members for future retirement benefits.

Investment income, net of investment fees, for fiscal year 2016 totaled \$567.4 million, a return of 9.3%. Net investment income for fiscal year 2015 totaled \$(259.9) million, a return of (4.1%).

Other income in fiscal year 2016 totaled \$3.8 million, an increase of \$2.4 million over the fiscal year 2015 amount of \$1.4 million. Other income consists mainly of reimbursements of administrative expenses from the U.S. Treasury.

#### Deductions from Net Position (Expenses)

The statutory mandate of DCRB is to provide retirement, survivor and disability benefits to qualified members and their survivors. The costs of such programs include recurring benefit payments, elective refunds of contributions to employees who terminate employment, and the cost of administering the District Retirement Funds.

Deductions from net position are comprised of benefit payments, retirement benefits payable to the U.S. Treasury, refunds and administrative expenses. These deductions for fiscal year 2016 totaled \$174.3 million, an increase of \$23.1 million or 15.3% over the fiscal year 2015 amount of \$151.2 million.

Benefit payments for fiscal year 2016 totaled \$147.6 million, an increase of \$19.9 million or 15.5% over the fiscal year 2015 amount of \$127.7 million. This increase reflects the combination of a net growth of 8.8% in the number of retirees and survivors receiving benefits, coupled with COLA adjustments and an overall increase in the final average salary for new retirees. In fiscal years 2016 and 2015, benefit payments made on behalf of current retirees, survivors and beneficiaries comprised approximately 85% of DCRB expenses.

Refunds in fiscal year 2016 totaled \$8.4 million, an increase of \$1.4 million or 20.3% over the fiscal year 2015 amount of \$7.0 million. Refunds of member accounts are at the discretion of the member, and vary from year to year.

Administrative expenses in fiscal year 2016 totaled \$17.7 million, an increase of \$1.2 million or 7.2% over the fiscal year 2015 amount of \$16.5 million. In fiscal years 2016 and 2015, the administrative expenses were equivalent to 26 and 27 basis points of the assets under management, respectively.

## Management's Discussion and Analysis

### Funding Status

As of October 1, 2016 (the date of the most recent actuarial valuation), the funding status was 104.6% for the combined District Retirement Funds. DCRB is a well-funded yet immature system as a result of the 1999 asset split with the U.S. Treasury in which the U.S. Treasury assumed responsibility for all benefit obligations prior to July 1, 1997. As with all immature systems, a higher percentage of benefits are funded by current contributions. As the system matures, investment income will provide a greater percentage of the funds necessary to pay retirement benefits. Therefore, the long-term rate of investment return is critical to DCRB's long-term funding status.

At October 1, 2016, the actuarial value of assets set aside to pay pension benefits was \$1.8 billion for the TRF and \$5.0 billion for the POFRF for a total of \$6.8 billion. The fair value of these assets at September 30, 2016, included on the financial statements of DCRB was \$1.8 billion for the TRF and \$5.0 billion for the POFRF for a total of \$6.8 billion. Therefore, when viewing the actuarial funding status in this case, the actuarial value of assets would provide a similar funding position to the fair value of assets as of the October 1, 2015 valuation.

### FINANCIAL ANALYSIS SUMMARY

Net position may serve over time as a useful indication of DCRB's financial strength. At the close of fiscal years 2016 and 2015, the net position of DCRB totaled \$6.8 and \$6.1 billion, respectively. Net position serves to meet DCRB's ongoing obligations to Plan participants and their survivors and beneficiaries.

## Management's Discussion and Analysis

### Summary of Financial Information

The following Condensed and Combining Statements of Fiduciary Net Position and Changes in Fiduciary Net Position present financial information for the combined Funds and compares fiscal years 2016, 2015 and 2014.

#### Condensed and Combined Statements of Fiduciary Net Position

(Dollars in thousands)

	2016	2015	2014	2016 Percent Change	2015 Percent Change
<b>Assets</b>					
Cash and short-term investments	\$51,480	\$75,492	\$27,400	-31.8%	175.5%
Receivables	14,235	14,077	155,149	1.1%	-90.9%
Prepaid expenses	10	47	194	-78.7%	-75.8%
Investments	6,728,612	6,056,101	6,275,768	11.1%	-3.5%
Collateral from securities lending	-	-	24,982	-	-
<b>Total assets</b>	<b>6,794,337</b>	<b>6,145,717</b>	<b>6,483,493</b>	<b>10.6%</b>	<b>-5.2%</b>
<b>Liabilities</b>					
Other payables	7,879	4,214	6,404	87.0%	-34.2%
Investment commitments payable	9,878	8,867	117,663	11.4%	-92.5%
Obligations under securities lending	-	-	25,336	-	-
<b>Total liabilities</b>	<b>17,757</b>	<b>13,081</b>	<b>149,403</b>	<b>35.7%</b>	<b>-91.2%</b>
<b>Net Position Restricted For Pensions</b>	<b>\$6,776,580</b>	<b>\$6,132,636</b>	<b>\$6,334,090</b>	<b>10.5%</b>	<b>-3.2%</b>

## Management's Discussion and Analysis

### Condensed and Combined Statements of Changes in Fiduciary Net Position (Dollars in thousands)

	2016	2015	2014	2016 Percent Change	2015 Percent Change
<b>Additions</b>					
Employer contributions	\$180,584	\$142,943	\$142,402	26.30%	0.40%
Plan member contributions	66,376	65,300	61,572	1.60%	6.10%
Net investment income (loss)	567,419	-259,930	470,980	318.30%	-155.20%
Other income	3,843	1,397	1,864	175.10%	-25.10%
<b>Total additions (reductions)</b>	<b>818,222</b>	<b>-50,290</b>	<b>676,818</b>	<b>1727.00%</b>	<b>-107.40%</b>
<b>Deductions</b>					
Benefit payments	147,554	127,710	112,616	15.50%	13.40%
Retirement benefits payable to U.S. Treasury	676	-	-		
Refunds	8,384	6,972	7,427	20.30%	-6.10%
Administrative expenses	17,664	16,482	13,517	7.20%	21.90%
<b>Total deductions</b>	<b>174,278</b>	<b>151,164</b>	<b>133,560</b>	<b>15.30%</b>	<b>13.20%</b>
<b>Change In Net Position</b>	<b>\$643,944</b>	<b>(\$201,454)</b>	<b>\$543,258</b>	<b>419.60%</b>	<b>-137.10%</b>

## Management's Discussion and Analysis

### Financial Highlights

The Teachers' Retirement Fund financial highlights for fiscal year 2016 are as follows:

- Net position restricted for pensions as of September 30, 2016 was \$1.8 billion, an increase of \$151.5 million or 9.1% over fiscal year 2015.
- Investment income, net of investment expenses, for fiscal year 2016 was \$152.3 million, a return of 9.3%. Investment income, net of investment expenses, for fiscal year 2015 was \$(72.6) million, a return of (4.2%).
- Total additions for fiscal year 2016 were \$231.4 million, an increase of \$232.5 million over fiscal year 2015. In fiscal year 2015, there was a total reduction of (\$1.1 million). Employer contributions for fiscal year 2016 were \$44.5 million, an increase of \$5.0 million or 12.5% over fiscal year 2015. Employee contributions for fiscal year 2016 were \$33.6 million, an increase of \$2.0 million or 6.2% over fiscal year 2015. Other income for fiscal year 2016 was \$1.0 million, an increase of \$600 thousand over the fiscal year 2015 amount of \$400 thousand.
- Total deductions for fiscal year 2016 were \$80.1 million, an increase of \$5.9 million or 8.0% over fiscal year 2015. Pension benefit payments for fiscal year 2016 were \$68.6 million, an increase of \$4.6 million or 7.1% over fiscal year 2015. Refunds of member contributions for fiscal year 2016 were \$6.2 million, an increase of \$600 thousand or 11.3% over fiscal year 2015. Administrative expenses for fiscal year 2016 were \$4.8 million, an increase of \$300 thousand or 5.9% over fiscal year 2015.
- The Board's funding objective is to meet long-term pension benefit obligations. As of October 1, 2016, the date of the latest actuarial valuation, the TRF's ratio of plan net position to total pension liability (at September 30, 2016) was 88.27%. In general, this means that for each dollar's worth of future pension liability, the TRF has accumulated \$0.88 to meet that obligation. This ratio increased 2.6% over the prior year funded ratio of 85.6%

## Management's Discussion and Analysis

The Police Officers and Firefighters' Retirement Fund financial highlights for fiscal year 2016 are as follows:

- Net position restricted for pensions as of September 30, 2016 was \$5.0 billion, an increase of \$492.5 million or 11% over fiscal year 2015.
- Investment income, net of investment expenses, for fiscal year 2016 was \$415.1 million, a return of 9.3%. Investment income, net of investment expenses, for fiscal year 2015 was \$(187.3) million, a return of (4.1%).
- Total additions for fiscal year 2016 were \$586.9 million, an increase of \$636.1 million over fiscal year 2015. In fiscal year 2015, there was a total reduction of (\$49.2) million. Employer contributions for fiscal year 2016 were \$136.1 million, an increase of \$32.7 million or 31.6% over fiscal year 2015. Member contributions for fiscal year 2016 were \$32.8 million, a decrease of \$900 thousand or (2.7%) over fiscal year 2015. Other income for fiscal year 2016 was \$2.8 million, an increase of \$1.8 million over the fiscal year 2015 amount of \$1.0 million.
- Total deductions for fiscal year 2016 were \$94.2 million, an increase \$17.2 million or 22.3% over fiscal year 2015. Pension benefit payments for fiscal year 2016 were \$78.9 million, an increase of \$15.3 or 24.0% over fiscal year 2015. Refunds of member contributions for fiscal year 2016 were \$2.2 million, an increase of \$800 thousand or 56.1% over fiscal year 2015. Administrative expenses for fiscal year 2016 were \$12.9 million, an increase of \$900 thousand or 7.7% over fiscal year 2015.
- The Board's funding objective is to meet long-term pension benefit obligations. As of October 1, 2016, the date of the latest actuarial valuation, the POFRF's ratio of plan net position to total pension liability (at September 30, 2016) was 105.9%. In general, this means that for each dollar's worth of future pension liability, the POFRF has accumulated about \$1.06 to meet that obligation. This ratio increased 4.1% over the prior year ratio of 101.8%.

### ADDITIONAL INFORMATION

These financial statements of the District Retirement Funds are presented in accordance with accounting principles generally accepted in the United States of America. Questions about these financial statements or other inquiries should be addressed to the Executive Director, District of Columbia Retirement Board, 900 7th Street NW, 2nd Floor, Washington, D.C. 20001.

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## FINANCIAL STATEMENTS

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## Combining Statements of Fiduciary Net Position

As of September 30, 2016 and 2015

(Dollar amounts in thousands)

	2016			2015		
	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total
<b>Assets</b>						
Cash and short-term investments	\$ 13,993	\$ 37,487	\$ 51,480	\$ 18,352	\$ 57,140	\$ 75,492
Receivables:						
Federal Government	777	2,107	2,884	248	652	900
Investment sales proceeds	1,618	4,407	6,025	500	1,333	1,833
Interest & dividends	127	344	471	1,871	4,994	6,865
Employee contributions	2,480	2,375	4,855	2,253	2,226	4,479
Total receivables	5,002	9,233	14,235	4,872	9,205	14,077
Prepaid expenses	3	7	10	13	34	47
Investments at fair value:						
Domestic equity	525,588	1,430,431	1,956,019	379,824	1,013,536	1,393,360
International equity	559,372	1,522,376	2,081,748	458,933	1,224,239	1,683,172
Fixed income	488,528	1,329,569	1,818,097	511,262	1,364,270	1,875,532
Real estate	128,811	350,569	479,380	107,792	287,638	395,430
Private equity	105,699	287,669	393,368	193,163	515,444	708,607
Total investments at fair value	1,807,998	4,920,614	6,728,612	1,650,974	4,405,127	6,056,101
Total assets	1,826,996	4,967,341	6,794,337	1,674,211	4,471,506	6,145,717
<b>Liabilities</b>						
Retirement benefits payable to U.S. Treasury	459	217	676	-	-	-
Accounts payable and other liabilities	1,377	3,751	5,128	735	1,950	2,685
Due to Federal Government	56	154	210	20	53	73
Due to District of Columbia Government	501	1,364	1,865	401	1,055	1,456
Investment commitments payable	2,654	7,224	9,878	2,417	6,450	8,867
Total liabilities	5,047	12,710	17,757	3,573	9,508	13,081
<b>Net Position Restricted For Pensions</b>	<b>\$ 1,821,949</b>	<b>\$ 4,954,631</b>	<b>\$ 6,776,580</b>	<b>\$ 1,670,638</b>	<b>\$ 4,461,998</b>	<b>\$ 6,132,636</b>

The accompanying notes are an integral part of these financial statements.

## Combining Statements of Changes in Fiduciary Net Position

For the years ended September 30, 2016 and 2015

(Dollar amounts in thousands)

	2016			2015		
	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total
<b>Additions</b>						
Contributions:						
District Government	\$ 44,469	\$ 136,115	\$ 180,584	\$ 39,513	\$ 103,430	\$ 142,943
Plan member	33,591	32,785	66,376	31,621	33,679	65,300
Total contributions	78,060	168,900	246,960	71,134	137,109	208,243
Investment (loss) income:						
Net (depreciation) appreciation in fair value of investments	147,820	371,288	519,108	-76,764	-205,187	-281,951
Interest and dividends	8,245	54,220	62,465	7,476	26,733	34,209
Total gross investment (loss) income	156,065	425,508	581,573	-69,288	-178,454	-247,742
Less:						
Investment expenses	3,803	10,351	14,154	3,378	8,878	12,256
Net investment (loss) income	152,262	415,157	567,419	-72,666	-187,332	-259,998
Securities lending income	-	-	-	24	63	87
Less: securities lending expense	-	-	-	5	14	19
Net securities lending income	-	-	-	19	49	68
Total net investment (loss) income	152,262	415,157	567,419	-72,647	-187,283	-259,930
Other income	1,033	2,810	3,843	385	1,012	1,397
Total (reductions) additions	231,355	586,867	818,222	-1,128	-49,162	-50,290
<b>Deductions</b>						
Benefit payments	68,634	78,920	147,554	64,076	63,634	127,710
Retirement benefits payable to U.S. Treasury	459	217	676	-	-	-
Refunds	6,205	2,179	8,384	5,576	1,396	6,972
Administrative expenses	4,746	12,918	17,664	4,543	11,939	16,482
Total deductions	80,044	94,234	174,278	74,195	76,969	151,164
<b>Change in Net Position</b>	151,311	492,633	643,944	-75,323	-126,131	-201,454
<b>Net Position Restricted For Pensions:</b>						
<b>Beginning of Year</b>	1,670,638	4,461,998	6,132,636	1,745,961	4,588,129	6,334,090
<b>End of Year</b>	\$ 1,821,949	\$ 4,954,631	\$ 6,776,580	\$ 1,670,638	\$ 4,461,998	\$ 6,132,636

The accompanying notes are an integral part of these financial statements.

## Notes to Financial Statements

### NOTE 1: ORGANIZATION

The District of Columbia Teachers' Retirement Fund and the District of Columbia Police Officers and Firefighters' Retirement Fund were established in 1979 by the District of Columbia Retirement Reform Act (the Reform Act, Pub. L. 96-122, D. C. Code § 1-701 et seq.). The Fund holds in trust the assets available to pay pension benefits to teachers, police officers and firefighters of the District of Columbia Government. The Reform Act also established the District of Columbia Retirement Board.

The National Capital Revitalization and Self-Government Improvement Act of 1997 (the Revitalization Act, Title XI of the Balanced Budget Act of 1997, Pub. L. 105-33) transferred significant assets and liabilities of the District Retirement Funds to the Federal Government. The Revitalization Act transferred to the Federal Government the liability for retirement benefits for employee service credit earned prior to July 1, 1997, by participants of the District Retirement Funds. The assets transferred to the Federal Government were intended to partially fund this liability.

On September 18, 1998, the Council of the District of Columbia (the Council) enacted the Police Officers, Firefighters, and Teachers Retirement Benefit Replacement Plan Act of 1998 (the Replacement Act). The Replacement Act established the District Retirement Funds for employee service earned after June 30, 1997, and provided for full funding of these benefits on an actuarially sound basis.

The Board is an independent agency of the District of Columbia government that is responsible for managing the assets of the TRF and the POFRF. Although the assets of these funds are commingled for investment purposes, each fund's assets may only be used for the payment of benefits to the participants of that fund and certain administrative expenses.

The District Retirement Funds are included in the District's Comprehensive Annual Financial Report as a pension trust fund.

### NOTE 2: FUND ADMINISTRATION AND DESCRIPTION

District of Columbia Retirement Board – The Board consists of 12 trustees, three appointed by the Mayor of the District, three appointed by the Council of the District, and six elected by the active and retired participants. Included are one active and one retired representative each, from the police officers, firefighters, and teachers. Each of the six representatives of the Plans' participants is elected by the respective groups of active and retired employees. In addition, the District's Chief Financial Officer or his designee serves as a non-voting, ex-officio trustee.

Since its inception, the Board has operated under a committee system which provides a two-tiered process for fiduciary review and analysis. In this manner, the Board, consistent with its fiduciary duties, reviews all issues brought before it. The Board has six standing committees: Benefits, Audit, Fiduciary, Investments, Legislative, and Operations. To implement its policies, the Board retains an executive director and other staff who are responsible for the day-to-day management of the District Retirement Funds and the administration of the benefits paid from the Funds.

## Notes to Financial Statements

### NOTE 2: FUND ADMINISTRATION AND DESCRIPTION (continued)

#### Teachers' Retirement Fund

**Other Entities Involved in Plan Administration** – The District of Columbia Public School's (the DCPS) Office of Human Resources makes decisions regarding voluntary and involuntary retirement, survivor benefits, and annual medical and income reviews.

**Benefits Calculation** – DCRB's Benefits Department receives the approved retirement applications for all active Plan members found eligible for retirement by the DCPS Office of Human Resources, and carries out the day-to-day processing of retirement benefits. DCRB also processes employee requests for refunds of contributions and purchases of service.

**Eligibility** – Permanent, temporary, part-time and probationary teachers and certain other employees of the District of Columbia public day schools are automatically enrolled in the Teachers' Retirement Fund on their date of employment. Certain D.C. Public Charter School employees are also eligible to be participants. However, substitute teachers and employees of the Department of School Attendance and Work Permits are not covered.

Title 38, Chapter 20 of the D.C. Official Code (D.C. Code § 38-2021.01 et seq. (2001 Ed.)) establishes benefit provisions which may be amended by the District City Council. For employees hired before November 1, 1996, the annual retirement benefit is the average salary, as defined, multiplied by 1.5% for each of the first five years of service, plus 1.75% for each of the second five years; plus 2% for each additional year over 10 years. For employees hired on or after November 1, 1996, the annual retirement benefit is the average salary, as defined, multiplied by 2% for each year of service. The average salary is the highest average consecutive 36 months of pay.

The annuity may be further increased by crediting unused sick leave as of the date of retirement. Participants receiving retirement benefits receive an annual benefit increase proportional to changes in the Consumer Price Index; however, the annual increase may not exceed 3% for participants hired on or after November 1, 1996. Participants may select from among several survivor options.

Participants who have 5 years of school service (by working for the District of Columbia public school system), and who become disabled and can no longer perform their jobs satisfactorily, may be eligible for disability retirement. Such disability retirement benefits are calculated in the same manner as a retirement benefit, however, a minimum disability benefit applies.

Voluntary retirement is available for teachers who have a minimum of 5 years of school service and who achieve the following age and length of service requirements:

- at age 62 with 5 years of service;
- at age 60 with 20 years of service; and
- at age 55 with 30 years of service; if hired before November 1, 1996; or
- at any age with 30 years of service, if hired by the school system on or after November 1, 1996.

Employees who are involuntarily separated other than for cause and who have 5 years of school service, may be eligible for retirement at any age with 25 years of service or at age 50 with 20 years of service.

An involuntary retirement benefit is reduced if, at the time of its commencement, the participant is under the age of 55

## Notes to Financial Statements

### NOTE 2: FUND ADMINISTRATION AND DESCRIPTION (continued)

#### **Police Officers and Fire Fighters' Retirement Fund**

***Other Entities involved in Plan Administration*** – The District of Columbia Police Officers and Firefighters' Retirement and Relief Board makes findings of fact, conclusions of law, and decisions regarding eligibility for retirement and survivor benefits, determines the extent of disability, and conducts annual medical reviews. The Police and Fire Clinic determines medical eligibility for disability retirement.

***Benefits Calculation*** – DCRB's Benefits Department receives the retirement orders for retirement benefit calculations for all active Plan members found eligible for retirement by the District of Columbia Police Officers and Firefighters' Retirement and Relief Board, and carries out the day-to-day processing of retirement benefits. DCRB also processes employee requests for refunds of contributions and purchases of service. Effective 2013, DCRB began conducting annual disability income reviews.

***Eligibility*** – A participant becomes a member when he/she begins work as a police officer or firefighter in the District. Cadets are not eligible to join the Fund.

Retirement and disability benefit provisions for District of Columbia police officers and firefighters are established by the "Policemen and Firemen's Retirement and Disability Act" (D.C. Code § 5 701 et seq. (2001 Ed.)).

***Members Hired Before February 15, 1980*** – Members are eligible for optional retirement with full benefits at any age after 20 years of departmental service, or for deferred retirement at age 55 after five years of departmental service. The annual basic retirement benefit equals 2.5% of average base pay, which is defined as the highest average consecutive 12 months of base pay, multiplied by departmental service through 20 years; plus 3% of average base pay multiplied by average base pay times departmental service over 20 years; plus 2.5% of average base pay multiplied by years of other creditable service; however, the aggregate annual basic retirement benefit may not exceed 80% of the member's average base pay. Members terminated after five years of police or fire service are entitled to a deferred pension beginning at age 55. Benefits are also provided to certain survivors of active, retired, or terminated vested members. Retirement benefits are increased by the same percentage in base pay granted to active participants.

Members with a service-related disability receive a disability retirement benefit of 2.5% of average base pay multiplied by the number of years of creditable service. A minimum annual disability retirement benefit of 66 2/3% of average base pay and a maximum annual disability retirement benefit of 70% of average base pay apply.

Members with a non-service related disability and at least five years of departmental service receive a disability retirement benefit of 2% of average base pay multiplied by the number of years of creditable service. A minimum annual disability retirement benefit of 40% of average base pay and a maximum annual disability retirement benefit of 70% of average base pay apply.

***Members Hired On or After February 15, 1980 and Before November 10, 1996*** – Members are eligible for optional retirement with full benefits at age 50 with at least 25 years of departmental service, or after age 55 with five years of departmental service. The annual basic retirement benefit equals 2.5% of average base pay, which is defined as the highest average consecutive 36 months of base pay, multiplied by the number of years of creditable service through 25 years; plus 3% of average base pay multiplied by the number of years of departmental service over 25 years; plus 2.5% of average base pay multiplied by the number of years of other creditable service; however, the aggregate annual basic retirement benefit may not exceed 80% of the member's average base pay. Members separated from the Police or Fire Department after five years of departmental service are entitled to a deferred pension beginning at age 55.

Benefits are also provided to certain survivors of active, retired or terminated vested members. Members who retired after February 15, 1980 receive annual benefit increases proportional to changes in the Consumer Price Index

## Notes to Financial Statements

### NOTE 2: FUND ADMINISTRATION AND DESCRIPTION (continued)

**Members Hired on or After November 10, 1996** – Members are eligible for retirement at any age, with at least 25 years of departmental service or after age 55 with five years of departmental service. The annual basic retirement benefit equals 2.5% of average base pay, which is defined as the highest average consecutive 36 months of base pay, multiplied by creditable service; however, the aggregate annual basic retirement benefit may not exceed 80% of the average base pay. Members separated after five years of departmental service are entitled to a deferred pension beginning at age 55. Benefits are also provided to certain survivors of active, retired, or terminated vested members. Members receive annual benefit increases proportional to changes in the Consumer Price Index, however, the increase is capped at 3%.

Members with a service-related disability receive a disability retirement benefit of 70% of base pay multiplied by the percentage of disability. A minimum annual disability retirement benefit of 40% of base pay applies.

Members with a non-service related disability and at least five years of departmental service receive a disability retirement benefit of 70% of base pay multiplied by the percentage of disability. A minimum annual disability retirement benefit of 30% of base pay applies.

Prior to reaching age 50, a disability retirement benefit will be reduced or terminated if outside earnings exceed a certain limit.

#### Participant Data

The number of participants for the years ended September 30 was as follows

Teachers' Retirement Fund	2016	2015	2014
Retirees and survivors receiving benefits (post June 30, 1997)	3,882	3,718	3,601
Active plan members	5,141	4,866	4,499
Vested terminations	1,176	1,152	969
<b>Total TRF participants</b>	<b>10,199</b>	<b>9,736</b>	<b>9,069</b>

Police Officers and Firefighters' Retirement Fund	2016	2015	2014
Retirees and survivors receiving benefits (post June 30, 1997)	3,003	2,609	2,365
Active plan members	5,359	5,537	5,551
Vested terminations	293	319	257
<b>Total POFRF participants</b>	<b>8,655</b>	<b>8,465</b>	<b>8,173</b>

## Notes to Financial Statements

### **Contributions**

Fund members contribute by salary deductions at rates established by D.C. Code § 5-706 (2001 Ed.). Members contribute 7% (or 8% for Teachers and Police Officers and Firefighters hired on or after November 1, 1996 and November 10, 1996, respectively) of annual gross salary, including any differential for special assignment and longevity, but excluding overtime, holiday, or military pay.

The District is required to contribute the amounts necessary to finance the Plan benefits of its members through annual contributions at actuarially determined amounts in accordance with the provisions of the Replacement Act. The amount of the District contributions for fiscal years 2016 and 2015 were equal to the amounts computed, if any, by the Board's independent actuary.

Contribution requirements of members are established by D.C. Code § 5-706 and requirements for District of Columbia government contributions to the Fund are established at D.C. Code § 1-907.02 (2001 Ed.), which may be amended by the City Council. Administrative costs are paid from investment earnings

### **NOTE 3: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES**

***Basis of Accounting*** – DCRB's financial statements were prepared in accordance with accounting principles generally accepted in the United States (GAAP) using the accrual basis of accounting. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and reporting principles. Employee contributions are recognized at the time compensation is paid to Plan members. Employer contributions are recognized when due and the employer has made a formal commitment to provide the contributions. Benefits and refunds are recognized when due and payable in accordance with the terms of the retirement Plan's commitment.

***Federal Income Tax Status*** – The District Retirement Funds are qualified plans under section 401(a) of the Internal Revenue Code and are exempt from federal income taxes under section 501(a).

***Use of Estimates in Preparing Financial Statements*** – The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires the Board to make estimates and assumptions that affect the reported amounts of assets, liabilities, additions and deductions to net position restricted for pensions and disclosure of contingent assets and liabilities at the date of the financial statements and during the reporting period. Actual results could differ from those estimates.

***Investment Expenses*** – The District of Columbia Appropriation Act authorized Fund earnings to be used for investment expenses incurred in managing the assets and administering the Fund. The total investment expenses borne by the District Retirement Funds was \$14,154,932 in 2016 and \$12,256,010 in 2015. A significant number of the alternative investment managers provide account valuations net of management expenses. Those expenses are netted against investment income and, because they are not separable, are recorded and reported net of management expenses in the net (depreciation) appreciation in the fair value of investments.

***New Accounting Pronouncement*** – GASB Statement No. 72, Fair Value Measurement and Application, which was adopted during the year ended September 30, 2016, addresses accounting and reporting issues related to fair value measurements. This Statement requires disclosures to be made about fair value measurements, the level of fair value hierarchy, and valuation techniques. Comprehensive footnote disclosure regarding this Statement is found in Note 4 beginning on page 39. The information as of September 30, 2015 was unavailable because of the transition to the new custodian

## Notes to Financial Statements

### NOTE 4: INVESTMENTS

The Board is authorized to manage and control the investment of the District Retirement Funds' assets. The Board broadly diversifies the investments of the District Retirement Funds to minimize the risk of large losses, unless under the circumstances it is clearly prudent not to do so, as required by D.C. Code § 1-741(a)(2)(C), (2001 Ed.).

**Master Trust** – The Board has pooled all of the assets under its management (the Investment Pool), as is authorized by D.C. Code § 1-903(b), (2001 Ed.), with a master custodian under a master trust arrangement (the Master Trust). Using an investment pool, each Fund owns an undivided proportionate share of the pool.

District and employee contributions are deposited in the respective Retirement Fund for which the contribution was made, and benefit payments and employee contribution refunds are withdrawn from the Fund in which the recipient participates. Investment performance and administrative expenditures are allocated between the two Funds based upon their proportionate net position in the pool.

The fair values of investments of the Investment Pool as of September 30 are as follows:

(Dollars in thousands)

	2016	2015
<b>Cash and short-term investments</b>	<b>\$ 51,480</b>	<b>\$ 75,492</b>
<b>Investments at fair value:</b>		
Domestic equity	1,956,019	1,393,360
International equity	2,081,748	1,683,172
Fixed income	1,818,097	1,875,532
Real estate	479,380	395,430
Private equity	393,368	708,607
<b>Total investments at fair value</b>	<b>6,728,612</b>	<b>6,056,101</b>
<b>Total</b>	<b>\$6,780,092</b>	<b>\$6,131,593</b>

**Annual money-weighted rate of return** – The money-weighted rate of return shows investment performance when taking into account the impact of cash infusion into and disbursements from the pension system. For the years ended September 30, 2016 and 2015, the money-weighted rates of return, as calculated by the custodian, were as follows:

	FY 2016	FY 2015
Total Portfolio	9.346%	-4.006%

## Notes to Financial Statements

### NOTE 4: INVESTMENTS (continued)

**Debt Instruments** – As of September 30, 2016, the Investment Pool held the following debt instruments:

(Dollars in thousands)

Investment Type	Fair Value	% of Segment	Duration (years)	Rating*
US Agency	\$ 29,916	1.65%	3.69	AA+
Asset Backed	11,300	0.62%	2.58	AAA
Bank Loans	83,759	4.61%	0.16	CCC+
CMBS	18,424	1.01%	5.39	AA
CMO	13,920	0.77%	1.33	AA+
Commingled funds	1,603	0.09%	-	NR
Corporate - US	323,326	17.78%	6.05	BBB+
Corporate - Euro	13,154	0.72%	1.08	CCC+
Foreign	382,125	21.02%	6.02	A-
Mortgage Pass-Through	232,759	12.80%	2.32	AA+
Municipal	7,087	0.39%	11.42	AA-
Unclassified	-	0.00%	-	
US Treasury	621,812	34.20%	7.10	AA+
Yankee	-	0.00%	-	
Other	78,912	4.34%	3.09	B-
<b>Total Fixed Income</b>	<b>\$ 1,818,097</b>	<b>100.00%</b>		

As of September 30, 2015, the Investment Pool held the following debt instruments:

(Dollars in thousands)

Investment Type	Fair Value	% of Segment	Duration (years)	Rating*
US Agency	\$ 25,623	1.37%	4.12	AA+
Asset Backed	4,934	0.26%	2.44	AAA
Bank Loans	129,633	6.91%	4.69	NR
CMBS	16,447	0.88%	4.66	AA
Corporate	443,721	23.66%	5.42	BBB-
Foreign	369,210	19.69%	4.54	A
Mortgage Pass-Through	243,503	12.98%	3.54	AA+
Municipal	8,310	0.44%	11.27	AA-
Unclassified	1,904	0.10%	1.63	AA+
US Treasury	616,117	32.85%	6.61	AA+
Yankee	9,350	0.50%	6.88	B-
Other	6,780	0.36%	N/A	NR
<b>Total Fixed Income</b>	<b>\$ 1,875,532</b>	<b>100.00%</b>		

\* Using quality ratings provided by Standard & Poor's

## Notes to Financial Statements

### NOTE 4: INVESTMENTS (continued)

**Interest Rate Risk** – Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, an investment with a longer maturity will have a greater sensitivity to fair value changes that are related to market interest rates. The Board monitors the interest rate risk inherent in its portfolio by measuring the weighted average duration of its portfolio. Duration is a measure of a debt investment's exposure to fair value changes arising from changing interest rates. It uses the present value of cash flows, weighted for those cash flows as a percentage of the investment's full price. As a general rule, the risk and return of the Board's fixed income segment of the portfolio is compared to the Barclays Capital U.S. Universal Index. To mitigate interest rate risk, the fixed income segment is expected to maintain a weighted average duration (sensitivity to interest rate changes) within +/-2 years of the duration of this Index.

**Credit Risk** – Generally, credit risk is the risk that an issuer of an investment will not fulfill its obligation to the holder of the investment. This is measured by the assignment of a rating by a nationally recognized statistical rating organization. Unless specifically authorized otherwise in writing by the Board, fixed income managers invest in investment grade instruments rated in the top four rating categories by a recognized statistical rating service.

**Foreign Currency Risk** – Foreign currency risk is the risk that changes in exchange rates will adversely impact the fair value of an investment. As a general policy, investment managers with authority to invest in issuers denominated in a foreign currency may reduce exposure to currency risk by systematically hedging foreign currency positions back to U.S. dollars through the forward currency markets. Since the forward exchange rate is seldom equal to the spot exchange rate, forward hedging gains and losses may arise. For the years ended September 30, 2016 and 2015, the Investment Pool held amounts in commingled funds which invested in foreign currencies totaling \$2.4 billion and \$2.0 billion, respectively.

As of September 30, 2016, the Investment Pool held investments that were denominated in a currency other than the United States Dollar, as summarized below:

(Dollars in thousands)

	Asset Class				
	Cash	Equities	Fixed Income	Private Equity	Total
Australian Dollar	\$ -	\$ -	\$ -	\$ -	\$ -
Canadian Dollar	-	-	-	1,258	1,258
Danish Krone	-	-	-	-	-
Euro	76	-	-	29,203	29,279
Hong Kong Dollar	-	-	-	-	-
Japanese Yen	-	-	-	-	-
Mexican Peso	-	-	-	-	-
Pound Sterling	-	-	-	-	-
Singapore Dollar	-	-	-	-	-
South African Rand	-	-	-	-	-
Swedish Krona	-	-	-	-	-
Swiss Franc	110	-	-	-	110
Total Foreign	186	-	-	30,461	30,647
<b>Total Foreign Currency Exposure</b>	<b>\$ 186</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 30,461</b>	<b>\$ 30,647</b>

## Notes to Financial Statements

### NOTE 4: INVESTMENTS (continued)

As of September 30, 2015, the Investment Pool held investments that were denominated in a currency other than the United States Dollar, as summarized below:

(Dollars in thousands)

	Asset Class					Total
	Cash	Equities	Fixed Income	Private Equity		
Australian Dollar	\$ (652)	\$ -	\$ 6,107	\$ -	\$ -	5,455
Canadian Dollar	492	2,273	20,124	-	-	22,889
Danish Krone	-	9,088	-	-	-	9,088
Euro	16,076	290,358	15,347	261,330	-	583,111
Hong Kong Dollar	-	32,050	-	-	-	32,050
Japanese Yen	532	220,725	-	-	-	221,257
Mexican Peso	172	-	-	-	-	172
Pound Sterling	1	54,215	928	-	-	55,144
Singapore Dollar	-	687	-	-	-	687
South African Rand	-	1,040	-	-	-	1,040
Swedish Krona	-	30,338	-	-	-	30,338
Swiss Franc	-	74,634	-	-	-	74,634
Total Foreign	16,621	715,408	42,506	261,330	-	1,035,865
Total Foreign Currency Exposure	\$ 16,621	\$ 715,408	\$ 42,506	\$ 261,330	\$ -	\$ 1,035,865

**Securities Lending Transactions** – The Board’s policies permit the District Retirement Funds to participate in securities lending transactions by relying on a Securities Lending Authorization Agreement, which authorizes the master custodian to lend the Board’s securities to qualified broker-dealers and banks pursuant to a form of loan agreement.

In April 2015, the Board discontinued its participation in State Street’s securities lending program. In 2016, the Board made the decision to transition custodial services from State Street to Northern Trust (see Note 6). As a result, the Board made the decision to discontinue the securities lending program in order to manage the operational risks associated with the planned transition. The Board may participate in securities lending through its new custodian bank in the future; however, it chose not to do so in fiscal year 2016.

For the first six months of fiscal year 2015 the master custodian, at the direction of the Board, loaned certain of the District Retirement Funds’ public equity and fixed income securities for which it received collateral in the form of United States and foreign currency cash, securities issued or guaranteed by the United States government, the sovereign debt of foreign countries and irrevocable bank letters of credit. This collateral could not be pledged or sold unless the borrower defaulted on the loan. Borrowers were required to deliver and maintain collateral for each loan in an amount equal to (i) at least 102% of the fair value of the loaned security in the United States; or (ii) 105% of the fair value of the loaned securities in the case of loaned securities not denominated in United States dollars or whose primary trading market was not located in the United States.

The Board and the borrowers maintained the right to terminate all securities lending transactions on demand. The cash collateral received on each loan was invested, together with the cash collateral of other qualified tax-exempt plan lenders, in a collective investment pool (the Quality D Fund). The Quality D Fund does not meet the requirements of the Securities and Exchange Commission Rule 2a-7 of the Investment Company Act of 1940, and accordingly, the master custodian has valued the Fund’s investments at fair value for reporting purpose.

## Notes to Financial Statements

### NOTE 4: INVESTMENTS (continued)

The Quality D Fund is not registered with the Securities and Exchange Commission. The master custodian, and consequently the investment vehicles it sponsors (including the Quality D Fund), are subject to the oversight of the Federal Reserve Board and the Massachusetts Commissioner of Banks. The fair value of the Funds' position in the Quality D Fund is not the same as the value of the District Retirement Funds' shares.

There was no involuntary participation in an external investment pool by the Quality D Fund and there was no income from one fund that was assigned to another fund by the master custodian during 2015.

During 2015, the Board did not restrict the amount of the loans that the master custodian made on its behalf. There were no failures by any borrowers to return loaned securities or pay distributions thereon and there were no losses resulting from a default of the borrowers or the master custodian during 2015.

As of September 30, 2016 and 2015 the fair value (USD) of securities on loan, associated collateral and invested cash collateral was \$0.

At times, the fair value of the shares in the Quality D Fund purchased with cash collateral by the lending agent was less than the cost. As of September 30, 2016 and 2015, there were no unrealized losses.

Net security lending income is composed of three components: gross income, broker rebates, and agent fees. Gross income is equal to earnings on cash collateral received in a security lending transaction. A broker rebate is the cost of using that cash collateral. Agent fees represent the fees paid to the agent for administering the lending program. Net security lending income is equal to gross income less broker rebates and agent fees. The Fund's share of securities lending income and expense are reflected on the Combining Statements of Changes in Fiduciary Net Position.

**Derivative Investments** – Derivatives are generally defined as contracts in which the value depends on, or derives from, the value of an underlying asset, reference rate, or index. Derivative investments generally contain exposure to credit risk, market risk, and/or legal risk. Credit risk is the exposure to the default of another party to the transaction (counterparty). Market risk is the exposure to changes in the market, such as a change in interest rates, currency exchange rates, or a change in the price or principal value of a security. The Board believes that all contracts entered into are legally permissible in accordance with the policy of the Board.

During 2016 and 2015, the District Retirement Funds, in accordance with the policy of the Board, and through the District Retirement Funds' investment managers who have full discretion over investment decisions, invested in various derivative instruments either to increase potential earnings or to hedge against potential losses. A list of the derivatives aggregated by type is shown later in this note.

TBAs (to-be-announced, sometimes referred to as dollar rolls) are used by the District Retirement Funds as an alternative to holding mortgage-backed securities outright to raise the potential yield and to reduce transaction costs. The selected TBAs are used because they are expected to behave the same in duration and convexity as mortgage-backed securities with identical credit, coupon and maturity features. Credit risk is managed by limiting these transactions to primary dealers.

Market risk for this type of security is not significantly different from the market risk for mortgage-backed securities.

Foreign currency forwards, futures contracts and foreign currency options are generally used by the District Retirement Funds for defensive purposes. These contracts hedge a portion of the District Retirement Funds' exposure to particular currencies on occasion when significant adverse short-term movement in exchange rate levels is expected.

## Notes to Financial Statements

### NOTE 4: INVESTMENTS (continued)

Foreign currency forward and futures contracts can pose market risk when the maximum potential loss on a particular contract is greater than the value of the underlying investment. Market risks arise due to movements in the foreign exchange rates underlying the contracts used by the District Retirement Funds. Credit risk is managed by limiting transactions to counterparties with short-term credit ratings of A1 or P1 or by trading on organized exchanges.

Market risk for currency options is limited to the purchase cost. Credit risk for currency options is also managed by limiting transactions to counterparties with investment-grade ratings or by trading on organized exchanges.

Equity index futures were also used by the District Retirement Funds in order to gain exposure to equity markets in a more efficient and liquid manner than directly investing in all of the underlying equity securities. Equity index futures may pose market risk when the maximum potential loss on a particular contract is greater than the value of the underlying investment. Market risks arise due to movements in the equities markets underlying the contracts used by the District Retirement Funds. The notional amounts of the contracts are not included in the derivatives holdings disclosed. Credit risk is managed by dealing with member firms of the futures exchanges.

Exchange-traded and over-the-counter bond futures and options are used by the District Retirement Funds to gain exposure to fixed income markets in a more efficient and liquid manner than by purchasing the underlying bonds. Market risk for these futures and options is limited to purchase cost. Credit risk is managed by limiting transactions to counterparties with investment-grade ratings or by trading with member firms of organized exchanges.

Warrants are used by the District Retirement Funds to gain equity exposure and to enhance performance. Warrants are often distributed by issuers to holdings of common stock and bonds, and are held for the same fundamental reasons as the original common stock and/or bond holdings. Rights are a security that gives the holder the entitlement to purchase new shares issued by a corporation at a predetermined price in proportion to the number of shares already owned.

Market risk for warrants and rights is limited to the purchase cost. Credit risk for warrants and rights is similar to the underlying equity and/or bond holdings. Again, all such risks are monitored and managed by the District Retirement Funds' external investment managers who have full discretion over such investment decisions.

Swaps represent an agreement between two or more parties to exchange a sequence of cash flows during a predetermined timeframe. The District Retirement Funds utilize swaps for several different reasons: to manage interest rate fluctuations, to protect against a borrower default, and to gain market exposure without having to actually own the asset.

The District Retirement Funds may manage credit exposure through the use of credit default swaps. A credit default swap (CDS) is a contract whereby the credit risk associated with an investment is transferred by entering into an agreement with another party who, in exchange for periodic fees, agrees to make payments in the event of a default or other predetermined credit event. One of the main advantages of a CDS is that it allows for exposure to credit risk while limiting exposure to other risks such as interest rate and currency risk.

## Notes to Financial Statements

### NOTE 4: INVESTMENTS (continued)

The District Retirement Funds also hold derivative instruments indirectly by participating in pooled, commingled, or short-term funds that hold derivatives. Information regarding any risks associated with these holdings is not generally available. There were no derivatives as of September 30, 2016. The following is a list of derivatives aggregated by type as of September 30, 2015:

Investment Derivatives	Changes in Fair Value (4)		Fair Value at September 30, 2015 (5)		Notional (3)
	Classification	Amount (1)	Classification	Amount (2)	
Credit Default Swaps Bought	Investment Revenue	\$ (71,881)	Swaps	\$ -	\$ -
Credit Default Swaps Written	Investment Revenue	51,904	Swaps	-	-
Fixed Income Futures Long	Investment Revenue	519,101	Futures	-	-
Fixed Income Futures Short	Investment Revenue	(134,495)	Futures	-	-
Fixed Income Options Bought	Investment Revenue	(31,513)	Options	-	-
Fixed Income Options Written	Investment Revenue	70,141	Options	-	-
Foreign Currency Options Written	Investment Revenue	1,619	Options	-	-
FX Forwards	Investment Revenue	(49,491)	Long Term Instruments	-	-
Pay Fixed Interest Rate Swaps	Investment Revenue	(520,352)	Swaps	-	-
Receive Fixed Interest Rate Swaps	Investment Revenue	236,204	Swaps	-	-
Warrants	Investment Revenue	371,524	Common Stock	-	-
<b>Grand Totals</b>		<b>\$ 442,761</b>		<b>\$ -</b>	

(1) Negative values (in brackets) refer to losses

(2) Negative values refer to liabilities

(3) Notional may be a dollar amount or size of underlying for futures and options, negative values refer to short positions

(4) Excludes futures margin payments

(5) DCRB had no derivatives in the investment portfolio as of September 30, 2015

## Notes to Financial Statements

### NOTE 4: INVESTMENTS (continued)

**Fair Value Measurements** - DCRB categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset and gives the highest priority to unadjusted quoted prices in active markets for identical assets (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements).

Level 1 - Unadjusted quoted prices for identical instruments in active markets.

Level 2 – Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active; and model-derived valuations in which all significant inputs are observable.

Level 3 – Valuations 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) are not classified in the fair value hierarchy as they do not have a readily determinable fair value. Examples include member units or an ownership interest in partners' capital to which a proportionate share of net assets is attributed.

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. DCRB's assessment of the significance of particular inputs to these fair value measurements requires judgment and considers factors specific to each asset or liability. The table on page 43 shows the fair value leveling of the investments for the Investment Pool.

Equity securities classified in Level 1 of the fair value hierarchy are valued at the last sale price or official close price as of the close of trading on the applicable exchange where the security principally trades.

Equity and fixed income securities classified in Level 2 of the fair value hierarchy are valued at prices provided by independent pricing vendors. The vendors provide these prices after evaluating observable inputs including, but not limited to: quoted prices for similar securities, the mean between the last reported bid and ask prices (or the last bid price in the absence of an asked price), yield curves, yield spreads, credit ratings, deal terms, tranche level attributes, default rates, cash flows, prepayment speeds, broker/dealer quotations, inflation and reported trades.

**Investments measured at the Net Asset Value (NAV)** - The unfunded commitment and redemption frequency and notice period for investments measured at the net asset value (NAV) per share (or its equivalent) is presented on the table on page 43.

Real Estate and Private Equity - DCRB has made commitments to purchase partnership interests in private equity and real estate funds as part of its long term asset allocation plan for private markets. As shown in the table on page 43, the unfunded commitments totaled \$404.5 million, as of September 30, 2016. This represents global investments in 28 real estate and 18 private equity funds. In general, investments in the private markets program are illiquid and redemptions are structurally limited over the life of the investment. The private equity program spans a range of underlying strategies including buyouts, growth equity/venture, private debt, secondaries and fund-of-funds. The real estate program includes investments in a broad range of real estate strategies (i.e., core, value-added, opportunistic), infrastructure and natural resources funds.

Domestic and International Equities – DCRB has investments in 6 funds with a domestic focus and 5 funds with an international focus, in which the equity securities maintain some level of market exposure; however, the level of market exposure may vary through time.

Fixed income - DCRB has investments in 5 funds, including corporate bonds, and U.S. Treasury obligations, with redemption notifications not greater than 30 days.

## Notes to Financial Statements

### NOTE 4: INVESTMENTS (continued)

Investments measured at Fair Value (Dollars in 000s)				
	Sept 30, 2016	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
<b>Investments by fair value level</b>				
Domestic equity	\$ 264,682	\$ 264,682	\$ -	\$ -
Fixed income	234,083	-	234,083	-
Private equity	896	896	-	-
<b>Total investments by fair value level</b>	<b>\$ 499,661</b>	<b>\$ 265,578</b>	<b>\$ 234,083</b>	<b>\$ -</b>

#### Investments measured at the net asset value (NAV)

Domestic equity	\$ 1,691,337
International equities	2,081,748
Fixed income	1,584,014
Real estate	479,380
Private equity	392,472
Total investments measured at NAV	<u>\$ 6,228,951</u>
<b>Total investments</b>	<b><u>\$ 6,728,612</u></b>

Additional information for investments measured at the net asset value (NAV) per share (or its equivalent) is presented on the table below:

	Sept 30, 2016	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Domestic equities	\$ 1,691,337	\$ -	Daily	None
International equities	2,081,748	-	Daily	None
Fixed income	1,584,014	-	Daily, Monthly	3-30 days
Real estate	479,380	204,735	None	N/A
Private equity	392,472	199,766	None	N/A
<b>Total investments measured at NAV</b>	<b>\$ 6,228,951</b>	<b>\$ 404,501</b>		

## Notes to Financial Statements

### NOTE 5: NET PENSION LIABILITY/(ASSET)

The components of the net pension liability/(asset) of the District Retirement Funds at September 30, 2016 and 2015, were as follows:

(Dollars in thousands)	2016		2015	
	TRF	POFRF	TRF	POFRF
Total Pension Liability	\$ 2,064,138	\$ 4,675,562	\$ 1,950,811	\$ 4,383,414
Fiduciary Net Position	1,821,949	4,954,631	1,670,638	4,461,998
Net Pension Liability (Asset)	\$ 242,189	\$ (279,069)	\$ 280,173	\$ (78,584)
Ratio of Fiduciary Net Position to Total Pension Liability (Asset)	88.27%	105.97%	85.64%	101.79%

**Actuarial Assumptions** - The total pension liability was determined based on an actuarial valuation as of October 1, 2015 and 2014, then updated using the following actuarial assumptions, applied to all periods included in the measurement and rolled forward to the measurement date of September 30, 2016 and 2015, respectively:

Teachers' Retirement Fund	
Inflation	3.5 percent
Salary increases	4.45 - 8.25 percent, including wage inflation of 4.25 percent
Investment rate of return	6.5 percent, net of pension plan investment expense, and including inflation
Mortality	Pre-retirement and post-retirement mortality rates were based on the RP 2000 Combined Mortality Table projected to 2015 with Projection Scale AA set back three years for females. Post-disability mortality rates were based on the RP 2000 Disabled Mortality Table set back 1 year for males and set back 5 years for females.

Police and Firefighters' Retirement Fund	
Inflation	3.5 percent
Salary increases	4.25 - 9.25 percent, including wage inflation of 4.25 percent
Investment rate of return	6.5 percent, net of pension plan investment expense, and including inflation
Mortality	Pre-retirement and post-retirement mortality rates were based on the RP 2000 Combined Mortality Table projected to 2015 with Projection Scale AA set forward 1 year for females.

## Notes to Financial Statements

### NOTE 5: NET PENSION LIABILITY/(ASSET) (continued)

The actuarial assumptions used in the October 1, 2015 valuation were based on the results of the most recent actuarial experience study for the period October 1, 2006 to September 30, 2010, dated November 7, 2011.

The discount rate used to measure the total pension liability was 6.5 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 the District contributions will be made in accordance with the Board's funding policy adopted in 2012. 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.

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of geometric real rates of return for each major asset class included in the pension plan's target asset allocation as of September 30, 2016 and 2015 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic Equity	22.0%	5.1%
Foreign Equity (Developed)	20.0%	5.0%
Foreign Equity (Emerging)	8.0%	6.9%
Investment Grade Bonds	15.0%	0.2%
Treasury Inflation-Protected Securities (TIPS)	3.0%	1.4%
High Yield Bonds	3.0%	3.7%
Foreign Bonds (Developed)	2.0%	1.0%
Emerging Markets Debt (Local)	2.0%	3.5%
Real Estate	5.0%	4.6%
Infrastructure	2.0%	5.7%
Private Equity	8.0%	7.3%
Hedge Funds	10.0%	3.4%
Total	<u>100.0%</u>	

## Notes to Financial Statements

### NOTE 5: NET PENSION LIABILITY/(ASSET) (continued)

**Disclosure of the sensitivity of the net pension liability to changes in the discount rate** - The following presents the net pension liability of the Plan, for the Teachers' Retirement Fund and the Police Officers and Firefighters' Retirement Fund, respectively, calculated using the discount rate of 6.5 percent, as well as what the Plan's net pension liability calculated using a discount rate that is one percentage point lower (5.5 percent) or one percentage point higher (7.5 percent) than the current rate (dollar amounts in thousands):

FY 2016	1% Decrease (5.50%)	Current Discount Rate (6.50%)	1% Increase (7.50%)
Teachers' Plan's Net Pension Liability	\$ 571,400	\$ 242,189	\$ (36,976)
Police and Firefighters' Plan's Net Pension Liability (Asset)	\$ 532,621	\$ (279,069)	\$ (943,216)

FY 2015	1% Decrease (5.50%)	Current Discount Rate (6.50%)	1% Increase (7.50%)
Teachers' Plan's Net Pension Liability	\$ 598,302	\$ 280,173	\$ 23,315
Police and Firefighters' Plan's Net Pension Liability (Asset)	\$ 698,746	\$ (78,585)	\$ (704,007)

## Notes to Financial Statements

### NOTE 6: CONVERSION TO NEW CUSTODIAN

DCRB elected to transition to a new custodian in fiscal year 2016, ending its relationship with State Street Corporation and transitioning to Northern Trust as of December 1, 2015.

### NOTE 7: RETIREMENT BENEFITS PAYABLE TO U.S. TREASURY

During 2016, the U.S. Treasury completed a calculation of the share of employee contributions (refunds) processed in FY 1999 and 1998 and originally paid by U.S. Treasury. Pursuant to the February 1, 2005, Memorandum of Understanding (MOU) concerning the refunds under the District of Columbia Police Officers and Firefighters', and Teachers' Retirement Programs, the District government and Treasury agreed to begin paying refunds in accordance with its respective statutory responsibilities and that the District would also reimburse Treasury for its share of past refunds. The MOU provides direction for the calculation of the District and Treasury portions of refunds and which records to use for the calculation. The U.S. Treasury requested reimbursement of \$676,330 for the District's share of refunds issued in FY 1999 and FY 1998.

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## FINANCIAL SECTION - REQUIRED SUPPLEMENTARY INFORMATION

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## Schedules of Changes in the Net Pension Liability and Related Ratios

(Dollar amounts in thousands)

Teachers' Retirement Fund	September 30, 2016	September 30, 2015	September 30, 2014
Total pension liability			
Service Cost	\$ 61,599	\$ 53,297	\$ 50,409
Interest	124,370	118,378	112,204
Benefit changes	-	-	-
Difference between expected and actual experience	2,656	(7,246)	-
Changes of assumptions	-	-	-
Benefits payments	(69,093)	(64,076)	(59,832)
Refunds of contributions	(6,205)	(5,576)	(5,790)
Net change in total pension liability	113,327	94,777	96,991
Total pension liability - beginning	1,950,811	1,856,034	1,759,043
Total pension liability - ending (a)	2,064,138	1,950,811	1,856,034
Plan net position			
Contributions - employer	44,469	39,513	31,636
Contributions - member	33,591	31,621	28,751
Net investment income	152,262	(72,647)	132,086
Benefits payments	(69,093)	(64,076)	(59,832)
Administrative expense	(4,746)	(4,543)	(3,787)
Refunds of contributions	(6,205)	(5,576)	(5,790)
Other	1,033	385	522
Net change in plan net position	151,311	(75,323)	123,586
Plan net position - beginning	1,670,638	1,745,961	1,622,375
Plan net position - ending (b)	1,821,949	1,670,638	1,745,961
Net pension liability - ending (a) - (b)	\$ 242,189	\$ 280,173	\$ 110,073
Ratio of plan net position to total pension liability -- (b) / (a)	88.27%	85.64%	94.07%
Covered employee payroll	\$ 438,079	\$ 417,090	\$ 378,926
Net pension liability as a percentage of covered-employee payroll	55.28%	67.17%	29.05%

Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

**Schedules of Changes in the Net Pension Liability and Related Ratios**

(Dollar amounts in thousands)

<b>Police Officers and Firefighters' Retirement Fund</b>	<b>September 30, 2016</b>	<b>September 30, 2015</b>	<b>September 30, 2014</b>
Total pension liability			
Service Cost	\$ 198,020	\$ 192,114	\$ 176,102
Interest	282,285	257,943	235,097
Benefit changes	-	-	-
Difference between expected and actual experience	(106,840)	(2,477)	-
Changes of assumptions	-	-	-
Benefits payments	(79,137)	(63,634)	(52,784)
Refunds of contributions	(2,179)	(1,396)	(1,637)
Net change in total pension liability	292,149	382,550	356,778
Total pension liability - beginning	4,383,413	4,000,863	3,644,085
Total pension liability - ending (a)	4,675,562	4,383,413	4,000,863
Plan net position			
Contributions - employer	136,115	103,430	110,766
Contributions - member	32,785	33,679	32,821
Net investment income	415,157	(187,283)	338,894
Benefits payments	(79,137)	(63,634)	(52,784)
Administrative expense	(12,918)	(11,939)	(9,730)
Refunds of contributions	(2,179)	(1,396)	(1,637)
Other	2,810	1,012	1,342
Net change in plan net position	492,633	(126,131)	419,672
Plan net position - beginning	4,461,998	4,588,129	4,168,457
Plan net position - ending (b)	4,954,631	4,461,998	4,588,129
Net pension liability/(asset) - ending (a) - (b)	\$ (279,069)	\$ (78,585)	\$ (587,266)
Ratio of plan net position to total pension liability -- (b) / (a)	105.97%	101.79%	114.68%
Covered employee payroll	\$ 438,114	\$ 446,201	\$ 426,135
Net pension liability/(asset) as a percentage of covered-employee payroll	-63.70%	-17.61%	-137.81%

Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

**Schedules of Employer Contributions**

(Dollar amounts in thousands)

Teachers' Retirement Fund					
Fiscal Year	Actuarially Determined Employer Contribution	Actual Employer Contributions	Annual Contribution Deficiency (Excess)	Covered Employee Payroll	Actual Contributions as a Percentage of Covered Employee Payroll
2016	\$ 44,469	44,469	\$ -	\$ 438,079	10.15%
2015	39,513	39,513	-	417,090	9.47%
2014	31,636	31,636	-	378,926	8.35%
2013	6,407	6,407	-	369,071	1.74%
2012	-	-	-	381,235	0.00%
2011	-	-	-	384,455	0.00%
2010	-	-	-	337,516	0.00%
2009	-	-	-	336,600	0.00%
2008	6,000	6,000	-	359,100	1.67%
2007	14,600	14,600	-	349,900	4.17%

**Notes to Schedule:**

Valuation Date: Actual contributions are based on valuations as of October 1, two years prior to end of fiscal year in which contributions are reported. Methods and Assumptions used to determine contribution rates for fiscal year 2016 are:

Actuarial cost method	Entry age normal
Amortization method	Level dollar, closed
Remaining amortization period	18 years
Asset valuation method	7-year smoothed market
Inflation	3.50%
Salary increases	4.45% to 8.25%, including wage inflation of 4.25%
Investment rate of return	6.50%, net of pension plan investment expense, and including inflation
Cost of Living Adjustments	3.50% (Limited to 3.0% for those hired after 11/1/1996)

**Schedules of Employer Contributions**

(Dollar amounts in thousands)

Police Officers and Firefighters' Retirement Fund					
Fiscal Year	Actuarially Determined Employer Contribution	Actual Employer Contributions	Annual Contribution Deficiency (Excess)	Covered Employee Payroll	Actual Contributions as a Percentage of Covered Employee Payroll
2016	\$ 136,115	\$ 136,115	\$ -	\$ 438,114	31.07%
2015	103,430	103,430	-	446,201	23.18%
2014	110,766	110,766	-	426,135	25.99%
2013	96,314	96,314	-	413,380	23.30%
2012	116,700	116,700	-	414,877	28.13%
2011	127,200	127,200	-	421,221	30.20%
2010	132,300	132,300	-	423,854	31.21%
2009	106,000	106,000	-	436,100	24.31%
2008	137,000	137,000	-	421,950	32.47%
2007	140,100	140,100	-	396,300	35.35%

**Notes to Schedule:**

Valuation Date: Actual contributions are based on valuations as of October 1, two years prior to end of fiscal year in which contributions are reported. Methods and Assumptions used to determine contribution rates for fiscal year 2016 are:

Actuarial cost method	Entry age normal
Amortization method	Level dollar, closed
Remaining amortization period	18 years
Asset valuation method	7-year smoothed market
Inflation	3.50%
Salary increases	4.45% to 9.25%, including wage inflation of 4.25%
Investment rate of return	6.50%, net of pension plan investment expense, and including inflation
Cost of Living Adjustments	3.50% (Limited to 3.0% for those hired after 11/10/1996)

## Schedule of Investment Returns

### Annual Money-Weighted Rates of Return

	FY 2015	FY 2015	FY 2014
Total portfolio	9.346%	-4.006%	8.178%

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

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**Schedules of Administrative Expenses**

For the years ended September 30, 2016 and 2015

	2016	2015
<b>Personal services</b>		
Salaries	\$6,180,879	\$4,760,425
Fringe benefits	1,318,468	1,301,367
<b>Total personal services</b>	<b>7,499,347</b>	<b>6,061,792</b>
<b>Non-personal services</b>		
Office supplies	99,222	126,214
Telephone	91,324	71,496
Rent	1,753,961	1,634,856
Travel	208,681	206,727
Professional fees	6,378,535	6,225,496
Postage	27,327	29,241
Printing	52,725	14,387
Insurance	150,954	150,693
Dues & memberships	41,177	32,718
Audit costs	62,500	85,500
Actuarial fees	180,000	153,584
Legal fees	337,453	524,213
Investment fees	12,862,522	11,377,263
Contractual services (STAR)	1,697,283	1,077,383
Equipment and rental	375,969	966,527
Depreciation	-	-
<b>Total non-personal services</b>	<b>24,319,633</b>	<b>22,676,298</b>
<b>Total administrative expenses</b>	<b>31,818,980</b>	<b>28,738,090</b>
<b>Investment expenses</b>	<b>(14,154,932)</b>	<b>(12,256,010)</b>
<b>Net administrative expenses</b>	<b>\$17,664,048</b>	<b>\$16,482,080</b>

## Schedules of Investment Expenses

For the years ended September 30, 2016 and 2015

	2016	2015
Investment managers*	\$ 11,811,259	\$ 10,117,761
Investment administrative expense	1,051,263	878,747
Investment consultants	1,017,272	1,030,008
Investment custodian	275,138	229,494
<b>Total investment expenses</b>	<b>\$ 14,154,932</b>	<b>\$ 12,256,010</b>

\*Fees paid to traditional investment managers only; traditional investment managers are those that invest primarily in public equity and fixed income securities. A significant number of alternative investments are presented net of expenses. Management expenses are netted against investment income and because they are not readily separable from specific investment income as of the financial statement reporting date, amounts are recorded and reported net of management expenses and therefore are not included on this schedule.

**Schedules of Payments to Consultants**

For the years ended September 30, 2016 and 2015

Professional/Consultant	Nature of Service	FY 2016	FY 2015
<b>Administrative Consultants</b>			
Software Information Resource Corp.	Information technology consulting	\$ 1,731,030	-
U.S. Treasury Office of D.C. Pensions	Benefit payment processing	1,220,209	1,077,383
Mobomo, LLC	Information technology consulting	760,125	809,190
Morgan, Lewis & Bockius	Legal counsel	323,739	410,882
Softech & Associates, Inc.	Information technology consulting	248,000	242,000
Ectam, LLC	Information technology consulting	236,880	213,485
D.C. Office of the Chief Technology Officer	Information technology consulting	228,000	228,000
Cavanaugh Macdonald Consulting	Actuarial services	194,655	121,147
Managed Frameworks, LLC	Information technology consulting	179,057	195,772
DLT Solutions, Inc.	Information technology consulting	175,915	87,507
Midtown Personnel Inc.	Benefits consulting	168,261	80,858
Business Development Associates, LLC	Information technology consulting	157,541	38,789
D.C. Department of Human Resources	Information technology consulting	136,607	137,859
Analytica LLC	Information technology consulting	128,338	-
Intuitive Technology Group, LLC	Information technology consulting	118,724	37,802
Gartner, Inc.	Information technology consulting	116,898	102,193
Mark Jackson	Information technology consulting	106,630	98,673
FireEye, Inc.	Information technology consulting	105,283	-
Yared Desta	Information technology consulting	99,912	88,858
TW Telecom	Information technology consulting	97,658	89,548
IT-CNP, Inc..	Information technology consulting	94,802	-
Equinix, Inc.	Information technology consulting	94,393	79,158
Networking for Future, Inc.	Information technology consulting	73,672	471,745
Vonage Business formerly Icore Networks, Inc.	Information technology consulting	63,681	56,642
Clifton Larson Allen	Financial audit	62,500	85,500
National Associates, Inc.	Benefits consulting	61,130	3,868
RSM US LLP formerly RSM McGladrey, Inc.	Financial system consulting	47,582	62,200
Katharine A. Schultz	Executive consultant	45,072	-
Steven Van Rees	Operations consultant	43,650	-
ASI Government, Inc.	Temporary staffing services	40,934	152,006
Capitol Document Solutions	Information technology consulting	40,239	32,481
Newlin LLC	Accounting & audit consulting	39,071	79,605
HBP, Inc.	Graphic design for publications	38,693	13,993
Avitecture	Information technology consulting	37,198	104,472
Diligent Corp	Information technology consulting	31,575	35,225
CEM Benchmarking, Inc.	Investment consultant	30,000	-
DC Net	Information technology consulting	28,985	-

(Continued on next page)

Professional/Consultant	Nature of Service	FY 2016	FY 2015
eVestment Alliance	Online Investment service	22,932	21,840
Advent Software, Inc.	Investment consulting	20,538	-
Sebastian Podesta	Professional services	18,893	39,095
Project Made Easy	Information technology consulting	17,400	-
ZixCorp Systems, Inc.	Information technology consulting	16,575	18,663
Kofax, Inc.	Information technology consulting	16,562	15,670
Groom Law Group	Legal counsel	13,159	113,017
American Arbitration Association	Arbitration services	12,918	-
InfoLock Technologies	Information technology consulting	10,090	48,758
Corporate Investigations, Inc.	Professional services	8,468	8,965
Human Resources Technologies, Inc.	Information technology consulting	7,958	14,469
Tecknomic LLC	Information technology consulting	7,316	-
Exemplis LLC	Professional services	6,117	-
The Newberry Group, Inc.	Information technology consulting	5,451	38,716
Shaquja Clark	Executive consultant	3,736	-
Clayton Gordon	Information technology intern	3,325	-
ImageTag, Inc.	Information technology consulting	3,000	-
Syed-Mohd Nasib Hafeez	Information technology consulting	2,656	-
Carlson Dettmann LLC	Information technology consulting	2,450	-
William Harris	Information technology consulting	2,223	-
RaeShawn White	Benefits intern	1,356	-
Brea Grisham	Benefits intern	1,002	-
John Siegmund	Investment intern	894	-
Armstrong Teasdale	Legal counsel	555	-
Linea Solutions, Inc.	Business process re-engineering	-	506,241
Tony Phan	Information technology consulting	-	173,280
AON Consulting	Insurance consulting	-	141,556
MVS, Inc.	Professional services	-	140,422
Worldwide Staffing Exchange	Information technology consulting	-	81,963
D.C. Metropolitan Police Dept	Information technology consulting	-	65,580
Leslie Randle	Information technology consulting	-	61,040
Christina Lipscombe	Information technology consulting	-	57,898
Valsatech	Information technology consulting	-	38,198
Telecommunications Development Corp	Information technology consulting	-	37,280
Cheiron, Inc.	Actuarial auditing services	-	37,000
Document Access Systems	Information technology consulting	-	34,900
Document Management Solutions	Information technology consulting	-	19,225
True Ballot, Inc.	Board elections	-	18,118
SHI International Corporation	Information technology consulting	-	16,973
<b>Total administrative consultants</b>		<b>7,612,213</b>	<b>6,985,704</b>

(Continued on next page)

Professional/Consultant	Nature of Service	FY 2016	FY 2015
<b>Investment Consulting</b>			
Cliffwater, LLC	Traditional investment consulting	525,006	682,508
Meketa Investment Group	Traditional investment consulting	403,334	290,000
Insightful Pension Consulting Group, LLC	Investment consultant	53,932	-
Zeno Consulting Group, LLC	Traditional investment consulting	35,000	57,500
<b>Total investment consultants</b>		<b>1,017,272</b>	<b>1,030,008</b>
<b>Total payments to consultants</b>		<b>\$8,629,485</b>	<b>\$8,015,713</b>

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## Report on Investment Activity

Prepared by Sheila Morgan-Johnson, Chief Investment Officer

### Introduction

DCRB (or the “Board”) manages and controls the Fund. The Board is charged by law with responsibility for investing these assets that support the District of Columbia Teachers’ Retirement Plan and the District of Columbia Police Officers and Firefighters’ Retirement Plan, which are defined benefit pension plans. The Board retains the services of an independent investment consultant who possesses specialized experience and resources in asset allocation, investment strategy, and investment manager selection. The Board’s traditional investment managers acknowledge their fiduciary responsibility in writing. Investment managers are accorded full discretion within general and specific investment manager policy guidelines.

### Investment Objectives and Policies

The Board targets investment returns that meet or exceed the actuarial investment return target at a level of risk commensurate with the target return and consistent with prudent investment practices. The current actuarial investment return target is 6.5%, net of investment management fees and administrative expenses. In addition to meeting or exceeding the actuarial return target over the long-term, a secondary return objective is to exceed the annualized total return of the Board’s strategic asset allocation benchmark (the “Long-Term Policy Benchmark”).

As of September 30, 2016, the Long-Term Policy Benchmark included the following components:

Asset Class	Performance Benchmark	Weight
Fixed Income	Fixed Income Benchmark <sup>1</sup>	27%
U.S. Equities	Russell 3000 Index	21%
International Developed Markets Equities	MSCI World Index ex-U.S. (net)	18%
Emerging Markets Equities	MSCI Emerging Markets Index (net)	9%
Absolute Return	3-Month LIBOR + 5%	10%
Private Equity	MSCI All-Country World Index+3% (quarter lag)	8%
Real Assets	CPI-U + 5.5%	7%
<b>Total</b>		<b><u>100%</u></b>

As a long-term investor, the Board believes that it can generate the highest risk-adjusted returns through a diversified portfolio with an emphasis on equity investments. Although equities are generally more volatile than other asset classes in the short-term, if properly diversified, they are expected to yield higher total returns over the Fund’s multi-decade time horizon. In addition, while the Board generally believes in the value of active management, it utilizes lower-cost passive investment strategies (e.g., index funds) in more efficient markets where active managers have a lower likelihood of generating excess returns.

<sup>1</sup> The Fixed Income Benchmark is a composite of 49% BC U.S. Aggregate Index, 15% BC U.S. TIPS Index, 11% BC U.S. High-Yield Constrained Index, 11% CSFB Levered Loan Index; 7% BC Global Aggregate ex U.S. Index, and 7% JPM GBI-EM Global Diversified Index.

## Report on Investment Activity

### Fiscal Year 2016 Global Market Review

Most investor concerns from fiscal year 2015 continued into the early part of fiscal year 2016. They include: unresolved geopolitical issues, the slowdown of the Chinese economy, and falling commodity prices. Combined with sluggish economic growth, this uncertainty translated into another period of substantial volatility. In spite of this, the fiscal year produced strong returns across both debt and equity markets, in the U.S. and abroad.

The first fiscal quarter (October 1, 2015 through December 31, 2015) brought about a recovery from the market declines during the prior three months, with U.S. and international developed equity markets up 7.0% and 4.7%, respectively. The second fiscal quarter (January 1, 2016 through March 31, 2016) delivered another steep decline followed by a massive rally, with the U.S. and international developed equity markets being flat and emerging markets equities gaining 5.7%. There was no clear catalyst for the turnaround, although the European Central Bank announced further quantitative easing and the Federal Reserve indicated a delay in future rate increases, which investors turned into a “risk-on” event.

Following the “Brexit” (the United Kingdom’s withdrawal from the European Union) decision in June 2016, there was broad sell-off, but markets bounced back quickly to near pre-referendum levels. U.S. equity markets were up 2.5% while international developed and emerging markets were relatively flat. In addition, oil and gas prices continued to recover, benefitting energy and commodity stocks. The final quarter of the fiscal year (July 1, 2016 through September 30, 2016) delivered strong global equity returns, with U.S. equities finishing up 4.4%, international developed markets up 6.3%, and emerging markets equities up 9.0%. In a reversal to earlier quarters, investors once again embraced riskier assets.

In terms of cumulative returns for the fiscal year ending September 30, 2016, the Russell 3000 Index, which measures the performance of the 3,000 largest U.S. companies and represents approximately 98% of the U.S. equity market, rose by 15.0%. International developed equity markets, as measured by the MSCI World ex U.S. Index, increased by 7.2%, while emerging markets, as measured by the MSCI Emerging Markets Index, advanced 16.8%. The Barclays Capital U.S. Aggregate Bond Index, a broad measure of U.S. fixed income markets, rose by 5.2%, driven by a moderate decline in U.S. interest rates.

### Fiscal Year 2016 Investment Results

As of September 30, 2016, the Fund’s total assets stood at \$6.8 billion after the payment of all benefits and administrative expenses, an increase of approximately \$645 million compared to the end of the prior fiscal year. The Fund generated a net return of 9.3%, underperforming the Interim Policy Benchmark (an appropriate comparison for periods of 5 years or less) by 0.8%. Since its inception in October 1982, the Fund has underperformed the Long-Term Policy Benchmark by roughly 1.0% per year, but has exceeded the actuarial return target by approximately 2.0% per year, net of fees.

Of the total underperformance during fiscal year 2016, 0.5% (71% of total) came from active manager underperformance, with the absolute return, high-yield fixed income, and developed international small-cap equity funds being the primary detractors. The remaining 0.2% (29% of total) underperformance was driven by the Fund’s asset allocation. Key detractors were overweight positions in international developed equities, fixed income, and cash.

Exhibit 1 shows the gross returns for the Fund and each asset class over the one, three, five, and ten-year time periods ending September 30, 2016. The returns were calculated by the Board’s custodial bank, The Northern Trust Company (“Northern Trust”) and are time-weighted returns computed in compliance with the CFA Institute’s Global Investment Performance Standards (GIPS). Benchmark returns for each asset class are presented below for relative performance comparison purposes.

## Report on Investment Activity

### Exhibit 1: Investment Performance (Gross of Fees)

as of September 30, 2016

Asset Class	1-Year	3-Year	5-Year	10-Year
<b>Total Fund</b>	<b>9.4%</b>	<b>4.5%</b>	<b>7.8%</b>	<b>4.6%</b>
<i>Interim Policy Benchmark<sup>1</sup></i>	10.1%	4.7%	7.7%	-
<i>Long-Term Policy Benchmark<sup>2</sup></i>	-	-	8.1%	4.7%
<b>Cash and Cash Equivalents</b>	<b>0.6%</b>	<b>0.5%</b>	<b>0.5%</b>	<b>1.3%</b>
<i>3-month U.S. Treasury Bills</i>	0.3%	0.1%	0.1%	0.9%
<b>Fixed Income</b>	<b>7.1%</b>	<b>2.5%</b>	<b>2.9%</b>	<b>4.4%</b>
<i>Fixed Income Benchmark<sup>3</sup></i>	7.9%	3.1%	2.8%	4.6%
<b>U.S. Equities</b>	<b>14.6%</b>	<b>10.1%</b>	<b>16.5%</b>	<b>7.4%</b>
<i>Russell 3000 Index</i>	15.0%	10.4%	16.4%	7.4%
<b>International Developed Markets Equities</b>	<b>8.0%</b>	<b>1.5%</b>	<b>7.8%</b>	<b>3.2%</b>
<i>MSCI World Index ex U.S.(net)</i>	7.2%	0.3%	6.9%	2.7%
<b>Emerging Markets Equities</b>	<b>16.5%</b>	<b>-0.6%</b>	<b>3.1%</b>	<b>-</b>
<i>MSCI Emerging Markets Index (net)</i>	16.8%	-0.6%	3.0%	-
<b>Absolute Return</b>	<b>-5.8%</b>	<b>0.1%</b>	<b>0.8%</b>	<b>6.6%</b>
<i>HFR Fund-Weighted Composite</i>	4.9%	3.2%	4.4%	-
<i>3-Month LIBOR+5%<sup>4</sup></i>	-	-	3.3%	2.6%
<b>Private Equity</b>	<b>0.4%</b>	<b>8.7%</b>	<b>8.2%</b>	<b>7.5%</b>
<i>Cambridge Associates Global PE &amp; VC Index<sup>5</sup></i>	2.9%	11.7%	10.2%	-
<i>MSCI All Country World Index+3% (quarter lag)<sup>6</sup></i>	-	-	8.5%	6.6%
<b>Real Assets</b>	<b>13.7%</b>	<b>10.1%</b>	<b>-</b>	<b>-</b>
<i>CPI+5.5%</i>	7.0%	6.5%	-	-

<sup>1</sup> As of 9/30/16, the Interim Policy Benchmark is a composite of 23.9% Russell 3000 Index, 20.5% MSCI World Index ex U.S. (net), 10.3% MSCI Emerging Markets (net); 13.3% Barclays U.S. Aggregate Index, 3.4% Barclays U.S. Corporate High Yield Index, 3.3% Credit Suisse Leveraged Loan Index, 2.2% Barclays Global Aggregate ex US Index, 3.3% JPM GBI-EM Global Diversified Index, 4.7% Barclays U.S. TIPS Index, 4.0% HFR Fund-Weighted Composite, 4.5% Cambridge Associates Global Private Equity and Venture Capital Index, 2.2% FTSE EPRA NAREIT Global Index, 1.8% Cambridge Associates Real Estate Index, 0.7% Cambridge Associates Upstream Energy & Royalties and Private Equity Energy Index, 1.8% Cambridge Associates Infrastructure Index.

<sup>2</sup> As of 9/30/16, the Long-Term Policy Benchmark is a composite of 21% Russell 3000 Index, 18% MSCI World Index ex U.S. (net), 9% MSCI Emerging Markets (net); 12% Barclays U.S. Aggregate Index, 3% Barclays U.S. Corporate High Yield Index, 3% Credit Suisse Leveraged Loan Index, 2% Barclays Global Aggregate ex US Index, 3% JPM GBI-EM Global Diversified Index, 4% Barclays U.S. TIPS Index, 10% 3-Month LIBOR+5%, 8% MSCI ACWI + 3%, 7% CPI + 5.5%.

<sup>3</sup> The Fixed Income Benchmark is a composite of 49% Barclays U.S. Aggregate Index, 15% Barclays U.S. TIPS Index, 11% Barclays U.S. High-Yield Constrained Index, 11% Credit Suisse Levered Loan Index; 7% Barclays Global Aggregate ex U.S. Index, and 7% JPM GBI-EM Global Diversified Index.

<sup>4</sup> Prior to 9/30/13, 3-month LIBOR.

<sup>5</sup> Prior to 12/31/07, Cambridge Associates U.S. Private Equity & Venture Capital Index.

<sup>6</sup> Prior to 12/31/07, Russell 3000+3% (quarter lag).

Note: All returns are time-weighted and gross of fees.

## Report on Investment Activity

### Exhibit 2: Historical Investment Performance

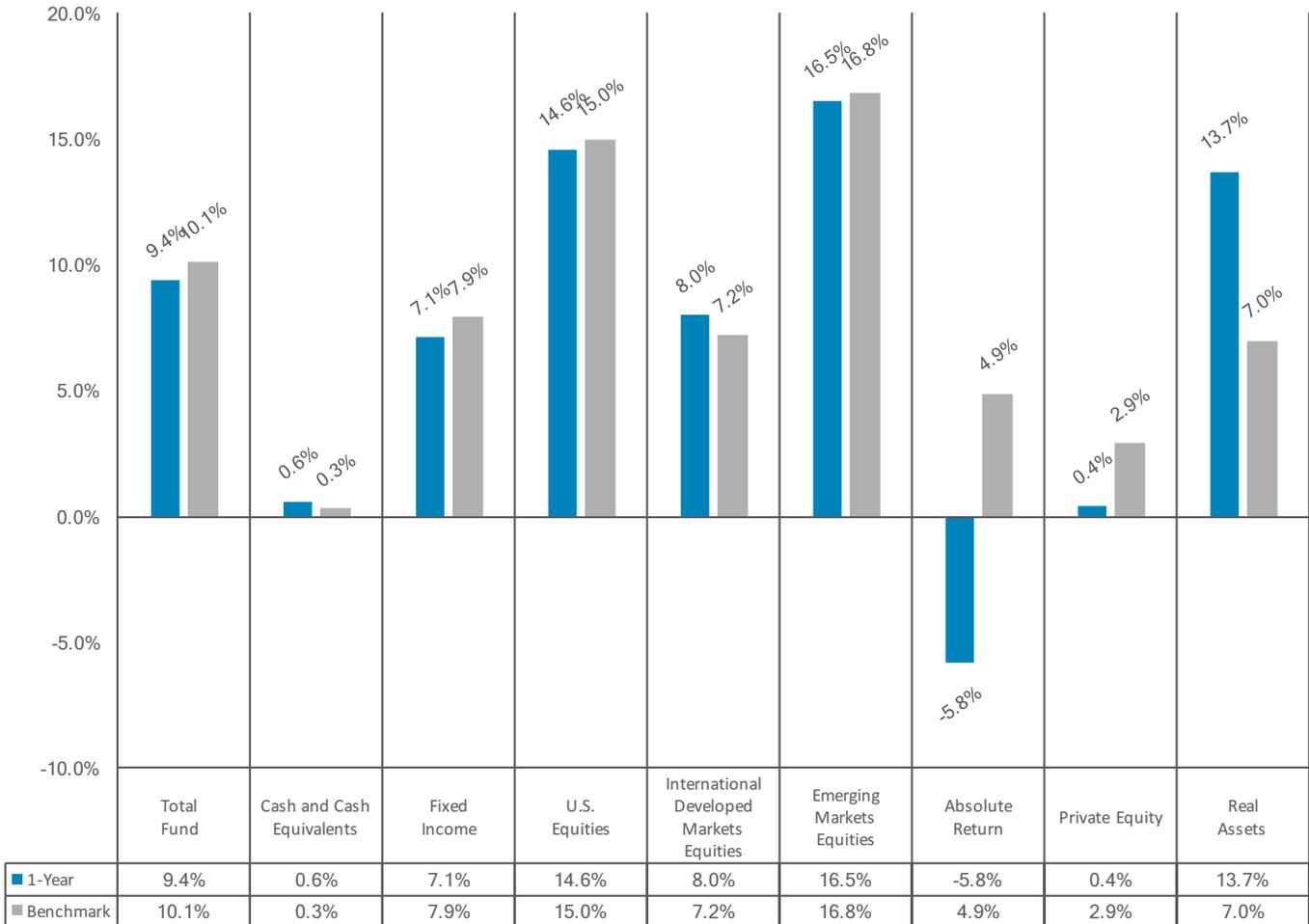
As of September 30, 2016



## Report on Investment Activity

### Exhibit 3: 1-Year Performance vs. Benchmark

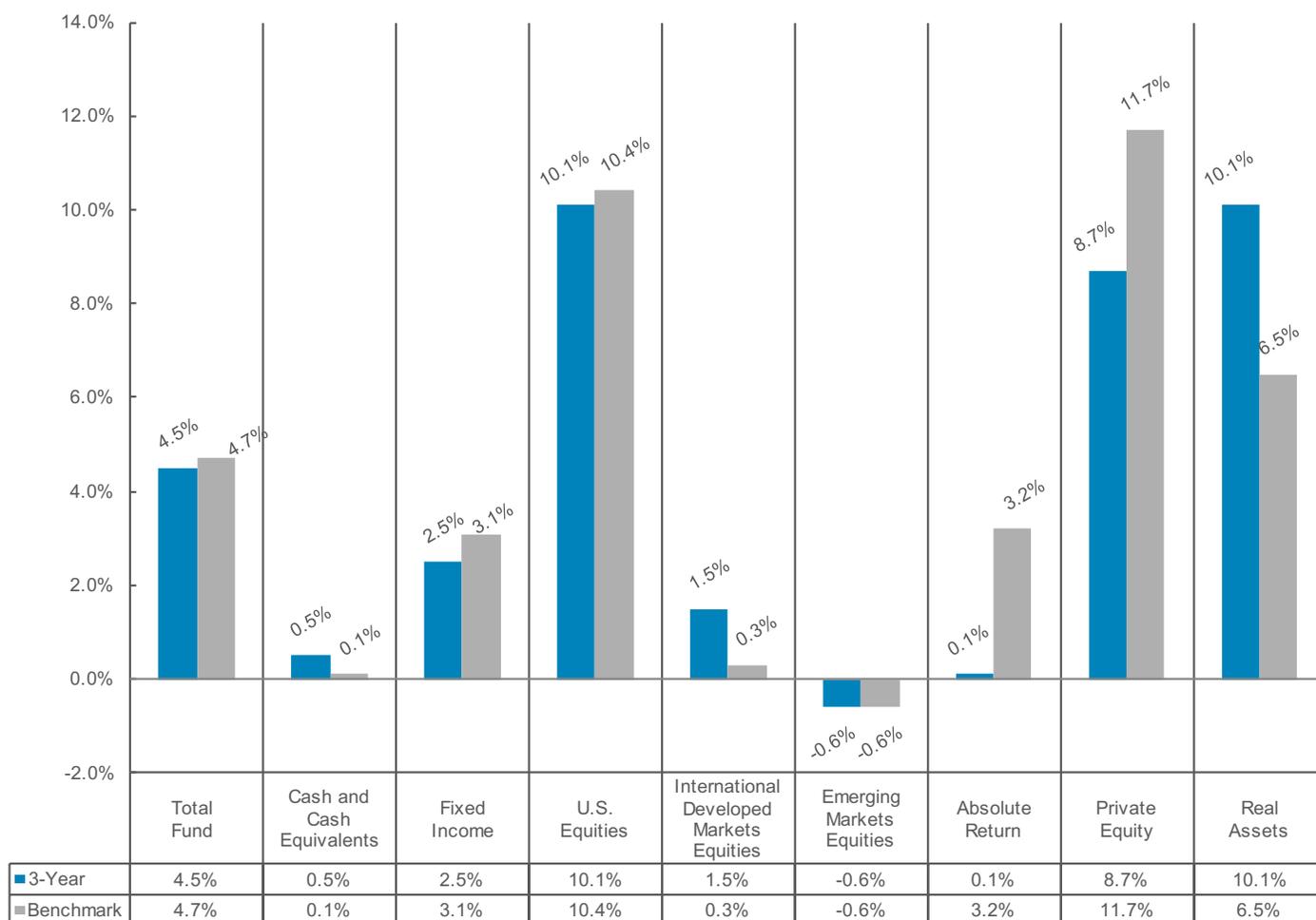
As of September 30, 2016



## Report on Investment Activity

### Exhibit 4: 3-Year Performance vs. Benchmark

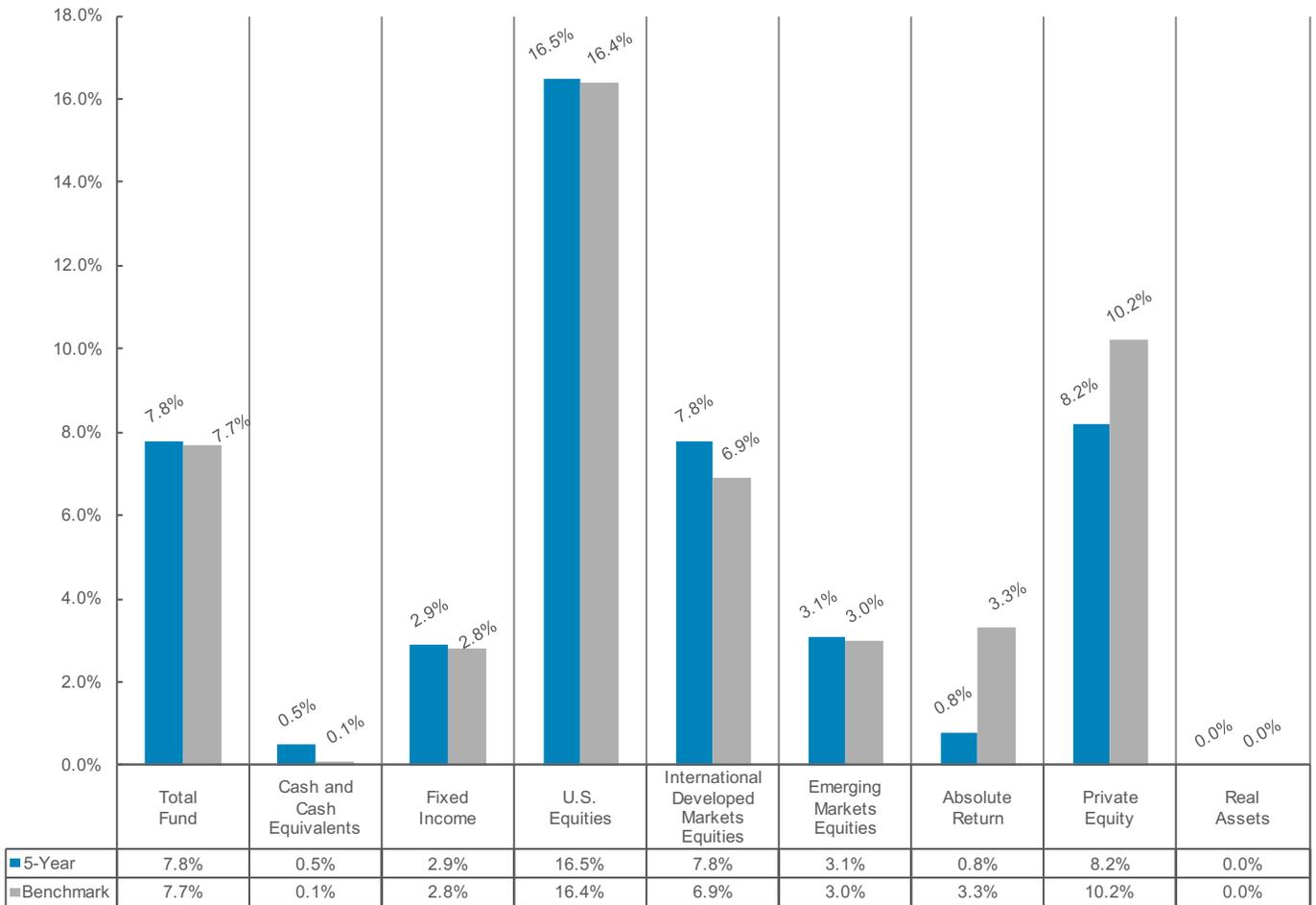
As of September 30, 2016



## Report on Investment Activity

### Exhibit 5: 5-Year Performance vs. Benchmark

As of September 30, 2016



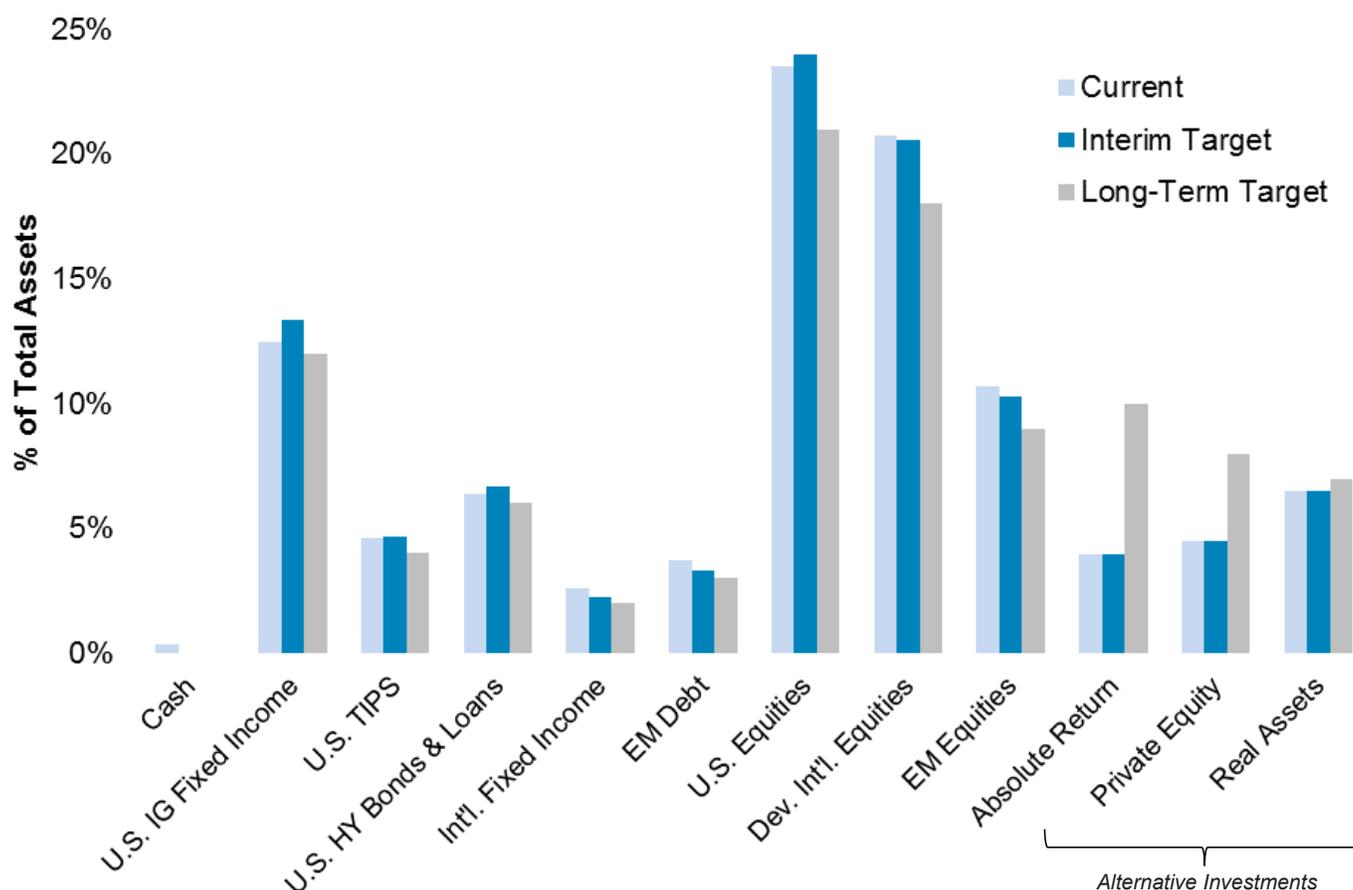
## Report on Investment Activity

### Asset Allocation

There were no changes to the strategic asset allocation during the fiscal year. In November 2016, the Board reviewed the asset allocation structure and approved new targets, with the primary changes being an increase in private equity and real assets targets and a decrease in the absolute return target.

The Interim Policy target distributes the underweight to alternative investments (absolute return, private equity, and real assets) across the traditional investments (fixed income and public equities) in line with the Fund's Long-Term Policy target. The Actual, Interim and Long-Term Policy allocations are shown in Exhibit 6

**Exhibit 6: Actual, Interim Target and Policy Asset Allocations as of September 30, 2016**



As of September 30, 2016, the Fund's asset classes were within their respective target allocation ranges with the exception of the Absolute Return program, which continued to be below the targeted minimum. As discussed, this underweight was re-allocated to fixed income and public equities.

The underweight in private equity is driven by a deliberate, measured pace of new commitments and a high volume of realizations from more mature funds over the last few years. The current underweight should moderate by 2020-22, as new funds draw down capital and mature funds reduce distributions. In the meantime, the Board is focused on a consistent pace of new commitments, subject to the availability of compelling opportunities, strong fit with the existing portfolio, and attractive market characteristics.

## Report on Investment Activity

### Other Updates

During fiscal year 2016, the Board completed the transition to a new custodial bank and investment consultant.

Northern Trust became the Board's new custodial bank on December 1, 2015. The decision to hire Northern Trust followed a thorough review of custody bank service providers during the prior fiscal year. There were no operational issues during the transition due to the collaboration of many parties, including the new and prior custodial banks, investment consultants, and DCRB staff.

Meketa Investment Group began serving as the Board's consultant across all asset classes on August 1, 2016. The Board hired Meketa as its general investment consultant (for public markets) in February 2010 and expanded the mandate to include alternative investments (absolute return, private equity, and real assets) last summer. Cliffwater's (the Board's prior alternative investments consultant) relationship with the Board ended July 31, 2016.

In addition, the Board enhanced diversification by hiring a new active manager, Beach Point Capital Management, to focus on U.S. bank loans. Within the alternative investments program, the Board committed a total of \$195 million to nine new private equity and real assets limited partnerships, including funds focused on Canadian buyouts, U.S. growth equity and small buyouts, as well as opportunistic real estate investments in the U.S. and Western Europe.

Further, DCRB staff and consultant have continued the incorporation of the Environmental, Social, and Governance (ESG) policy, passed in November 2013, into the investment and operational due diligence process. This will continue to be a focus when evaluating prospective and existing investment managers in fiscal year 2017.

A second major initiative in fiscal year 2017 will be the implementation of a new strategic asset allocation, which was approved by the Board in November 2016, following the end of the last fiscal year.

### Investment Activity Summary

During fiscal year 2016, the Board implemented the following investment service provider changes:

#### Additions:

- Beach Point Capital Management – *Bank Loans*
- Northern Trust – *Custodial Bank*
- Meketa Investment Group – *Investment Consultant*

#### Terminations:

- Cliffwater – *Alternative Investments Consultant*
- State Street Bank and Trust – *Custodial Bank*

## Report on Investment Activity

### List of Largest Holdings

Top 10 Fixed Income Holdings (Dollar amounts in thousands)						
Rank	Security Name	Moody's Quality Rating	Par Value	Interest Rate (%)	Maturity Date	Fair Value
1	HRG GROUP INC	Caa1	\$ 10,929	7.75	01/15/2022	\$ 11,325
2	FORESIGHT ENERGY LLC / FORESIGHT	n/a	\$ 10,795	10.00	08/15/2021	\$ 9,689
3	AF BORROWER LLC TERM LOAN (SECOND LIEN)	n/a	\$ 8,100	0.00	12/15/2022	\$ 7,989
4	GENOA HEALTHCARE GROUP LLC TERM LOAN	Caa1	\$ 7,060	0.00	04/28/2023	\$ 7,060
5	ASURION, LLC (FKA ASURION CORPORATION)	Caa1	\$ 7,050	0.00	03/03/2021	\$ 6,995
6	RCN TELECOM SVCS LLC / RCN CAP	Caa1	\$ 6,510	8.50	08/15/2020	\$ 6,941
7	REAL ALLOY HLDG INC	B3	\$ 6,470	10.00	01/15/2019	\$ 6,535
8	CENTURY ALUM CO SR SECD NT	B3	\$ 6,870	7.50	06/01/2021	\$ 6,320
9	ANCESTRY COM HLDGS LLC	WR	\$ 6,110	9.63	10/15/2018	\$ 6,186
10	HEARTLAND DENTAL PLAN INC SECOND LIEN	Caa2	\$ 6,140	0.00	06/21/2019	\$ 5,987

Top 10 Public Equity Holdings (Dollar in thousands)			
Rank	Security Name	Shares	Market Value
1	Visa Inc.	\$ 141,300	\$ 11,686
2	Facebook, Inc.	88,100	11,301
3	Amazon.com, Inc.	9,800	8,206
4	Salesforce.com, Inc.	112,700	8,039
5	The Priceline Group Inc.	5,100	7,505
6	Alibaba Group Holding Limited	64,200	6,792
7	Alphabet Inc.	7,700	6,191
8	Adobe Systems Incorporated	51,700	5,612
9	IBERIABANK Corporation	73,842	4,956
10	Belden Inc.	70,108	4,837

A complete list of portfolio holdings is available upon request.

## Report on Investment Activity

### Schedule of Fees and Commissions

During fiscal year 2016, the Board paid the following fees and commissions:

Expense Category	Amount (Dollars in thousands)	Percent of Fund
Investment Managers*	\$ 11,811,259	0.174%
Investment Consultants	1,017,272	0.015
Investment Administrative Expense	1,051,263	0.016
Investment Custodian	275,138	0.004
Brokerage Commissions**	847,098	0.012
<b>Total</b>	<b>\$ 15,002,029</b>	<b>0.221%</b>

\* Includes fees paid to traditional investment managers only. Traditional investment managers are those that invest primarily in public equity and fixed income securities.

\*\* Includes separate account and commingled fund relationships.

Total	Total Shares Traded	Total Commission (Dollar Value)	Commission (Costs Per Share)	Commission (Basis Points)	Number of Trades	Trade Value (Dollars in millions)
Channing Capital Management	2,102,100	\$ -63,611	-3	-9	373	\$ 68
Sands Capital Management	779,789	-14,259	-1.8	-2	232	79
Copper Rock International	32,329,095	-276,921	-0.9	-13	3,005	211
LSV Emerging Markets	39,828,062	-16,444	0	-6	1,968	29
Northern Trust R3000	64,597,544	-108,085	-0.2	-1	31,579	1,936
Northern Truist Global REIT	556,136	-2,740	-0.5	-2	2,197	16
Altrinsic	7,850,662	-116,189	-1.5	-15	407	78
State Street Global Advisors-CAD	467,157	-2,750	-0.6	-3	666	11
State Street Global Advisors-EAFE	30,129,345	-61,959	-0.2	-2	8,549	249
State Street Global Advisors-EM	191,874,834	-184,140	-0.1	-6	10,121	324
<b>Total</b>	<b>370,514,724</b>	<b>\$ (847,098)</b>	<b>-0.2</b>	<b>-3</b>	<b>59,097</b>	<b>\$ 3,002</b>

## Report on Investment Activity

### Investment Summary

(Dollar amounts in thousands)

Asset Class	Fair Value	% of Fund
Cash and Cash Equivalents	\$ 29,597	0.4%
Fixed Income	2,014,480	29.7%
U.S. Equities	1,592,679	23.5%
International Developed Markets Equities	1,403,989	20.7%
Emerging Markets Equities	725,123	10.7%
Absolute Return	269,804	4.0%
Private Equity	303,045	4.5%
Real Assets	440,136	6.5%
<b>Total</b>	<b>\$ 6,778,853</b>	<b>100.0%</b>

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## Independent Actuary's Certification Letter



### Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

December 20, 2016

The Board of Trustees  
District of Columbia Retirement Board  
900 7th Street, NW, 2nd Floor  
Washington, DC 20001

Dear Trustees:

We are pleased to submit the results of the annual actuarial valuations of the District of Columbia Retirement Board Teachers' Retirement Plan and Police Officers & Firefighters' Retirement Plan, prepared as of October 1, 2016.

The purpose of this report is to provide a summary of the funded status of each Plan as of October 1, 2016, and to recommend rates of contribution to be paid by the District in the 2018 fiscal year. The information needed for this Plan under the new Governmental Accounting Standards Board Statement No. 67 was provided in a separate report. However, for informational purposes only, we have also provided accounting information under GASB 25 and 27 in Section VII of the report. While not verifying the data at source, the actuary performed tests for consistency and reasonability.

The promised benefits are included in the actuarially calculated contribution rates which are developed using the entry age normal cost method. Seven-year smoothed market value of assets is used for actuarial valuation purposes. The assumptions recommended by the actuary and adopted by the Board are reasonably related to the experience under the Fund and to reasonable expectations of anticipated experience under the Fund.

The funding policy adopted by the Board in 2012 includes the following funding goals:

- To maintain an increasing or stable ratio of Plan assets to actuarial accrued liabilities and reach a 100 percent minimum funded ratio;
- To develop a pattern of stable or declining contribution rates when expressed as a percentage of member payroll as measured by valuations prepared in accordance with the principles of practice prescribed by the Actuarial Standards Board, with a minimum employer contribution equal to the lesser of the normal cost determined under the Entry Age Normal funding method or the current active member contribution rate.

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## Independent Actuary's Certification Letter

December 20, 2016  
The Board of Trustees  
Page 2

The funding policy not only states the overall funding goals and benchmarks for the Plan, but sets the methods and assumptions. The level dollar amortization period was set to 20 years in 2012 and will decline one year each year until a funded ratio of 100 percent is reached. Therefore, the amortization period this year is 16 years.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

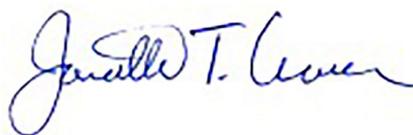
The undersigned are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,



Edward J. Koebel, EA, FCA, MAAA  
Principal and Consulting Actuary



Jonathan T. Craven, ASA, EA, FCA, MAAA  
Senior Actuary

EJK/JTC:kc

## Outline of Actuarial Assumptions and Methods

**(Demographic assumptions adopted on October 20, 2011)**

**(Economic assumptions adopted on November 15, 2012)**

**Valuation date:** All assets and liabilities are computed as of October 1, 2016. Demographic information was collected as of June 30, 2016.

**Investment rate of return:** 6.50% per annum, compounded annually (net of investment expenses).

**Inflation assumption:** 3.50% per annum.

**Payroll growth assumption:** 4.25% per annum.

**Percent married:** 64% of Teachers are assumed to be married and 80% of Police Officers and Firefighters are assumed to be married, with spouses assumed to be three (3) years apart in age. Active members are assumed to have one dependent child aged 10.

**Actuarial method:** Entry Age Normal Cost Method. The amortization of the unfunded actuarial accrued liability uses a level dollar basis.

**Assets:** The method of valuing assets is intended to recognize a “smoothed” market value of assets. Under this method, the difference between actual return on market value from investment experience and the expected return on market value is recognized over a seven-year period. The actuarial value of assets is constrained to an 80% to 120% corridor around market value of assets. In addition, there is an adjustment made for the effect of the adjustment pursuant to D.C. Code §1-907.02(c).

**Withdrawal assumption:** For Teachers, it was assumed that 35% of the vested members who terminate elect to withdraw their contributions while the remaining 65% elect to leave their contributions in the Plan in order to be eligible for a benefit at their retirement date. For Police Officers and Firefighters, it was assumed that 80% of the vested members who terminate elect to withdraw their contributions while the remaining 20% elect to leave their contributions in the plan.

**Other assumptions:** To value the pre-retirement death benefit for Police Officers and Firefighters, the benefit form for all retirements (normal or disabled) is assumed to be a 67.8% Joint and Survivor Annuity for all participants (based on 40% of average pay survivor benefits). One-fourth of all Police Officer and Firefighter active deaths are assumed to occur in the line of duty.

**Cost of living adjustment (COLA):** The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 3.5% per year.

**Military service:** All Police and Fire members assumed to have 0.40 years of military service at retirement.

**Administrative expenses:** Budgeted administrative expenses of 1.20% of payroll are added to the normal cost rate.

## Outline of Actuarial Assumptions and Methods

### Teachers

**Salary Increases:** Representative values of the assumed annual rates of future salary increases are as follows and include inflation at 4.25% per annum:

Pay Increase Assumptions for an Individual Member			
Years of Service	Merit & Seniority	Inflation & Productivity (Economy)	Total Increase (Next Year)
5	4.00%	4.25%	8.25%
10	3.00	4.25	7.25
15	0.50	4.25	4.75
20	0.20	4.25	4.45
25	0.20	4.25	4.45
30	0.20	4.25	4.45
35	0.20	4.25	4.45

**Separations From Active Service:** Representative values of the assumed annual rates of withdrawal, service retirement, and disability are shown in the following tables:

Percent of Members Separating Within the Next Year						
Sample Ages	Withdrawal			Service Retirement		Disability Retirement
	0 to 3 yrs of service	4 to 9 yrs of service	10 & up yrs of service	Under 30 yrs service	30 & up yrs service	
20	25.00%	20.00%	-	-	-	0.03%
25	23.50	20.00	-	-	-	0.03
30	22.00	16.00	3.75%	-	-	0.05
35	20.50	14.00	3.75	-	-	0.07
40	19.00	12.00	3.75	-	-	0.09
45	17.50	10.00	3.75	-	-	0.15
50	16.00	10.00	3.75	2.50%	2.50%	0.22
55	14.50	10.00	3.75	6.00	33.00	0.32
60	13.00	10.00	3.75	27.00	25.00	0.40
62	-	-	-	25.00	25.00	-
65	-	-	-	20.00	25.00	-
70	-	-	-	30.00	30.00	-
71	-	-	-	25.00	40.00	-
75	-	-	-	100.00	100.00	-

**Mortality:** The RP-2000 Combined Mortality Table projected with Scale AA to 2015, set back 3 years for females is used for healthy active members, retirees, and beneficiaries. The RP-2000 Disabled Mortality Table set back 1 year for males and set back 5 years for females is used for disabled retirees. Mortality improvement is anticipated under these assumptions as recent mortality experience shows actual deaths are approximately 7-8% greater for healthy lives and 9% greater for disabled lives than expected under the selected tables.

## Outline of Actuarial Assumptions and Methods

### Police Officers

**Salary Increases:** Police Officers are assumed to receive a longevity increase of 5%, 10%, 15%, and 20% applied to individual base pay after 15, 20, 25, and 30 years of service, respectively. These are approximated by increases of 3.5% to final average salary. Representative values of the assumed annual rates of future salary increases before longevity increases are as follows and include inflation at 4.25% per annum:

Pay Increase Assumptions for an Individual Member			
Years of Service	Merit & Seniority	Inflation & Productivity (Economy)	Total Increase (Next Year)
5	3.56%	4.25%	7.81%
10	2.58	4.25	6.83
15	2.31	4.25	6.56
20	2.50	4.25	6.75
25	1.10	4.25	5.35
30	0.50	4.25	4.75
35	-	4.25	4.25

**Separations from Active Service:** Representative values of the assumed annual rates of withdrawal, service retirement, and disability are shown in the following tables:

Percent of Members Separating Within the Next Year						
Sample Ages	Withdrawal (3 years of service & up) <sup>1</sup>		Disability Retirement <sup>2</sup>		Years of Service	Service Retirement <sup>3</sup>
	Males	Females	Males	Females		
20	6.00%	2.50%	0.02%	0.04%	20	12.5%
25	6.00	2.50	0.05	0.08	25	22.0
30	4.25	3.50	0.10	0.12	30	15.0
35	2.50	2.00	0.22	0.28	35	20.0
40	1.75	1.50	0.25	0.40	40	20.0
45	1.25	1.25	0.30	0.62	-	-
50	1.25	1.25	0.40	0.70	-	-
55	1.25	1.25	0.60	0.75	-	-
60	-	-	0.80	0.90	-	-

<sup>1</sup> Members of any age with less than 3 years of service have a 10% withdrawal assumption.

<sup>2</sup> It is assumed that 75% of the disabilities are due to accidents in the line of duty and the "percent of disability" is assumed to be 100%.

<sup>3</sup> 100% of active members are assumed to retire at age 65, regardless of service.

## Outline of Actuarial Assumptions and Methods

### Police Officers

**Mortality:** The RP-2000 Combined Mortality Table projected with Scale AA to 2015 set forward 1 year for females is used for healthy active members, retirees and beneficiaries. The following disability mortality table is used for disabled retirees.

Disabled Retiree Mortality		
Sample Ages	Males	Females
20	0.80%	0.50%
30	0.80	0.50
40	0.80	0.50
50	0.80	0.50
60	1.16	0.74
70	2.35	1.55
80	5.78	3.76
90	13.95	10.87
100	51.48	49.93

Mortality improvement is anticipated under these assumptions as recent mortality experience shows actual deaths are approximately 7% greater for healthy lives and 6% greater for disabled lives than expected under the selected tables.

## Outline of Actuarial Assumptions and Methods

### Firefighters

**Salary Increases:** Firefighters are assumed to receive a longevity increase of 5%, 10%, 15%, and 20% applied to individual base pay after 15, 20, 25, and 30 years of service, respectively. These are approximated by increases of 3.5% to final average salary. Representative values of the assumed annual rates of future salary increases before longevity increases are as follows and include inflation at 4.25% per annum:

Pay Increase Assumptions for an Individual Member			
Years of Service	Merit & Seniority	Inflation & Productivity (Economy)	Total Increase (Next Year)
5	2.50%	4.25%	6.75%
10	2.50	4.25	6.75
15	2.50	4.25	6.75
20	2.50	4.25	6.75
25	2.50	4.25	6.75
30	2.50	4.25	6.75
35	2.50	4.25	6.75

**Separations from Active Service:** Representative values of the assumed annual rates of withdrawal, service retirement, and disability are shown in the following tables:

Percent of Members Separating Within the Next Year				
Sample Ages	Withdrawal (2 years of service & up) <sup>1</sup>	Disability Retirement <sup>2</sup>	Years of Service	Service Retirement <sup>3</sup>
20	3.50%	0.01%	20	12.50%
25	3.50	0.02	25	12.50
30	2.00	0.15	30	20.00
35	1.00	0.20	35	40.00
40	1.00	0.35	40	40.00
45	1.50	0.45	-	-
50	1.50	0.52	-	-
55	-	0.60	-	-
60	-	0.70	-	-

<sup>1</sup>Members of any age with less than 2 years of service have a 9% withdrawal assumption.

<sup>2</sup>It is assumed that 75% of the disabilities are due to accidents in the line of duty and the "percent of disability" is assumed to be 100%.

<sup>3</sup>100% of active members are assumed to retire at age 60, regardless of service.

## Outline of Actuarial Assumptions and Methods

### Firefighters

**Mortality:** The RP-2000 Combined Mortality Table projected with Scale AA to 2015 set forward 1 year for females is used for healthy active members, retirees and beneficiaries. The following disability mortality table is used for disabled retirees.

Disabled Retiree Mortality		
Sample Ages	Males	Females
20	0.59%	0.37%
30	0.59	0.37
40	0.59	0.37
50	0.59	0.37
60	0.85	0.54
70	1.72	1.13
80	4.22	2.75
90	10.19	7.94
100	37.60	36.47

Mortality improvement is anticipated under these assumptions as recent mortality experience shows actual deaths are approximately 7% greater for male and 1% greater for female healthy lives and 8% greater for disabled lives than expected under the selected tables. Police Officers and Firefighters are combined in the valuation results and the female healthy life population is much greater for Police Officers than Firefighters, so the smaller margin under Firefighters is not an issue at this time.

## **Provisions as Interpreted for Valuation Purposes**

### **Teachers' Retirement Plan**

#### **Effective Date**

Established on July 1, 1997. The U.S. Treasury is responsible for paying all benefits accrued before this date.

#### **Definitions**

##### ***Affiliated Employers***

District of Columbia Public Schools, Public Charter Schools

##### ***Covered Members***

Permanent, temporary, and probationary teachers for the District of Columbia public day schools become members automatically on their date of employment. Other employees covered by the Retirement of Public School Teachers Act – including librarians, principals, and counselors – also become members on their date of employment. Substitute teachers and employees of the Department of School Attendance and Work Permits are not covered. Some former D.C teachers working at charter schools are eligible to remain in the Program.

##### ***Service Credit***

One year of school service is given for each year of employment with DCPS. After five years of service are accrued, additional service may be purchased or credited for service outside of DCPS. For purposes of eligibility and benefit accrual, Federal service is included in the calculation of the normal retirement benefit.

##### ***Average Salary***

Highest 36 consecutive months of pay, divided by three.

##### ***Vested***

Members who accrue five or more years of Service Credit are vested for benefits. If these members leave service they may leave their Member Contribution Accounts with the Plan for a future benefit when reaching eligibility (deferred vested in this report).

#### **Contributions**

##### ***Member Contributions***

Members hired before November 1, 1996 are required to contribute 7% of annual pay. Members hired on or after November 1, 1996 contribute 8% of annual pay. Interest is not credited to each Member's accumulated contributions.

##### ***Refund of Member Contributions***

In the event a member leaves service for a reason other than death or retirement, member contribution accounts are refunded upon request.

## Provisions as Interpreted for Valuation Purposes

### Teachers' Retirement Plan

#### Service Retirement

##### **Eligibility**

The Age and Service Credit requirements to be eligible for a full Service Retirement are listed below:

Members Hired Before November 1, 1996:	
Age	Service Credit
55	30 years, including 5 years school service
60	20 years, including 5 years school service
62	5 years school service

Members Hired On and After November 1, 1996:	
Age	Service Credit
Any Age	30 years, including 5 years school service
60	20 years, including 5 years school service
62	5 years school service

##### **Benefit**

For members hired before November 1, 1996:

- 1.5% of Average Salary times service up to 5 years, plus
- 1.75% of Average Salary times service between 5 and 10 years, plus
- 2.0% of Average Salary times service over 10 years.

For members hired on or after November 1, 1996:

- 2.0% of Average Salary times service.

## Provisions as Interpreted for Valuation Purposes Teachers' Retirement Plan

### Involuntary Service Retirement

#### **Eligibility**

The Age and Service Credit requirements to be eligible for a Reduced Service Retirement are listed below:

All Members, regardless of date of hire

Age	Service Credit
Any age	25 years, including 5 years school service
50	20 years, including 5 years school service

#### **Benefit**

Service Retirement Benefit is reduced by 1/6% per month (or 2% per year) that date of retirement precedes age 55.

### Disability Retirement

#### **Eligibility**

Active members with five or more years of school service credit are covered (vested) for disability retirement. To be eligible, the member must be found to be incapable of satisfactorily performing the duties of his/her position.

#### **Benefit**

Equal to Service Retirement benefit. Minimum benefit is the lesser of a) or b):

- a) 40% of Average Salary
- b) Calculated benefit amount by projecting service to age 60.

### Survivor Benefits

#### **Lump Sum**

##### *Eligibility*

Death before completion of 18 months of school service or death without an eligible spouse, domestic partner, dependent child or parent.

##### *Benefit*

Refund of member contributions.

## Provisions as Interpreted for Valuation Purposes

### Teachers' Retirement Plan

#### Survivor Benefits

##### **Spouse or Domestic Partner Only**

###### *Eligibility*

Death before retirement and married for at least two years, or have a child by the marriage.

###### *Benefit*

55% of Service Retirement benefit. Minimum benefit is the lesser of a) or b):

- a) 55% of 40% of Average Salary
- b) 55% of the calculated benefit amount by projecting service to age 60.

##### **Spouse or Domestic Partner & Dependent Children**

###### *Eligibility*

Death before retirement and married for at least two years, or have a child by the marriage. Children must be unmarried and under age 18, or 22 if a full-time student; also, any dependent child who incurred a disability before age 18. Death does not have to occur before retirement for the children's benefit.

###### *Spouse or Domestic Partner Benefit*

55% of Service Retirement benefit. Minimum benefit is the lesser of a) or b):

- a) 55% of 40% of Average Salary
- b) 55% of the calculated benefit amount by projecting service to age 60.

###### *Child Benefit*

A benefit per child equal to the smallest of a) or b) or c):

- a) 60% of Average Salary divided by the number of eligible children
- b) \$6,795 (if hired before 1/1/1980), \$6,562\* (if hired between 1/1/1980 and 10/31/1996), or \$6,390\* (if hired on or after 11/1/1996) per child
- c) \$20,548\* (if hired before 1/1/1980), \$19,843\* (if hired between 1/1/1980 and 10/31/1996), or \$19,324\* (if hired on or after 11/1/1996) divided by the number of children.

\*Survivor benefit amounts are as of 2016, and are subject to annual inflation adjustments.

## **Provisions as Interpreted for Valuation Purposes**

### **Teachers' Retirement Plan**

#### **Survivor Benefits**

##### ***Dependent Children Only***

###### ***Eligibility***

Children must be unmarried and under age 18, or 22 if full-time student. Also, any dependent child because of a disability incurred before age 18. Death does not have to occur before retirement for the children's benefit.

###### ***Benefit***

A benefit per child equal to the smallest of a) or b) or c):

- a) 75% of Average Salary divided by the number of eligible children
- b) \$8,304\* (if hired before 1/1/1980), \$7,997 (if hired between 1/1/1980 and 10/31/1996), or \$7,752\* (if hired on or after 11/1/1996) per child
- c) \$25,110\* (if hired before 1/1/1980), \$24,183\* (if hired between 1/1/1980 and 10/31/1996), or \$23,441\* (if hired on or after 11/1/1996) divided by the number of children.

##### ***Parents Only***

###### ***Eligibility***

Death before retirement and no eligible spouse or children, and parents must receive at least one-half of their total income from member.

###### ***Benefit***

55% of Service Retirement benefit. Minimum benefit is the lesser of a) or b):

- a) 55% of 40% of Average Salary
- b) 55% of the calculated benefit amount by projecting service to age 60.

\*Survivor benefit amounts are as of 2016, and are subject to annual inflation adjustments.

#### **Deferred Vested Retirement**

###### ***Eligibility***

Active members with five or more years of school service credit .

###### ***Benefit***

Benefit is calculated in the same manner as Service Retirement benefit and may be collected starting at age 62.

## Provisions as Interpreted for Valuation Purposes

### Teachers' Retirement Plan

#### Options

Retirement and disability benefits are payable for the life of the retired member. Optional reduced benefits may be elected at the time of retirement to provide for continuation of a reduced benefit amount to a designated beneficiary. Optional forms include:

a) Reduced Annuity with a Maximum Survivor Annuity (to Spouse or Registered Domestic Partner)

Reduced benefit paid to member so that upon member's death, the spouse will receive 55% of the unreduced normal life annuity. Member's benefit is reduced by 2.5% of retirement benefit, up to \$3,600, plus 10% of any retirement benefit over \$3,600.

b) Reduced Annuity with a Partial Survivor Annuity (to Spouse or Registered Domestic Partner)

Reduced benefit paid to member so that upon member's death, the spouse will receive a partial annuity that can range from \$1 up to 55% of the unreduced normal life annuity amount. Member's benefit is reduced by the same amount as option a, multiplied by the ratio of the chosen benefit percent to the maximum benefit percent (55%).

c) Reduced Annuity with a Life Insurance Benefit

Member elects a life insurance amount, payable in a lump sum to designated beneficiary upon member's death.

d) Reduced Annuity with a Survivor Annuity to a Person with an Insurable Interest

A 55% Joint and Survivor Annuity where the original benefit is reduced by 10% plus an additional 5% for each full 5 years, up to 25 years, that the designated beneficiary is younger than the member. Maximum reduction is 40% for any beneficiary who is 25 or more years younger than the member.

#### Cost-of-Living Adjustments (COLA)

Each year on March 1st, benefits which have been paid for at least twelve months preceding March 1st are increased. The increase is equal to the annual CPI. COLA's are included in benefit payments on and after April 1st.

For members hired on or after November 1, 1996, the cost of living increase is limited to 3% per year.

## **Provisions as Interpreted for Valuation Purposes**

### **Police Officers and Firefighters' Retirement Plan**

#### **Effective Date**

Established on July 1, 1997. The Treasury Department is responsible for paying all benefits accrued before this date.

#### **Definitions**

##### ***Affiliated Employers***

District of Columbia Police Officers and Firefighters, except Police cadets.

##### ***Covered Members***

Sworn Police Officers and Firefighters become members on their first day of active duty. Membership is not automatic for uniformed EMT Firefighters.

##### ***Service Credit***

One year of service is given for each year of employment with MPD or FEMS. Additional service may be purchased or credited for lateral transfer service, EMT service, prior military service, and certain civilian service. For purposes of eligibility and benefit accrual, Federal service is included in the calculation of the normal retirement benefit.

##### ***Average Salary***

For members hired before February 15, 1980, the highest 12 consecutive months of pay. For members hired on or after February 15, 1980, the highest 36 consecutive months of pay, divided by 3. Base pay does not include overtime, holiday or military pay.

##### ***Vested***

Members who accrue five or more years of Service Credit are vested for benefits. If these members leave service they may leave their Member Contribution Accounts with the Plan for a future benefit when reaching eligibility (deferred vested in this report).

#### **Contributions**

##### ***Member Contributions***

Members hired before November 10, 1996 contribute 7.0% of salary. Members hired on or after November 10, 1996 contribute 8.0% of salary. Member contributions, together with any purchased service credit payments, are credited to individual Member Contribution Accounts. No interest is accrued on contributions.

##### ***Refund of Member Contributions***

In the event a member leaves service for a reason other than death or retirement, member contribution accounts are refunded upon request.

## Provisions as Interpreted for Valuation Purposes

### Police Officers and Firefighters' Retirement Plan

#### Service Retirement

##### **Eligibility**

The Age and Service Credit requirements to be eligible for a full Service Retirement are listed below:

Members hired before November 10, 1996	
Age	Service Credit
Any age	20 (only if hired before 2/15/1980)
50	25 years departmental service
60	5 years departmental service

Members hired on and after November 10, 1996	
Age	Service Credit
Any age	25 years departmental service
60	5 years departmental service

##### **Benefit**

For members hired before November 10, 1996:

- 2.5% of Average Salary times departmental service up to 25 years (20 years if hired before 2/15/1980), plus
- 3.0% of Average Salary times departmental service over 25 years (or 20), plus
- 2.5% of Average Salary times purchased or credited service.

For members hired on or after November 10, 1996:

- 2.5% of Average Salary times total service.

All members are subject to a maximum benefit of 80% of Average Salary.

#### Service-Related Disability Retirement

##### **Eligibility**

Disabled as a result of an injury or disease that permanently disables him/her for the performance of duty.

##### **Benefit**

For members hired before February 15, 1980:

2.5% of Average Salary times total years of service, subject to a minimum of 66-2/3% of Average Salary and a maximum of 70% of Average Salary.

For members hired on or after February 15, 1980:

70% of final pay times percentage of disability, subject to a minimum of 40% of final pay.

## **Provisions as Interpreted for Valuation Purposes** Police Officers and Firefighters' Retirement Plan

### **Nonservice-Related Disability Retirement**

#### ***Eligibility***

Active members with five or more years of departmental service are covered (vested) for disability retirement. The member is eligible if found that the disability precludes further service with his/her department.

#### ***Benefit***

For members hired before February 15, 1980:

2.0% of Average Salary times total years of service, subject to a minimum of 40% of Average Salary and a maximum of 70% of Average Salary.

For members hired on or after February 15, 1980:

70% of final pay times percentage of disability, subject to a minimum of 30% of final pay.

### **Survivor Benefits**

#### ***Lump Sum***

##### ***Eligibility***

Death before retirement without an eligible spouse or child.

##### ***Benefit***

Refund of member contributions according to Plan order of precedence.

#### ***Lump Sum – Death In Line of Duty***

##### ***Eligibility***

Death occurring in the line of duty, not resulting from willful misconduct.

##### ***Benefit***

\$50,000

#### ***Spouse Only – Death in Line Of Duty***

##### ***Eligibility***

Member killed in line of duty, after December 29, 1993.

##### ***Benefit***

100% of final pay.

## Provisions as Interpreted for Valuation Purposes

### Police Officers and Firefighters' Retirement Plan

#### Survivor Benefits

##### **Spouse Only – Death Not In Line Of Duty**

###### *Eligibility*

Member death, not in line of duty, after December 29, 1993. If retired, must be married for at least one year or have a child by the marriage.

###### *Benefit*

40% of the greater of a) or b):

a) Average Salary

b) Salary for step 6 salary class 1 of the DC Police and Fireman's Salary Act in effect, adjusted for cost-of-living increases if death occurs after retirement.

Benefit cannot be higher than rate of pay at death (or retirement if death occurs after retirement).

##### **Spouse & Dependent Children**

###### *Eligibility*

Member death, not in line of duty, after December 29, 1993. If retired, must be married for at least one year or have a child by the marriage. Children must be unmarried and under age 18, or 22 if full-time student. Also, any dependent child because of a disability incurred before age 18. Death does not have to occur before retirement for the children's benefit.

###### *Spouse Benefit*

40% of the greater of a) or b):

a) Average Salary

b) Salary for step 6 salary class 1 of the DC Police and Fireman's Salary Act in effect, adjusted for cost-of-living increases if death occurs after retirement.

Benefit cannot be higher than rate of pay at death (or retirement if death occurs after retirement).

#### Survivor Benefits

##### *Child Benefit*

A benefit per child equal to the smallest of a) or b) or c):

a) 60% of Average Salary divided by the number of eligible children

b) \$3,993\* (if hired before 11/10/1996) or \$3,907\* (if hired on or after 11/10/1996) per child

c) \$11,980\* (if hired before 11/10/1996) or \$11,720\* (if hired on or after 11/10/1996) divided by the number of children.

\*Survivor benefit amounts are as of 2016, and are subject to annual inflation adjustments.

## **Provisions as Interpreted for Valuation Purposes**

### **Police Officers and Firefighters' Retirement Plan**

#### ***Dependent Children Only***

##### ***Eligibility***

Children must be unmarried and under age 18, or 22 if full-time student. Also, any dependent child because of a disability incurred before age 18. Death does not have to occur before retirement for the children's benefit.

##### ***Benefit***

75% of Average Salary divided by the number of eligible children, adjusted for cost-of-living increases.

#### **Deferred Vested Retirement**

##### ***Eligibility***

Active members with five or more years of departmental service.

##### ***Benefit***

Benefit is calculated in the same manner as Service Retirement benefit and may be collected starting at age 55.

#### **Options**

Retirement and disability benefits are payable for the life of the retired member. This includes an unreduced Joint and Survivor Annuity as defined above in the "Survivor Benefits – Spouse and Dependent Children" section.

An optional reduced benefit may be elected at the time of retirement to provide for an additional survivor benefit to a designated beneficiary. Member's original annuity is reduced by 10% and that amount is added to the survivor's benefit. If the designated beneficiary is more than five years younger than the member, the additional amount will be reduced by 5% for each full five years that the beneficiary is younger than the member, subject to a maximum reduction of 40%.

#### **Cost-of-Living Adjustments (COLA)**

Each year on March 1st, benefits which have been paid for at least twelve months preceding March 1st are increased. The increase is equal to the annual CPI. COLA's are included in benefit payments on and after April 1st.

For members hired on or after November 10, 1996, the cost of living increase is limited to 3% per year. Members (not beneficiaries) hired before February 15, 1980, will receive equalization pay, which is defined as the percentage increase as active employees' salary increases.

## Schedule of Active Member Valuation Data

(Dollar amounts in thousands)

Teachers' Retirement Plan				
Valuation Date	Number	Annual Payroll	Annual Average Pay	% increase in Average Pay
September 30, 2016	5,141	\$438,079	\$85.2	-0.60%
September 30, 2015	4,866	417,090	85.7	1.77
September 30, 2014	4,499	378,926	84.2	-0.07
September 30, 2013	4,379	369,071	84.3	-0.63
September 30, 2012	4,495	381,235	84.8	4.72
September 30, 2011	4,747	384,455	81.0	13.96
September 30, 2010	4,749	337,516	71.1	-2.85
September 30, 2009	4,601	336,600	73.2	-1.82

Police Officers' Retirement Plan				
Valuation Date	Number	Annual Payroll	Annual Average Pay	% increase in Average Pay
September 30, 2016	3,651	\$298,442	\$81.7	1.83%
September 30, 2015	3,829	307,373	80.3	2.44
September 30, 2014	3,902	305,765	78.4	3.04
September 30, 2013	3,846	292,494	76.1	-0.69
September 30, 2012	3,810	291,780	76.6	-1.26
September 30, 2011	3,775	292,785	77.6	2.29
September 30, 2010	3,915	296,837	75.8	-2.05
September 30, 2009	4,014	310,700	77.4	0.72

Firefighters' Retirement Plan				
Valuation Date	Number	Annual Payroll	Annual Average Pay	% increase in Average Pay
September 30, 2016	1,708	\$139,672	\$81.8	0.60%
September 30, 2015	1,708	138,828	81.3	1.04
September 30, 2014	1,649	132,650	80.4	10.73
September 30, 2013	1,664	120,886	72.6	0.33
September 30, 2012	1,700	123,097	72.4	0.69
September 30, 2011	1,786	128,436	71.9	1.51
September 30, 2010	1,793	127,017	70.8	0.22
September 30, 2009	1,774	125,400	70.7	2.02

## Schedule of Retirees Added-to and Removed-from Rolls

(Dollar amounts in thousands)

Fiscal Year Ended	Plan	New Members Added		Members Removed		Changes due to Plan Amendments	Rolls at End of Year		Percentage Increase in Annual Allowances	Average Annual Allowances
		Number	Annual Allowances	Number	Annual Allowances		Number	Annual Allowances		
9/30/2016	Teachers	222	\$6,844	58	\$1,021	\$68	3,882	\$68,790	9.36%	\$18
	Police/Fire	441	18,205	47	1,022	(1,659)	3,003	85,738	18.10%	29
9/30/2015	Teachers	183	4,950	66	822	84	3,718	62,899	7.18%	17
	Police/Fire	284	12,818	39	424	(630)	2,610	70,214	20.13%	27
9/30/2014	Teachers	218	6,079	65	955	597	3,601	58,687	10.80%	16
	Police/Fire	237	9,465	55	895	350	2,365	58,450	18.01%	25
9/30/2013	Teachers	202	5,289	39	436	706	3,448	52,966	11.73%	15
	Police/Fire	174	6,054	30	298	344	2,183	49,530	14.05%	23
9/30/2012	Teachers	204	4,807	49	594	1,198	3,285	47,407	12.88%	14
	Police/Fire	234	8,034	51	557	423	2,039	43,430	22.23%	21
9/30/2011	Teachers	226	4,374	37	490	497	3,130	41,996	12.73%	13
	Police/Fire	326	6,847	22	238	205	1,856	35,530	23.72%	19
9/30/2010	Teachers	203	4,225	32	337	1,489	2,941	37,254	16.76%	13
	Police/Fire	127	3,511	24	208	3,003	1,552	28,717	27.04%	19
9/30/2009	Teachers	406	7,361	27	281	(70)	2,770	31,907	28.16%	12
	Police/Fire	193	2,639	108	2,727	(563)	1,449	22,605	-2.80%	16
9/30/2008	Teachers	63	939	36	193	429	2,391	24,897	4.95%	10
	Police/Fire	78	5,349	28	133	(1,229)	1,364	23,257	20.69%	17
9/30/2007	Teachers	230	3,564	41	241	2,879	2,364	23,721	35.40%	10
	Police/Fire	153	3,180	46	171	2,476	1,314	19,270	39.78%	15

## Analysis of Financial Experience

(Dollar amounts in millions)

### Teachers' Retirement Plan

#### Gains & Losses in Accrued Liabilities Resulting from Difference Between Assumed Experience & Actual Experience

Type of Activity	Gain (or Loss) For Year Ending 10/1/2016	Gain (or Loss) For Year Ending 10/1/2015
<b>Age &amp; Service Retirements.</b> If members retire at older ages, there is a gain. If younger ages, a loss.	\$ (8.5)	\$ (4.7)
<b>Disability Retirements.</b> If disability claims are less than assumed, there is a gain. If more claims, a loss.	(2.8)	(0.0)
<b>Death-in Service Benefits.</b> If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	0.8	(0.7)
<b>Withdrawal From Employment.</b> If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	5.7	1.5
<b>Pay Increases.</b> If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	31.4	10.2
<b>New Members.</b> Additional unfunded accrued liability will produce a loss.	(30.8)	(40.3)
<b>Investment Income.</b> If there is a greater investment income than assumed, there is a gain. If less income, a loss.	3.0	(9.9)
<b>Death After Retirement.</b> If retirants live longer than assumed, there is a loss. If not as long, a gain.	8.6	1.3
<b>Other.</b> Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	8.5	34.2
<b>Gain (or Loss) During Year From Financial Experience</b>	15.9	(8.4)
<b>Non-Recurring Items.</b> Adjustments for plan amendments, assumption changes, method changes or asset transfer to U.S. Treasury.	21.9	(3.8)
<b>Composite Gain (or Loss) During Year</b>	<u>\$37.8</u>	<u>\$(12.2)</u>

## Analysis of Financial Experience

(Dollar amounts in millions)

### Police Officers and Firefighters' Retirement Plan

#### Gains & Losses in Accrued Liabilities Resulting from Difference Between Assumed Experience & Actual Experience

Type of Activity	Gain (or Loss) For Year Ending 10/1/2016	Gain (or Loss) For Year Ending 10/1/2015
<b>Age &amp; Service Retirements.</b> If members retire at older ages, there is a gain. If younger ages, a loss.	\$3.5	\$(27.0)
<b>Disability Retirements.</b> If disability claims are less than assumed, there is a gain. If more claims, a loss.	0.9	4.0
<b>Death-in Service Benefits.</b> If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	1.4	1.5
<b>Withdrawal From Employment.</b> If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(5.2)	(1.0)
<b>Pay Increases.</b> If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	110.3	127.4
<b>New Members.</b> Additional unfunded accrued liability will produce a loss.	(15.3)	(24.2)
<b>Investment Income.</b> If there is a greater investment income than assumed, there is a gain. If less income, a loss.	1.1	(22.4)
<b>Death After Retirement.</b> If retirants live longer than assumed, there is a loss. If not as long, a gain.	7.5	(14.6)
<b>Other.</b> Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	(10.1)	32.4
<b>Gain (or Loss) During Year From Financial Experience</b>	94.1	76.1
<b>Non-Recurring Items.</b> Adjustments for plan amendments, assumption changes, method changes or asset transfer to U.S. Treasury.	76.5	(4.8)
<b>Composite Gain (or Loss) During Year</b>	\$170.6	\$71.3

**Valuation Balance Sheet**

## Teachers' Retirement Plan

(Dollar amounts in thousands)

**As of October 1, 2016**

<b>Present and Prospective Assets</b>	
Actuarial value of present assets	\$1,845,476
Present value of future members' contributions	278,851
Present value of future employer contributions:	
Normal contributions	282,632
Unfunded accrued liability contributions	184,164
Total prospective employer contributions	466,796
<b>Total present and prospective assets</b>	<b><u>\$2,591,123</u></b>
<b>Actuarial Liabilities</b>	
Present value of benefits payable on account of retired members and survivors of deceased members now drawing retirement benefits	\$980,895
Present value of prospective benefits payable on account of inactive members	127,138
Present value of prospective benefits payable on account of present active members:	
Service retirement benefits	1,269,385
Disability retirement benefits	42,884
Survivor benefits	28,401
Separation benefits	142,422
Total present value of prospective benefits payable on account of present active members	1,483,091
<b>Total Actuarial Liabilities</b>	<b><u>\$2,591,123</u></b>

**Valuation Balance Sheet**Police Officers and Firefighters' Retirement Plan  
(Dollar amounts in thousands)

As of October 1, 2016

**Present and Prospective Assets**

Actuarial value of present assets	\$4,985,052
Present value of future members' contributions	381,990
<hr/>	
Present value of future employer contributions:	
Normal contributions	1,909,034
Unfunded accrued liability contributions	(486,538)
Total prospective employer contributions	1,422,496
<hr/>	
<b>Total present and prospective assets</b>	<b><u><u>\$6,789,538</u></u></b>

**Actuarial Liabilities**

Present value of benefits payable on account of retired members and survivors of deceased members now drawing retirement benefits	\$1,590,952
Present value of prospective benefits payable on account of inactive members	59,243
<hr/>	
Present value of prospective benefits payable on account of present active members:	
Service retirement benefits	4,674,658
Disability retirement benefits	305,384
Survivor benefits	86,428
Separation benefits	72,873
<hr/>	
Total present value of prospective benefits payable on account of present active members	5,139,343
<hr/>	
<b>Total Actuarial Liabilities</b>	<b><u><u>\$6,789,538</u></u></b>

**Solvency Test**

(Dollar amounts in thousands)

Valuation Date	Aggregate Accrued Liabilities			Reported Assets	Portion of Accrued Liabilities Covered by Actuarial Value of Assets		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)		(1)	(2)	(3)
<b>Teachers' Retirement Plan</b>							
10/1/2007	303,059	805,475	2,790,093	4,068,900	100.0	100.0	100.0
10/1/2008	332,834	851,489	3,092,491	4,379,700	100.0	100.0	82.5
10/1/2009	335,481	995,361	3,001,587	4,493,400	100.0	100.0	80.4
10/1/2010	136,055	622,253	569,991	1,570,968	100.0	100.0	97.6
10/1/2011	138,874	718,884	687,107	1,573,654	100.0	100.0	70.3
10/1/2012	137,698	819,842	723,008	1,503,346	100.0	100.0	75.5
10/1/2013	141,792	883,495	733,756	1,622,376	100.0	100.0	81.4
10/1/2014	141,943	968,446	738,841	1,746,030	100.0	100.0	86.0
10/1/2015	144,927	1,053,078	755,300	1,670,976	100.0	100.0	62.6
10/1/2016	152,459	1,108,032	769,149	1,822,113	100.0	100.0	73.0
<b>Police Officers and Firefighters' Retirement Plan</b>							
10/1/2007	303,059	805,475	2,790,093	4,068,900	100.0	100.0	100.0
10/1/2008	332,834	851,489	3,092,491	4,379,700	100.0	100.0	82.5
10/1/2009	335,481	995,361	3,001,587	4,493,400	100.0	100.0	80.4
10/1/2010	211,961	583,338	2,371,531	3,418,796	100.0	100.0	89.6
10/1/2011	224,928	708,364	2,376,533	3,593,716	100.0	100.0	92.3
10/1/2012	235,924	849,982	2,371,070	3,681,526	100.0	100.0	100.0
10/1/2013	247,202	966,862	2,430,021	4,168,457	100.0	100.0	100.0
10/2/2014	255,735	1,149,515	2,593,287	4,588,319	100.0	100.0	100.0
10/1/2015	262,674	1,388,908	2,631,511	4,462,228	100.0	100.0	100.0
10/1/2016	260,786	1,650,195	2,587,532	4,454,464	100.0	100.0	100.0

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## STATISTICAL SECTION

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## Summary

### Introduction

The objective of the *Statistical Section* is to provide information to assist readers in understanding and assessing DCRB's overall financial condition when viewing the Financial Statements, Notes to the Financial Statements, the Required Supplementary Information and the Supplementary Information. The data presented throughout this section incorporates information from prior CAFRs and is useful in evaluating how the financial condition of the Plans has changed over time.

### Financial Trends

The financial trend schedules show financial information about the growth of DCRB's assets and provide a context for how DCRB's financial position has changed over the past 10 years. The financial trend schedules presented are:

- Changes in Net Pension
- Changes in the Net Pension Liability and Related Ratios
- Investment Expenses
- Money-Weighted Investment Returns
- Funding Progress
- Administrative Expenses

### Operating Information

The following schedules provide data of the environment in which DCRB operates. The schedules presented include:

- Employer Contributions
- Annual Salaries and Benefits
- Participant Data
- Average Benefit by Type
- Schedule of Retired Members by Benefit Type and Option Selected

## Schedules of Changes in Net Position

(Dollar amounts in thousands)

Teachers' Retirement Fund										
	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
<b>Additions</b>										
Contributions:										
District Government \$	44,469	39,513	31,636	6,407	-	-	-	-	6,000	14,600
District employees	33,591	31,621	28,751	28,129	28,639	27,739	29,940	24,907	25,919	26,793
Total contributions	78,060	71,134	60,387	34,536	28,639	27,739	29,940	24,907	31,919	41,393
Total net investment (loss) income	152,262	(72,647)	132,086	168,117	190,002	44,364	125,756	(37,875)	(259,309)	217,731
Other income	1,033	385	522	796	672	616	695	793	990	740
Total (reductions) additions	231,355	(1,128)	192,995	203,449	219,313	72,719	156,391	(12,175)	(226,400)	259,864
<b>Deductions</b>										
Benefit payments	68,634	64,076	59,832	54,180	48,145	42,532	37,611	33,532	30,692	25,801
Retirement benefits payable to U.S. Treasury	459	-	-	21,503	-	-	-	-	-	-
Refunds*	6,205	5,576	5,790	5,250	5,514	4,060	3,374	5,316	n/a	n/a
Administrative expenses	4,746	4,543	3,787	3,627	2,880	2,885	2,327	2,340	2,919	2,901
Total deductions	80,044	74,195	69,409	84,560	56,539	49,477	43,312	41,188	33,611	28,702
<b>Changes in Net Position</b>	<b>\$ 151,311</b>	<b>\$ (75,323)</b>	<b>\$ 123,586</b>	<b>\$ 118,889</b>	<b>\$ 162,774</b>	<b>\$ 23,242</b>	<b>\$ 113,079</b>	<b>\$ (53,363)</b>	<b>\$ (260,011)</b>	<b>\$ 231,162</b>

\*Refunds included in Benefit Payments prior to 2009.

## Schedules of Changes in Net Position

(Dollar amounts in thousands)

Police Officers and Firefighters' Retirement Fund										
	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
<b>Additions</b>										
Contributions:										
District Government	\$ 136,115	\$ 103,430	\$ 110,766	\$ 96,314	\$ 116,700	\$ 127,200	\$ 132,300	\$ 106,000	\$ 137,000	\$ 140,100
District employees	32,785	33,679	32,821	30,581	30,398	30,474	31,607	29,900	31,718	27,489
Total contributions	168,900	137,109	143,587	126,895	147,098	157,674	163,907	135,900	168,718	167,589
Total net investment (loss) income	415,157	(187,283)	338,894	423,581	452,881	81,973	270,277	(58,228)	(516,438)	400,433
Other income	2,810	1,012	1,342	2,047	1,584	1,435	1,555	1,680	1,952	1,383
Total (reductions) additions	586,867	(49,162)	483,823	552,523	601,563	241,082	435,739	79,352	(345,768)	569,406
<b>Deductions</b>										
Benefit payments	78,920	63,634	52,784	45,656	38,924	30,766	27,872	24,569	25,364	20,587
Retirement benefits payable to U.S. Treasury	217	-	-	9,391	-	-	-	-	-	-
Refunds*	2,179	1,396	1,637	1,960	1,534	1,913	1,974	1,611	n/a	n/a
Administrative expenses	12,918	11,939	9,730	8,913	6,718	6,678	5,145	4,904	5,750	5,421
Total deductions	94,234	76,969	64,151	65,920	47,176	39,357	34,991	31,084	31,114	26,008
<b>Changes in Net Position</b>	<b>\$ 492,633</b>	<b>\$ (126,131)</b>	<b>\$ 419,672</b>	<b>\$ 486,603</b>	<b>\$ 554,387</b>	<b>\$ 201,725</b>	<b>\$ 400,748</b>	<b>\$ 48,268</b>	<b>\$ (376,882)</b>	<b>\$ 543,397</b>

\*Refunds included in Benefit Payments prior to 2009.

## Schedule of Changes in Net Pension Liability and Related Ratios

(Dollar amounts in thousands)

Teachers' Retirement Fund			
	2016	2015	2014
<b>Total pension liability</b>			
Service Cost	\$ 61,599	\$ 53,297	\$ 50,409
Interest	124,370	118,378	112,204
Benefit changes	-	-	-
Difference between expected and actual experience	2,656	(7,246)	-
Changes of assumptions	-	-	-
Benefits payments	(69,093)	(64,076)	(59,832)
Refunds of contributions	(6,205)	(5,576)	(5,790)
<b>Net change in total pension liability</b>	<b>113,327</b>	<b>94,777</b>	<b>96,991</b>
<b>Total pension liability - beginning of year</b>	<b>1,950,811</b>	<b>1,856,034</b>	<b>1,759,043</b>
<b>Total pension liability - end of year (a)</b>	<b>2,064,138</b>	<b>1,950,811</b>	<b>1,856,034</b>
<b>Plan net position</b>			
Contributions - employer	44,469	39,513	31,636
Contributions - member	33,591	31,621	28,751
Net investment income	152,262	(72,647)	132,086
Benefits payments	(69,093)	(64,076)	(59,832)
Administrative expense	(4,746)	(4,543)	(3,787)
Refunds of contributions	(6,205)	(5,576)	(5,790)
Other	1,033	385	522
<b>Net change in plan net position</b>	<b>151,311</b>	<b>(75,323)</b>	<b>123,586</b>
<b>Plan net position - beginning of year</b>	<b>1,670,638</b>	<b>1,745,961</b>	<b>1,622,375</b>
<b>Plan net position - end of year (b)</b>	<b>1,821,949</b>	<b>1,670,638</b>	<b>1,745,961</b>
<b>Net pension liability end of year (a - b)</b>	<b>\$ 242,189</b>	<b>\$ 280,173</b>	<b>\$ 110,073</b>
<b>Ratio of plan net position to total pension liability (b / a)</b>	<b>88.27%</b>	<b>85.64%</b>	<b>94.07%</b>
<b>Covered employee payroll</b>	<b>\$ 438,079</b>	<b>\$ 417,090</b>	<b>\$ 378,926</b>
<b>Net pension liability as a percentage of covered-employee payroll</b>	<b>55.28%</b>	<b>67.17%</b>	<b>29.05%</b>

Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

## Schedule of Changes in Net Pension Liability and Related Ratios

(Dollar amounts in thousands)

Police Officers and Firefighters' Retirement Fund			
	2016	2015	2014
<b>Total pension liability</b>			
Service Cost	\$ 198,020	\$ 192,114	\$ 176,102
Interest	282,285	257,943	235,097
Benefit changes	-	-	-
Difference between expected and actual experience	(106,840)	(2,477)	-
Changes of assumptions	-	-	-
Benefits payments	(79,137)	(63,634)	(52,784)
Refunds of contributions	(2,179)	(1,396)	(1,637)
<b>Net change in total pension liability</b>	<b>292,149</b>	<b>382,550</b>	<b>356,778</b>
<b>Total pension liability - beginning of year</b>	<b>4,383,413</b>	<b>4,000,863</b>	<b>3,644,085</b>
<b>Total pension liability - end of year (a)</b>	<b>4,675,562</b>	<b>4,383,413</b>	<b>4,000,863</b>
<b>Plan net position</b>			
Contributions - employer	136,115	103,430	110,766
Contributions - member	32,785	33,679	32,821
Net investment income	415,157	(187,283)	338,894
Benefits payments	(79,137)	(63,634)	(52,784)
Administrative expense	(12,918)	(11,939)	(9,730)
Refunds of contributions	(2,179)	(1,396)	(1,637)
Other	2,810	1,012	1,342
<b>Net change in plan net position</b>	<b>492,633</b>	<b>(126,131)</b>	<b>419,672</b>
<b>Plan net position - beginning of year</b>	<b>4,461,998</b>	<b>4,588,129</b>	<b>4,168,457</b>
<b>Plan net position - end of year (b)</b>	<b>4,954,631</b>	<b>4,461,998</b>	<b>4,588,129</b>
<b>Net pension liability end of year (a - b)</b>	<b>\$ (279,069)</b>	<b>\$ (78,585)</b>	<b>\$ (587,266)</b>
<b>Ratio of plan net position to total pension liability (b / a)</b>	<b>105.97%</b>	<b>101.79%</b>	<b>114.68%</b>
<b>Covered employee payroll</b>	<b>\$ 438,114</b>	<b>\$ 446,201</b>	<b>\$ 426,135</b>
<b>Net pension liability as a percentage of covered-employee payroll</b>	<b>-63.70%</b>	<b>-17.61%</b>	<b>-137.81%</b>

Note: Schedule is intended to show information for 10 years. Additional years will be displayed as they become available.

## Schedules of Investment Expenses

(Dollar amounts in thousands)

Fiscal Year	Investment Managers*	Investment Administrative Expenses	Investment Consultants	Investment Custodian	Total Investment Expenses
2016	\$11,811	\$1,051	\$1,017	\$275	<b>\$14,154</b>
2015	10,118	879	1,030	229	<b>12,256</b>
2014	11,400	868	1,019	369	<b>13,656</b>
2013	5,499	934	975	131	<b>7,539</b>
2012	7,116	1,011	686	210	<b>9,023</b>
2011	10,622	874	334	285	<b>12,115</b>
2010	11,980	790	455	254	<b>13,479</b>
2009	10,676	735	531	319	<b>12,261</b>
2008	14,300	650	495	485	<b>15,930</b>
2007	11,586	n/a	381	958	<b>12,925</b>

\*Fees paid to traditional investment managers only; traditional investment managers are those that invest primarily in public equity and fixed income securities. A significant number of alternative investments are presented net of expenses. Management expenses are netted against investment income and because they are not readily separable from specific investment income as of the financial statement reporting date, amounts are recorded and reported net of management expenses and therefore are not included on this schedule.

## Schedule of Annual Money-Weighted Rates of Return

(Dollar amounts in thousands)

Fiscal Year	Total Portfolio
2016	9.346%
2015	-4.006%
2014	8.178
2013	-
2012	-
2011	-
2010	-
2009	-
2008	-
2007	-

Note: This is a 10-year schedule. However, the information in this schedule is not required to be presented retroactively. Years will be added in the future fiscal years until 10 years of information is available.

## Schedules of Administrative Expenses

(Dollar amounts in thousands)

	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
<b>Personal services</b>										
Salaries	\$ 6,181	\$ 4,760	\$ 4,401	\$ 3,955	\$ 4,114	\$ 3,907	\$ 3,263	\$ 2,889	\$ 2,758	\$ 2,314
Fringe benefits	1,318	1,301	1,244	1,135	954	1,030	907	716	505	417
<b>Total personal services</b>	<b>7,499</b>	<b>6,061</b>	<b>5,645</b>	<b>5,090</b>	<b>5,068</b>	<b>4,937</b>	<b>4,170</b>	<b>3,605</b>	<b>3,263</b>	<b>2,731</b>
<b>Non-personal services</b>										
Office supplies	99	126	115	187	157	166	120	120	131	118
Telephone	91	71	56	50	49	14	13	17	33	21
Rent	1,754	1,634	1,554	1,513	1,465	1,444	1,419	1,379	1,282	1,197
Office support	-	-	-	-	1	68	114	60	102	185
Travel	209	206	181	177	148	38	45	67	89	96
Professional fees	6,379	6,225	4,292	3,790	3,069	2,867	2,329	2,371	2,764	3,104
Postage	27	29	25	138	29	38	10	73	55	36
Printing	53	14	15	91	33	35	35	19	56	41
Insurance	151	150	121	114	121	129	131	111	120	57
Dues and memberships	41	32	34	28	26	37	51	60	17	15
Audit costs	63	85	49	76	71	64	66	66	98	54
Actuarial fees	180	153	66	146	153	164	108	93	100	78
Legal fees	337	524	365	529	292	30	37	246	341	199
Investment fees	12,862	11,377	12,788	6,587	7,753	10,907	12,234	11,138	12,393	12,924
Contractual services (STAR)*	1,697	1,077	872	941	-	-	-	-	-	-
Equipment and rental	376	966	995	619	179	734	65	63	100	73
Depreciation	-	-	-	3	6	6	6	18	-	-
<b>Total non-personal services</b>	<b>24,320</b>	<b>22,676</b>	<b>21,528</b>	<b>14,989</b>	<b>13,552</b>	<b>16,741</b>	<b>16,783</b>	<b>15,901</b>	<b>17,681</b>	<b>18,198</b>
<b>Total administrative expenses</b>	<b>\$ 31,819</b>	<b>\$ 28,738</b>	<b>\$ 27,173</b>	<b>\$ 20,079</b>	<b>\$ 18,620</b>	<b>\$ 21,678</b>	<b>\$ 20,953</b>	<b>\$ 19,506</b>	<b>\$ 20,944</b>	<b>\$ 20,929</b>

\*Contractual services (STAR) were included in Professional fees prior to fiscal year 2013

Due to rounding, numbers presented throughout this document may not add up precisely to the totals provided.

## Schedule of Employer Contributions

(Dollar amounts in millions)

Year Ending	Teachers' Retirement Fund		Police Officers and Firefighters' Retirement Fund		Total Fund	
	Annual Required Contribution	Percentage Contributed	Annual Required Contribution	Percentage Contributed	Annual Required Contribution	Percentage Contributed
September 30, 2016	\$ 44.4	100.0%	\$ 136.1	100.0%	\$ 180.5	100.0%
September 30, 2015	39.5	100.0	103.4	100.0	142.9	100.0
September 30, 2014	31.6	100.0	110.8	100.0	142.4	100.0
September 30, 2013	6.4	100.0	96.3	100.0	102.7	100.0
September 30, 2012	-	100.0	116.7	100.0	116.7	100.0
September 30, 2011	-	100.0	127.0	100.0	127.0	100.0
September 30, 2010	-	100.0	132.3	100.0	132.3	100.0
September 30, 2009	-	100.0	106.0	100.0	106.0	100.0
September 30, 2008	6.0	100.0	137.0	100.0	143.0	100.0
September 30, 2007	14.6	100.0	140.1	100.0	154.7	100.0

**Schedule of Annual Salaries and Benefits**

(Dollar amounts in millions)

Fiscal Year	Annual Salaries of Active Members			Annual Retirement Benefits for Retirees & Beneficiaries		
	Teachers	Police Officers and Firefighters	Total	Teachers	Police Officers and Firefighters	Total
2016	\$ 438	\$ 438	\$ 876	\$ 69	\$ 86	\$ 155
2015	417	446	863	63	70	133
2014	379	438	817	59	58	117
2013	369	413	782	53	50	103
2012	381	415	796	47	43	90
2011	384	421	805	42	36	78
2010	338	424	762	37	29	65
2009	337	436	773	32	22	54
2008	359	422	781	25	22	47
2007	375	396	771	24	19	43

## Schedule of Participant Data

Fiscal Year	Active			Retired Members, Beneficiaries, Disabled			Total
	Teachers	Police Officers and Firefighters	Subtotal	Teachers	Police Officers and Firefighters	Subtotal	
2016	5,141	5,359	10,500	3,882	3,003	6,885	<b>17,385</b>
2015	4,866	5,537	10,403	3,718	2,609	6,327	<b>16,730</b>
2014	4,499	5,551	10,050	3,601	2,365	5,966	<b>16,016</b>
2013	4,379	5,510	9,889	3,448	2,183	5,631	<b>15,520</b>
2012	4,495	5,510	10,005	3,285	2,039	5,324	<b>15,329</b>
2011	4,747	5,561	10,308	3,130	1,856	4,986	<b>15,294</b>
2010	4,749	5,708	10,457	2,941	1,552	4,493	<b>14,950</b>
2009	4,601	5,788	10,389	2,770	1,449	4,219	<b>14,608</b>
2008	4,821	5,661	10,482	2,391	1,364	3,755	<b>14,237</b>
2007	5,027	5,550	10,577	2,364	1,314	3,678	<b>14,255</b>

## Schedule of Average Benefit by Type

Teachers' Retirement Plan						
Retirement Effective Dates	Years of Credited Service					
	5-9	10-14	15-19	20-24	25-30	30+
Average Monthly Benefit	\$ 920	\$ 2,192	\$ 2,695	\$ 3,368	\$ 4,431	\$ 5,595
<b>2016</b> Average Final Average Salary	\$ 92,306	\$ 92,608	\$ 96,609	\$ 97,857	\$ 102,000	\$ 103,292
Number of Active Recipients	5	12	21	23	35	35
Average Monthly Benefit	\$ 1,050	\$ 2,140	\$ 2,774	\$ 3,338	\$ 4,387	\$ 5,805
<b>2015</b> Average Final Average Salary	\$ 82,018	\$ 95,786	\$ 97,605	\$ 97,032	\$ 100,959	\$ 103,420
Number of Active Recipients	15	20	8	26	22	43
Average Monthly Benefit	\$ 899	\$ 1,950	\$ 2,375	\$ 3,551	\$ 4,153	\$ 5,669
<b>2014</b> Average Final Average Salary	\$ 79,848	\$ 89,912	\$ 88,883	\$ 100,082	\$ 98,560	\$ 102,092
Number of Active Recipients	16	21	18	26	47	56
Average Monthly Benefit	\$ 1,205	\$ 1,741	\$ 2,499	\$ 3,441	\$ 4,035	\$ 5,427
<b>2013</b> Average Final Average Salary	\$ 82,567	\$ 84,521	\$ 90,461	\$ 94,689	\$ 94,689	\$ 97,032
Number of Active Recipients	17	18	10	44	36	64
Average Monthly Benefit	\$ 951	\$ 1,637	\$ 2,631	\$ 3,333	\$ 4,025	\$ 5,406
<b>2012</b> Average Final Average Salary	\$ 76,185	\$ 82,578	\$ 90,729	\$ 93,622	\$ 94,547	\$ 96,692
Number of Active Recipients	19	17	8	47	33	62
Average Monthly Benefit	\$ 947	\$ 1,628	\$ 2,361	\$ 3,097	\$ 3,774	\$ 5,216
<b>2011</b> Average Final Average Salary	\$ 80,717	\$ 82,641	\$ 84,659	\$ 89,318	\$ 90,961	\$ 93,310
Number of Active Recipients	11	16	17	46	39	65
Average Monthly Benefit	-	-	-	-	-	-
<b>2010</b> Average Final Average Salary	-	-	-	-	-	-
Number of Active Recipients	-	-	-	-	-	-
Average Monthly Benefit	-	-	-	-	-	-
<b>2009</b> Average Final Average Salary	-	-	-	-	-	-
Number of Active Recipients	-	-	-	-	-	-
Average Monthly Benefit	-	-	-	-	-	-
<b>2008</b> Average Final Average Salary	-	-	-	-	-	-
Number of Active Recipients	-	-	-	-	-	-
Average Monthly Benefit	-	-	-	-	-	-
<b>2007</b> Average Final Average Salary	-	-	-	-	-	-
Number of Active Recipients	-	-	-	-	-	-

Information prior to fiscal year 2011 not available at the time of this report.

## Schedule of Average Benefit by Type

Police Officers and Firefighters' Retirement Plan							
Retirement Effective Dates		Years of Credited Service					
		5-9	10-14	15-19	20-24	25-30	30+
<b>2016</b>	Average Monthly Benefit	\$ 3,701	\$ 2,862	\$ 2,707	\$ 3,987	\$ 5,347	\$ 6,677
	Average Final Average Salary	\$ 54,240	\$ 69,463	\$ 72,901	\$ 83,882	\$ 94,768	\$ 100,699
	Number of Active Recipients	10	7	7	6	253	54
<b>2015</b>	Average Monthly Benefit	\$ 2,363	\$ 3,407	\$ 3,471	\$ 3,860	\$ 5,526	\$ 6,922
	Average Final Average Salary	\$ 45,567	\$ 66,727	\$ 70,827	\$ 76,421	\$ 96,104	\$ 104,521
	Number of Active Recipients	6	7	5	6	182	62
<b>2014</b>	Average Monthly Benefit	\$ 2,343	\$ 4,168	\$ 1,950	\$ 3,776	\$ 5,241	\$ 6,403
	Average Final Average Salary	\$54,678	\$65,126	\$73,476	\$80,064	\$92,091	\$95,990
	Number of Active Recipients	6	1	1	6	143	29
<b>2013</b>	Average Monthly Benefit	\$ 2,773	\$ 2,333	-	\$ 2,561	\$ 5,439	\$ 6,906
	Average Final Average Salary	\$ 40,134	\$ 64,784	-	\$ 77,175	\$ 94,464	\$ 103,254
	Number of Active Recipients	4	4	-	4	97	48
<b>2012</b>	Average Monthly Benefit	\$ 1,795	\$ 2,686	\$ 4,404	\$ 3,622	\$ 5,409	\$ 6,504
	Average Final Average Salary	\$ 46,574	\$ 65,588	\$ 74,368	\$ 78,462	\$ 92,618	\$ 96,968
	Number of Active Recipients	3	2	3	4	96	38
<b>2011</b>	Average Monthly Benefit	\$ 2,195	\$ 25,164	\$ 3,048	\$ 3,090	\$ 5,600	\$ 6,679
	Average Final Average Salary	\$ 61,882	\$ 66,531	\$ 78,270	\$ 82,825	\$ 95,099	\$ 99,070
	Number of Active Recipients	8	4	3	19	104	33
<b>2010</b>	Average Monthly Benefit	-	-	-	-	-	-
	Average Final Average Salary	-	-	-	-	-	-
	Number of Active Recipients	-	-	-	-	-	-
<b>2009</b>	Average Monthly Benefit	-	-	-	-	-	-
	Average Final Average Salary	-	-	-	-	-	-
	Number of Active Recipients	-	-	-	-	-	-
<b>2008</b>	Average Monthly Benefit	-	-	-	-	-	-
	Average Final Average Salary	-	-	-	-	-	-
	Number of Active Recipients	-	-	-	-	-	-
<b>2007</b>	Average Monthly Benefit	-	-	-	-	-	-
	Average Final Average Salary	-	-	-	-	-	-
	Number of Active Recipients	-	-	-	-	-	-

Information prior to fiscal year 2011 not available at the time of this report.

### Schedule of Retired Members by Type of Benefit and Option Selected

Teachers' Retirement Plan														
Amount of Monthly Benefit	Number of Members by Retirement Type							Number of Members by Option Selected						
	A	B	C	D	E	F	G	Total	1	2	3	4	Total	
\$1-250	10		0		19	2	2	33	10					10
\$251-500	49		0		13	6	1	69	43	5	1			49
\$501-750	74	2	0	1	25	11	1	114	69	8				77
\$751-1,000	79	7	0	2	11	5	1	105	68	17	3			88
\$1,001-1,250	52	5	0	2	17	14	1	91	42	16	1			59
\$1,251-1,500	65	4	0	8	30	26	5	138	58	17	1	1		77
\$1,501-1,750	71	12	0	15	35	8		141	70	25	2	1		98
\$1,751-2,000	87	6	0	34	20	10	1	158	106	20	1			127
\$2,001-3,000	592	56	0	155	113	12	3	931	637	162	4			803
\$3,001-4,000	1580	116	0	80	31	3		1810	1320	446	8	2		1776
\$4,001-5,000	1532	76	0	9	2			1619	1288	326	3			1617
\$5,001-6,000	586	34	0	2	1			623	478	143	1			622
\$6,001-7,000	189	12	0					201	158	43				201
\$7,001-8,000	57	1	0		1			59	49	9				58
\$8,001-9,000	22		0					22	18	4				22
\$9,001-10,000	2	1	0					3	2	1				3
over \$10,000	3		0					3	2	1				3
<b>Grand Total</b>	<b>5050</b>	<b>332</b>	<b>0</b>	<b>308</b>	<b>318</b>	<b>97</b>	<b>15</b>	<b>6120</b>	<b>4418</b>	<b>1243</b>	<b>25</b>	<b>4</b>	<b>5690</b>	

**Type of Retirement:**

- A - Retired From Affiliate or Resignation
- B - Termination - Early Involuntary
- C - Partial Total Disability
- D - Disabled not in the Line of Duty
- E - Survivor of a Retired Teacher
- F - Survivor of an Active Teacher
- G - Qualified Domestic Relations Order

**Option Selected:**

- 1 - Unreduced Annuity
- 2 - Reduced Annuity with Survivor Option
- 3 - Reduced Annuity with Life Insurance Benefit
- 4 - Reduced Annuity with Insurable Interest

## Schedule of Retired Members by Type of Benefit and Option Selected

Police Officers and Firefighters' Retirement Plan								
Amount of Monthly Benefit	Number of Members by Retirement Type							Grand Total
	A	B	C	D	E	F	G	
\$1-250		0			5	7	4	16
\$251-500	1	0			32	16	4	53
\$501-750	9	0			5		23	37
\$751-1,000	2	0	1		2	3	27	35
\$1,001-1,250	4	0		1	4	1	39	49
\$1,251-1,500	5	0		2	2		32	41
\$1,501-1,750	4	0	7	12	3	4	27	57
\$1,751-2,000	8	0	35	24	51	1	26	145
\$2,001-3,000	204	0	138	133	1245	21	59	1800
\$3,001-4,000	1031	0	372	57	216	9	12	1697
\$4,001-5,000	1279	0	378	43	53	3	3	1759
\$5,001-6,000	1012	0	85	8	11	1		1117
\$6,001-7,000	610	0	28	3	4	2		647
\$7,001-8,000	321	0	11	1	2			335
\$8,001-9,000	141	0	3			1		145
\$9,001-10,000	55	0	3					58
over \$10,000	112	0	3					115
<b>Grand Total</b>	<b>4798</b>	<b>0</b>	<b>1064</b>	<b>284</b>	<b>1635</b>	<b>69</b>	<b>256</b>	<b>8106</b>

### Type of Retirement

A - Retired From Affiliate or Resignation

B - Termination - Early Involuntary

C - Partial Total Disability

D - Disabled not in the Line of Duty

E - Survivor of a Retired Police Officer or Firefighter

F - Survivor of an Active Police Officer or Firefighter

G - Qualified Domestic Relations Order

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## ADDITIONAL DISCLOSURES

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Names and Addresses of the Board of Trustees.....	121
Schedule of Trustee Sponsored Activities .....	122

**Schedules of Transactions - Board of Trustees**

Trustee Name	Expenditures	
	2016	2015
Lyle Blanchard	\$ 7,132	\$ 8,159
Barbara Blum	9,995	7,964
Joseph Bress	3,248	5,851
Joseph Clark	7,434	9,979
Mary Collins	9,945	9,979
Gary Hankins	7,969	7,541
Darrick Ross	9,979	9,992
Nathan Saunders	9,979	9,589
Edward Smith	1,909	6,046
Thomas Tippet	8,170	8,971
Michael Warren	2,545	0
Lenda Washington	7,166	3,088
<b>Total</b>	<b>\$ 85,471</b>	<b>\$ 87,159</b>

## Names and Addresses of the Board of Trustees

**Lyle M. Blanchard**

District of Columbia Retirement Board  
900 7th Street, NW, Second Floor  
Washington, D.C. 20001

**Barbara D. Blum**

District of Columbia Retirement Board  
900 7th Street, NW, Second Floor  
Washington, D.C. 20001

**Joseph M. Bress**

District of Columbia Retirement Board  
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**Joseph W. Clark**

District of Columbia Retirement Board  
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Washington, D.C. 20001

**Mary A. Collins**

District of Columbia Retirement Board  
900 7th Street, NW, Second Floor  
Washington, D.C. 20001

**Gary W. Hankins**

District of Columbia Retirement Board  
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Washington, D.C. 20001

**Darrick O. Ross**

District of Columbia Retirement Board  
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**Nathan A. Saunders**

District of Columbia Retirement Board  
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Washington, D.C. 20001

**Edward C. Smith**

District of Columbia Retirement Board  
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**Thomas N. Tippett**

District of Columbia Retirement Board  
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**Michael J. Warren**

District of Columbia Retirement Board  
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Washington, D.C. 20001

**Lenda P. Washington**

District of Columbia Retirement Board  
900 7th Street, NW, Second Floor  
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**Jeffery E. Barnett**

District of Columbia Retirement Board  
900 7th Street, NW, Second Floor  
Washington, D.C. 20001

## Schedule of Trustee Sponsored Activities

Mary Collins	
Service Provider:	Mansion Affair
Activity:	For participants of National Conference on Public Employee Retirement Systems (NCPERS)
Date:	05/04/2015
Purpose:	Public pension education
Service Provider:	Scott & Scott (Legal)
Activity:	Discussion of legal product
Date:	05/05/2015
Purpose:	Governance and legal awareness
Service Provider:	Mid-Atlantic Plan Sponsors (MAPS)
Activity:	Conference
Date:	06/03/2015 - 06/05/2015
Purpose:	Public pension education

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## Acknowledgments and Credits

### **On the Cover, clockwise:**

District of Columbia (DC) Flag, courtesy NBC4 Washington  
DC Firefighter in response, courtesy Fire and EMS Department  
DC Police Officers, courtesy WTTG Fox News Washington May, 2016  
DC Public School Classroom: Photograph by John McDonnell, courtesy, The Washington Post

### **Page 1, Introductory Section:**

Teacher and students, courtesy DC Public Schools  
Police officers demonstrating fingerprinting techniques at a DC public school: Courtesy, Metropolitan Police Department  
Fire engine #3: Photograph by Victor Dvorak, courtesy, Fire and EMS Department

### **Page 15, Financial Section:**

Fire engines by the U.S. Capitol: Courtesy, Fire and EMS Department  
Police vehicles, courtesy DCRB staff  
Roosevelt High School building: Courtesy, DC Public Schools

### **Page 61, Investment Section:**

DC Firefighter in response, courtesy Fire and EMS Department  
Police officers, courtesy Metropolitan Police Department  
Dunbar High School student hall, courtesy DC Public Schools

### **Page 75, Actuarial Section:**

DC Police Logo, courtesy Metropolitan Police Department  
Police vehicles, courtesy DCRB staff  
Interior of Luke Moore High School: Photograph by Nikki Khan; courtesy, The Washington Post  
Fire Hazmat unit, courtesy Fire and EMS Department

### **Page 103, Statistical Section:**

Police motorcycle motorcade, courtesy Metropolitan Police Department  
Student at Randle Highlands Elementary, courtesy DC Public Schools  
Fire house and fire engine, courtesy DCRB staff



**District of Columbia Retirement Board**  
**900 7th Street NW**  
**2nd Floor**  
**Washington, D.C. 20001**