900 7th Street, NW, 2nd Floor
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OPEN SESSION

NOTICE OF REGULAR BOARD MEETING
JOSEPH W. CLARK, CHAIRMAN

AGENDA
THURSDAY, JANUARY 18, 2018
1:00 PM

1:00 PM I. **CALL TO ORDER AND ROLL CALL**

II. **APPROVAL OF BOARD MEETING MINUTES FOR DECEMBER 14, 2017**

III. **CHAIR'S COMMENTS**

2:00 PM IV. **EXECUTIVE DIRECTOR'S REPORT**

V. **INVESTMENT COMMITTEE REPORT -- ACTION ITEMS**

VI. **OPERATIONS COMMITTEE REPORT**

VII. **BENEFITS COMMITTEE REPORT**

VIII. **LEGISLATIVE COMMITTEE REPORT**

IX. **AUDIT COMMITTEE REPORT-- ACTION ITEMS**

X. **OTHER BUSINESS -- CLOSED SESSION**

MEETING WILL CONVENE IN CLOSED SESSION TO DISCUSS PARTICIPANT BENEFIT INFORMATION AND TO CONSULT PURSUANT TO D.C. CODE SECTION 1-736(B); SECTION 1-909.05(D); AND SECTION 2-575(B)(4)(A).

3:00 PM XI. **ADJOURNMENT**

ADDITIONAL MEETING MATERIALS
- CONFERENCES & MEETINGS LISTING
- TRUSTEES & STAFF TRAINING AND TRAVEL REPORT

District of Columbia Retirement Board

Investment Managers Diversity Data
As of November 30, 2017

Note: Due to the sensitivity of the data, the Investment Managers have provided such information on a Confidential basis.

Asset Class	Investment Structure	% of Portfolio As of 9/30/2017	Minority /Women Ownership	Relationship Manager/ Portfolio Manager/ Research Team with Diversity and by %	Example of Team Diversity
Domestic Equity	Separate Account	2.3%	100.0% Minority owned	31.0% Minorities in Investments & Marketing 24.0% Women in Client Service & Operations	All founders/owners are minorities.
	Index	20.4%	Publicly traded company; cannot disclose percentage ownership.	37.3% Women 26.9% Minority	
	Separate Account	1.7%	31.0% Women owned 18.0% Minority owned		Client Relations Team: 57.0% women and 17.0% minorities
International Developed Market Equity	Fund	1.9%	3.0% Women owned 10.0% Minority owned	9 Women 8 Minorities	3 Principals are minorities Chief Operating Officer and Trader are minorities Minorities in essential roles in Operations/Finance/Administration
	Fund	1.8%	37.0% Women owned 5.0% Minority owned	2 Women 1 Minority on Investment Team	2 women Portfolio Managers 1 minority Portfolio Manager 1 woman Senior Trader Minority/woman-Director of Client Service & Marketing. Supported by two women
	Index	16.8%			Chief Investment Officer is a woman
International Emerging Market Equity	Fund	1.7%	5.5% Women/ Minority owned	55.0%	Research/Portfolio Construction Team
	Index	8.4%			
Fixed Income	Fund	3.2%		32.0%	Investment team: 32.0% women or minorities Senior infrastructure team: 60.0% women or minorities
	Indices	12.3%	Publicly traded company; cannot disclose percentage ownership		Relationship Management Team: 56.8% women or minorities Portfolio Management Team: 51.4% women or minorities
	Separate Account	3.6%	3.4% Women owned		Investment team: 15.0% women and 10.0% minority Relationship management: 44.0% women
	Fund	2.3%	54.0% UK Employee Equity Holders: 18.9% Women owned 12.2% Minority owned	Global Fixed Income & Currency Team: 25% Women 12.5% Minorities	Senior Portfolio Managers: 33.3% woman 33.3% minorities Portfolio Manager: 33.3% women
	Fund	3.5%	47.0% Women/Minority owned	31.0% Women/Minorities	
Absolute Return	Fund	4.2%	2.0% Women owned 1.0% Minority owned	66.0% Women/Minorities	Relationship Management Team: 1 minority and 1 woman
PublicReal Estate	Index	2.1%	Publicly traded company; cannot disclose percentage ownership.	37.3% Women 26.9% Minority	
Private Markets	Fund	NA	51.0% Minority owned	47.0% Women/Minorities (9 out of 19 professionals)	
	Fund	1.6%	23.0% Women owned	50.0%	2 Women Partners & 1 Relationship Manager

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EXECUTIVE DIRECTOR REPORT
January 18, 2018

Activities	Updates
Certification of District Contribution to Fund for Fiscal Year (FY) 2019	On January 9, 2018, letters were sent to Mayor Bowser and Council Chairman Mendelson certifying the amount of the District's contribution to the Teachers' Retirement Fund and the Police Officers and Fire Fighters' Retirement Fund for FY 2019. Copies of these letters are attached for your information.
Classification and Compensation Study Update	A draft of PRM's Classification & Compensation Report, containing its findings and recommendations, was presented to me on January 9, 2018. They are scheduled to share the draft with DCRB's Executive Leadership Team and with the Operations Committee. The final Report will be presented to the Board at its meeting in February or March.
Updated Fact Sheets	Attached for your information are updated fact sheets for the Police/Fire Plan, the Teachers' Plan and Funding that reflect information in DCRB's FY 2017 financial statements and provided in the October 1, 2017 Actuarial Valuation Report. You will also note that the slides shown on the flat-screen monitors have also been updated to reflect that new information.
Actuarial Projection Study	As noted during the December 2017 Board meeting, now that the FY 2017 Actuarial Valuation Report is completed, Cavanaugh Macdonald (Cavanaugh) will work on an Actuarial Projection Study to help guide future investment decisions. DCRB's last projection study was completed by Cavanaugh in 2012. It is expected that the Study will be presented at the March Board meeting.
DCRB-Issued Mobile Phones Update	As noted at the December Board meeting, by the end of this month, the District will begin restricting access to "dc.gov" email to only those devices managed by the Office of the Chief Technology Officer. To be sure that we will have timely access to key staff in the execution of normal business, during emergencies, and for continuity of operations, DCRB will begin issuing cell phones to key staff. An assessment of who should receive one of these phones is in progress and we expect to issue them around the end of this month. You should be aware that since DCRB-managed devices will not be affected, there should be no change to iPads issued to Trustees.

Unrelated Business Income Tax (UBIT) Update	As also noted at the December 2017 Board meeting, DCRB joined several other retirement systems and national pension organizations in sending letters to members of Congress expressing our concern about a provision in the House version of the Tax Cuts and Jobs Act (the Act) which would have subjected certain investments in our portfolio to the UBIT. As expressed in the attached letter from Hank Kim of NCPERS, our efforts resulted in the exclusion of the UBIT provision from the Act. DCRB will continue to monitor legislation and to work with these other organizations on mutual interest.
Meeting With ODCP	DCRB met with Nancy Ostrowski and other ODCP staff on December 19, 2017 to discuss topics of mutual concern that included: updating the 2005 Master MOU, the 2018 MOU and Service Level Agreement, the status of DCRB's Pension Information Management System project, plans for the maintenance of STAR, the DC coding error project, ODCP's long-term business planning effort, the Treasury Offset Program and most importantly the future relationship between DCRB and ODCP. Those who attended the meeting felt that much was accomplished by these discussions.
Summary Plan Descriptions (SPDs) Update	The DCRB Communications Department has consolidated comments received from Treasury, DCRB's Legal and Benefits Departments, and the District human resources departments related to the 2017 SPDs. The SPDs have been subjected to an initial proofing and will be distributed to Trustees this week for your review and input by the end of this month. We expect to distribute the new SPDs (electronically to actives and in hard copy to retirees) in late February.
Top Colorado PERA Executive Remembered	Executive Director Gregory Smith died suddenly on December 12. Greg was an industry leader, serving as co-chair of CII, member of the National Association of Public Pension Attorneys, Executive Committee member of the National Council on Teacher Retirement and former board chairman for the National Institute on Retirement Security. He was remembered as a tireless advocate for public pension fund participantsdcr.
Staffing Changes Since the Last Board Meeting	**Jason Todd**, IT Group Program Manager, is leaving DCRB on January 12, 2018 to pursue a career in supply chain management and organizational change. Jason was hired by DCRB on July 6, 2015, and made significant contributions to the Agency on the Retirement Modernization Program and other operational improvements. We wish Jason the best in his new endeavor.
Recent Retirement-Related Articles (attached)	"Relieving Pension Tension?," The Pension Research Council, Gene Kalwarski, December 6, 2017. "The Funded Status of Local Pensions Inches Closer to States," Center for Retirement Research, Jean-Pierre Aubry, Caroline V. Crawford, and Alicia H. Munnell, January 2018. [Note reference to DC Plans in the Appendix.]

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January 9, 2018

The Honorable Muriel Bowser
Mayor of the District of Columbia
John A. Wilson Building
1350 Pennsylvania Avenue, NW
Washington, DC 20004

Re: Certification of the District of Columbia Fiscal Year 2019 (FY 2019) Contribution to the Teachers' Retirement Fund and the Police Officers and Fire Fighters' Retirement Fund

Dear Mayor Bowser:

Pursuant to D.C. Official Code, 2001 Ed § 1-907.03(b), the District of Columbia Retirement Board ("Board") is required to certify to the Mayor and the Council of the District of Columbia, not less than thirty (30) days prior to submission of the Mayor's annual budget for the District of Columbia government to the D.C. Council, the actuarially determined employer contribution for each separate retirement fund: (i) the Teachers' Retirement Fund and (ii) the Police Officers and Fire Fighters' Retirement Fund (collectively, the "Fund"). Accordingly, the law requires the Mayor and the Council to include the entire certified amount in the District of Columbia annual budget.

On December 14, 2017, Trustees of the Board approved the enrolled actuary's (Cavanaugh Macdonald Consulting, LLC) enclosed certification of the District of Columbia FY 2019 payment to the Funds. As in past years, the enrolled actuary's calculation of the District's contribution to the Fund is based on data provided by the District Government and the U.S. Department of the Treasury. This letter constitutes the Board's statutorily required certification of the District's contribution to the Funds for FY 2019, as noted in this table:

Retirement Fund	Actuarially Determined Employer Contribution	FY 2019 District Payment (in thousands)
Teachers' Retirement Fund	11.09%	$ 53,343
Police Officers and Fire Fighters' Retirement Fund (Combined)	21.09%	$ 91,284
Total FY 2019 District Contribution		**$ 144,627**

Should you have any questions or concerns, please do not hesitate to contact me at (202) 343-3200.

Sincerely,

Sheila Morgan-Johnson
Executive Director

Enclosure: Actuarial Certification

cc: Trustees of the D.C. Retirement Board

Required Actuarial Certification
Under District of Columbia Code §1-907 for Fiscal Year 2019

Certification	Code Section	Teachers	Police	Fire	Police/Fire Combined	Total District
FY 2019 Employer Normal Cost Rate	N/A	7.55%	32.15%	35.46%	33.21%	20.30%
FY 2019 Unfunded Accrued Liability Cost Rate	N/A	3.54%	(13.10)%	(10.07)%	(12.12%)	(4.24)%
Estimated FY 2019 Covered Payroll	N/A	$466,792,000	$312,265,000	$148,421,000	$460,686,000	$927,478,000
FY 2019 Employer Normal Cost	1-907.03(a)(3)(A)	$35,243,000	$100,393,000	$52,630,000	$153,023,000	$188,266,000
FY 2019 Unfunded Accrued Liability Payment	1-907.03(a)(3)(C)	$16,524,000	$(40,907,000)	$(14,946,000)	$(55,853,000)	$(39,329,000)
FY 2019 District Payment before 1-907.02 (c)	N/A	$51,767,000	$59,486,000	$37,684,000	$97,170,000	$148,937,000
FY 2017 Shortfall/Overpayment	1-907.02 (c)	$1,576,000	$(4,964,000)	$(922,000)	$(5,886,000)	$(4,310,000)
FY 2019 District Payment	N/A	$53,343,000	$54,522,000	$36,762,000	$91,284,000	$144,627,000
Present Value of Future Benefits	1-907.03(a)(3)(B)	$2,676,644,689	$4,667,571,371	$2,151,708,008	$6,819,279,379	$9,495,924,068
Current Value of Assets	1-907.03(a)(3)(D)	$2,051,006,000	$3,949,044,772	$1,680,866,228	$5,629,911,000	$7,680,917,000
Actuarial Value of Assets	1-907.03(a)(3)(E)	$1,982,018,820	$3,794,953,866	$1,611,413,534	$5,406,366,400	$7,388,385,220

Actuarial Assumptions

The actuarial assumptions used for the valuation represent the actuary's best estimates of the future experience for the plans. Upon review of recommended economic assumptions, the Board elected to choose an interest rate assumption slightly more conservative than the actuary's recommended rate.

Edward J. Koebel

1/5/18

(Date)

Edward J. Koebel, EA, FCA, MAAA

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January 9, 2018

The Honorable Phil Mendelson
Chairman, Council of the District of Columbia
John A. Wilson Building
1350 Pennsylvania Avenue, NW
Washington, DC 20004

Re: Certification of the District of Columbia Fiscal Year 2019 (FY 2019) Contribution to the Teachers' Retirement Fund and the Police Officers and Fire Fighters' Retirement Fund

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Sincerely,

Sheila Morgan-Johnson
Executive Director

Enclosure: Actuarial Certification

Page 2
January 9, 2018

cc: Councilmember Kenyan McDuffie
Councilmember Anita Bonds
Councilmember David Grosso
Councilmember Elissa Silverman
Councilmember Robert C. White, Jr.
Councilmember Brianne K. Nadeau
Councilmember Jack Evans
Councilmember Mary M. Cheh
Councilmember Brandon T. Todd
Councilmember Charles Allen
Councilmember Vincent C. Gray
Councilmember Trayvon White, Sr.
Trustees of the D.C. Retirement Board

Board Members
January 5, 2018
Page 3

Required Actuarial Certification
Under District of Columbia Code §1-907 for Fiscal Year 2019

Certification	Code Section	Teachers	Police	Fire	Police/Fire Combined	Total District
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Edward J. Koebel

1/5/18

Edward J. Koebel, EA, FCA, MAAA

(Date)

DCRB QuickFacts   Funding (as of September 30, 2017)

Members	19,295 10,511 active members paying into the system 7,114 retirees and beneficiaries receiving benefits 1,670 terminated members with a deferred vested benefit
Total 2017 Benefits Paid (in thousands)	$172,419 includes benefit payments, refunds and transfers
Funded Status **Police/Fire** **Teachers** Both Plans	Based on actuarial value. 110.8% based on the actuarial value of Plan assets (Police: 111.2% and Fire: 109.9%) 92.5% based on the actuarial value of Plan assets 105.2% Combined
Total Fund Assets (in thousands)	$7,751,965 (market value) $5,682,194 total in Police/Fire Plan $2,069,771 total in Teachers' Plan
Investment Returns (annualized-gross of fees)	13.0% 1-Year; 4.2% 10-Year 5.9% 3-Year; 8.8% since inception (1982) 7.5% 5-Year
Employee Contribution Rate	7% if hired before Nov. 1(Teachers) or Nov. 10 (Police/Fire) 1996 8% if hired on/after Nov. 1 (Teachers) or Nov. 10 (Police/Fire) 1996
Funding Sources (in thousands)	$ 67,788 employee contributions $202,412 employer contributions $894,864 investment earnings
Cash Flow (in thousands)	$1,165,064 contributions + investment earnings (inflows) $- 189,879 benefit payments + expenses (outflows) $ 975,185 positive cash flow
Economic Assumptions	6.5% Investment Rate of Return 3.5% Inflation Rate 4.25% Wage Inflation Rate
Actuarial Cost Method	Entry Age Normal
Asset Valuation Method	5-Year Smoothing
COLA Assumptions (maximums)	4.25% Members hired before November 1, 1996. 3.00% Members hired on or after November 1, 1996.

DCRB QuickFacts Police/Fire Plan (as of Sept. 30, 2017)

Members	8,867 5,312 active members paying into the system 3,215 retirees and beneficiaries receiving benefits 340 terminated members with a deferred vested benefit
Total 2017 Benefits Paid (in thousands)	$94,184 (benefit payments, refunds and transfers)
Funded Status	110.83% based on the actuarial value of Plan assets
Total Fund Assets (in thousands)	$5,682,194 market value
Employee Contribution Rate	7% if hired before November 10, 1996 8% if hired on/after November 10, 1996
Effective Date	July 1, 1997
Average Salary Hired before February 15, 1980 Hired on/after February 15, 1980	▪ Highest 12 consecutive months of pay, divided by three ▪ Highest 36 consecutive months of pay, divided by three
Vesting	Five or more years of service
Service Retirement Hired before November 10, 1996 Hired on/after November 10, 1996 * mandatory retirement age	• Any Age, 20 Yrs. of Service, hired before February 15, 1980 • Age 50, 25 Yrs. of Service with MPD • Age 60, 5 Yrs. of Service with MPD* • Any Age, 25 Yrs. of Service with MPD • Age 60, 5 Yrs. of Service with MPD*
Benefit Formula Hired before November 10, 1996 Hired on/After November 10, 1996	2.5% of Average Salary times up to 25 yrs. of service* + 3.00% of Average Salary times over 25 yrs. of service* + 2.5% of Average Salary times purchased or credited service 2.5% of Average Salary times total service * 20 years if hired before February 15, 1980.
For Deaths in Line-of-Duty	100% of Final Pay Spousal Benefit $50,000 Lump-Sum benefit
COLAs Capped at 3% if hired on/after November 1, 1996	Effective: March 1 Payable: April 1 2017 COLA: 2.1%

District of Columbia Retirement Board September 30, 2017

DCRB QuickFacts Teachers' Plan (as of Sept. 30, 2017)

Members	10,428 5,199 active members paying into the system 3,899 retirees and beneficiaries receiving benefits 1,330 terminated members with a deferred vested benefit
Total 2017 Benefits Paid (in thousands)	$78,235 (benefit payments, refunds and transfers)
Funded Status	92.51% based on the actuarial value of Plan assets
Total Fund Assets (in thousands)	$2,069,771 market value
Employee Contribution Rate	7% if hired before November 1, 1996 8% if hired on/after November 1, 1996
Effective Date	July 1, 1997
Average Salary	Highest 36 consecutive months of pay, divided by three.
Vesting	Five or more years of service
Service Retirement Hired before November 1, 1996	• Age 55, 30 Yrs. of Service, including 5 years with DCPS • Age 60, 20 Yrs. of Service, including 5 years with DCPS • Age 62, 5 Yrs. of Service with DCPS
Hired on/after November 1, 1996	• Any Age, 30 Yrs. of Service, including 5 years with DCPS • Age 60, 20 Yrs. of Service, including 5 years with DCPS • Age 62, 5 Yrs. of Service with DCPS
Involuntary Retirement	Age 50, 20 Yrs. of Service, including 5 Yrs. with DCPS Any Age, 25 Yrs. of Service, including 5 Yrs. with DCPS
Benefit Formula Hired before November 1, 1996	1.5% of Average Salary times up to 5 yrs. of service + 1.75% of Average Salary times 6 through 10 yrs. of service+ 2.0% of Average Salary times service
Hired on/After November 1, 1996	2.0% of Average Salary times total service
COLAs Capped at 3% if hired on/after November 1, 1996	Effective: March 1 Payable: April 1 2017 COLA: 2 0%

From: Alyssa Carlson [mailto:alyssa@ncpers.org] **On Behalf Of** Kim, Hank
Sent: Monday, December 18, 2017 11:55 AM
Subject: UBIT Out of Final Conference Agreement

NASRA NCPERS 1941 NC TR

UBIT is OUT!

The final conference agreement between the House and Senate on the Tax Cuts and Jobs Act (H.R. 1) does NOT include Section 5001 of the House-passed bill, which would have imposed the Unrelated Business Income Tax (UBIT) on certain investments of governmental plans. The unprecedented new tax would have reversed 40 years of IRS policy of not applying UBIT to public pensions, and imposed significant, complex compliance costs that could adversely impact portfolio construction and diversification of public funds.

The specific language dealing with the House-passed language and its exclusion from the final bill can be found beginning on page 404 of the Conference Report.

NASRA, NCPERS and NCTR wish to thank all of the many members of our organizations who contacted their Congressional delegations (often repeatedly) by phone, email, text and in person; as well as rallied others to oppose this costly new tax. It was truly a team effort! And given the potential cost impact and the implications for future Federal intervention, it was a HUGE victory.

Jeannine Raymond	Leigh Snell	Hank Kim
NASRA	NCTR	NCPERS
e-mail; (202) 624-1417	e-mail; (540) 333-1015	email; 877-202-5706

Sincerely,

Hank Kim, Esq.
Executive Director & Counsel

1

https://www.forbes.com/sites/pensionresearchcouncil/2017/12/06/relieving-pension-tension/2/#4a6ba47f5afa

Relieving Pension Tension?

THE PENSION RESEARCH COUNCIL

Pension Research Council Opinions expressed by Forbes Contributors are their own.

POST WRITTEN BY

Gene Kalwarski

Gene Kalwarski is CEO and founder of Cheiron Inc., and actuary to many of the nation's largest multiemployer and public pension plans.

Shutterstock

Some observers have recently suggested that multiemployer or industry pension plans in the U.S. have bounced back fully since the 2008 recession, and it's time to break out the champagne. Not so fast!

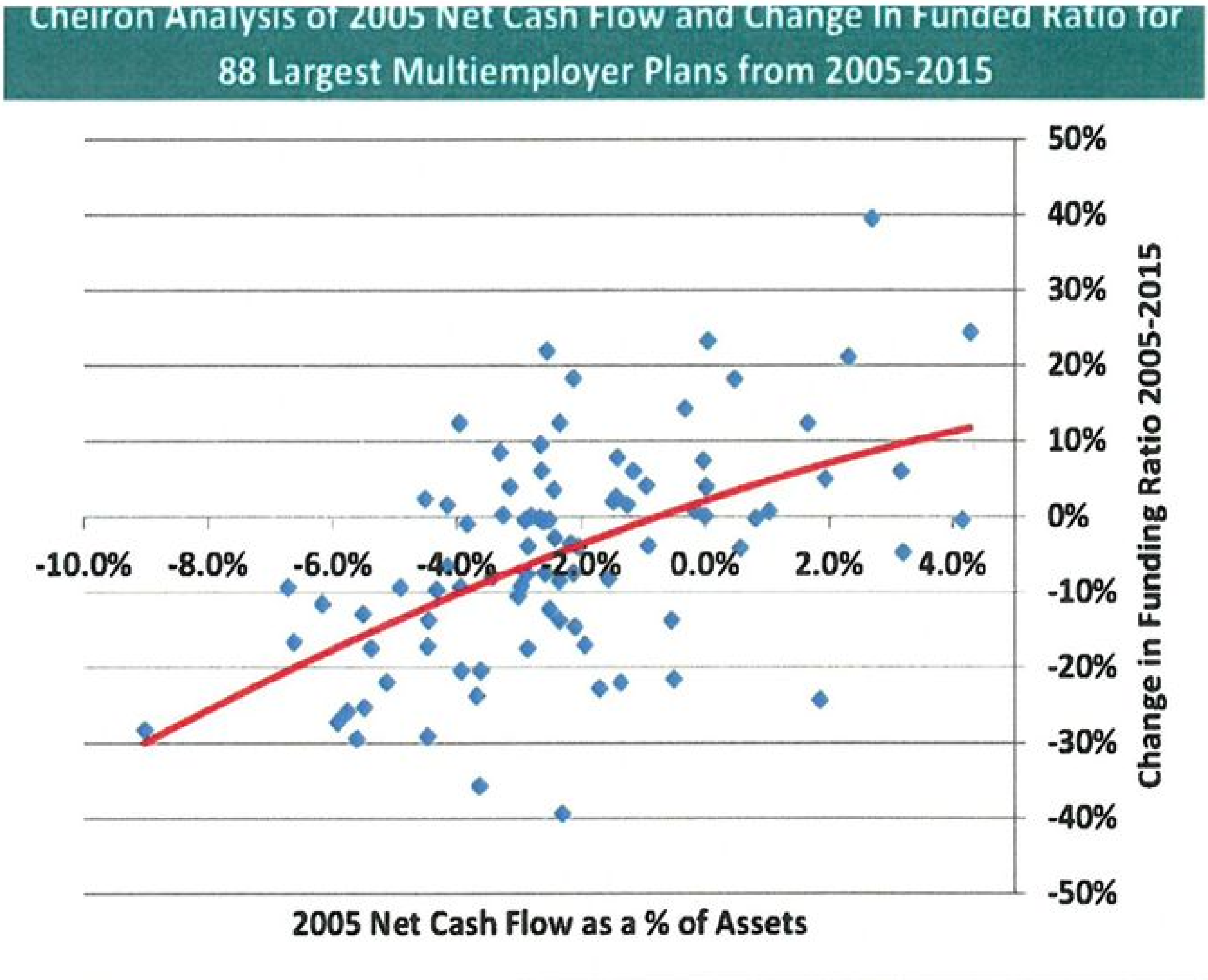
For years, the gold standard for determining the financial stability of pension plans was their *funding ratio*, or the ratio of assets to liabilities. Conventional wisdom held that pension plans with assets sufficient to cover 80 percent or more of their liabilities were reasonably well-funded. But a pension plan's funding ratio is just a snapshot at a point in time. Focusing only on the funding ratio tends to lull plan sponsors into believing they are financially stable even when they are not.

A Better Solvency Measure

A more meaningful way to determine which pension plans will survive in the long term is to examine not only their funding ratios but also their *maturity*. For example, industry pension plans are generally termed "mature" if they have more retirees than active workers and a negative net cash flow, paying out more in benefits than they're receiving in contributions.

A key takeaway from the financial crisis of nearly a decade ago is that even the apparently best-funded pension plans are vulnerable to downturns if they are mature. In fact, it is possible that a plan 50 percent funded but not mature could be better positioned to withstand a recession than a mature plan considered "safe" with a funding ratio of 80 percent or higher.

To examine how multiemployer pension plans withstood the downturn, we have analyzed 88 of the largest multiemployer plans for which data are publicly available going back to 2005, before the Great Recession. We then compared these results with 2015 data. The set of plans we evaluate include 69 percent of all participants in multiemployer plans, and they hold assets totaling 59 percent of all such pension assets. Our analysis showed a very close link between a plan's net cash flow before the economic downturn and the change in its funding levels since then. In particular, the worse a plan's cash flow position in 2005, the greater its funding ratio fell between 2005 and 2015. This is depicted in the chart below.



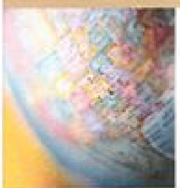
Based on the Form 5500 filings for 2005 and 2015.
www.cheiron.us

In our view, pension plans that are well-funded but mature must act *now*, before the next downturn hits. They should review their asset allocation and consider whether to dial back on their risk. Our analysis reveals that, by the time the plans have more than 2.5 retirees per every active worker and a negative cash flow of more than 5 percent of assets, it may be difficult for them to recover from another downturn.

One approach would be for mature pension plans to use interest and principal payments from their bond portfolios to pay benefits, instead of actively trading bonds and exposing their plan to interest rate risk.

Legislation recently proposed by Ohio Democrat Sen. Sherrod Brown to rescue financially-troubled union pension plans goes one step further than this. His proposal is that a new government entity within the US Treasury be designated to lend money to "critical and declining" pension plans, so long as the money is used to pay off benefits and is not invested in the stock market.

This proposed legislation requires pension plans to use the loans to purchase annuities, or to cash match and thus immunize all benefits owed to retirees. In other words, pension plans would be required to mimic what insurance companies do when they annuitize: invest in bonds, not equities. Early analysis suggests that this legislation could save even the most poorly funded plans.



CENTER *for* RETIREMENT RESEARCH *at* BOSTON COLLEGE

STATE AND LOCAL PENSION PLANS

NUMBER 58, JANUARY 2018

THE FUNDED STATUS OF LOCAL PENSIONS INCHES CLOSER TO STATES

*By Jean-Pierre Aubry, Caroline V. Crawford, and Alicia H. Munnell**

INTRODUCTION

The last comprehensive review of locally adminstered plans in this series found that their funded status – as of 2011 – lagged behind that of state pension plans.[1] Yet much has happened in the public pension landscape since. Plans administered at both the state and local levels have passed a spate of reforms to control rising pension costs and to limit liability growth.[2] This *brief* uses the most recent data available – from 2015 and 2016 – to assess the current status of local plans.

The discussion proceeds as follows. The first section briefly describes the universe of local plans and the sample of plans used in this study. The second section compares trends in the funded status for state and local plans. While local plans have historically trailed states, their funding gap is slowly closing.[3] To better understand this pattern, the third and fourth sections examine two key determinants of the funded status: required contributions and investment returns. The final section concludes that although local plans have paid more of their actuarially required contributions than state plans, relatively poor returns limited their ability to close the gap in the past. More recently, however, local plans have experienced higher actual returns relative to state plans, in part, due to a smaller allocation to alternative investments. As a result, the gap in funded status between the two groups is shrinking.

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An Overview of Local Plans

The Census of Governments reports a total of 6,276 state and local pension plans in 2016, with over $3.7 trillion in assets and 31.2 million members.[4] Of this total, 5,977 plans – amounting to $684 billion in assets and 3.8 million members – are locally administered. So, local plans make up the majority of plans, but the majority of assets and plan members are in state-run plans.

While state plans are few and generally large and local plans are numerous and generally small, local plans range enormously in size. For example, more than 90 percent of local plans had under $1 billion in assets in 2015, but three plans – the New York City Employee Retirement System, the New York City Teachers Retirement System, and the Los Angeles County Employee Retirement System – each had market assets in excess of $40 billion.

State and local plans also differ by the types of employees they cover (see Table 1). While state and local systems have a similar proportion of plans for general employees, state systems have a larger share of plans specifically for teachers, while local systems have a larger share specifically for police and firefighters.

Table 1. Percentage of State and Local Plans and Average Asset Levels by Employee Type, 2015

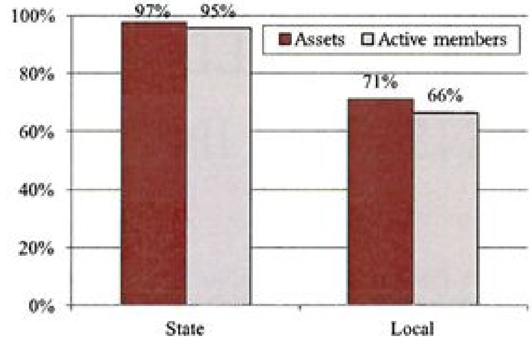
Group covered	Administration level			
	State		Local	
	Percentage of plans	Avg. assets	Percentage of plans	Avg. assets
General employees	58.8%	$26.4	58.3%	$3.8
Teachers	28.1	34.7	9.1	6.9
Police/firefighters	13.2	7.6	32.6	2.6
Total	100.0%	$26.2	100.0%	$3.7

Source: Public Plans Database (PPD) (2015).

This *brief* relies on detailed data for a sample of 130 large local plans that are geographically distributed across the United States (see Appendix for a full list of local plan data).[5] For purposes of comparison, the analysis also includes 114 state plans. The data for all state plans and 55 of the local plans come from the *Public Plans Database* (PPD); the data for the other 75 local plans are collected separately.

Figure 1 shows the proportion of total assets and active members in the public pension universe that the sample represents. For state plans, the sample covers 97 percent of assets and 95 percent of members. For local plans, the sample represents 71 percent of assets and 66 percent of members.

Figure 1. Sample Plans as a Percentage of Total Market Assets and Active Members



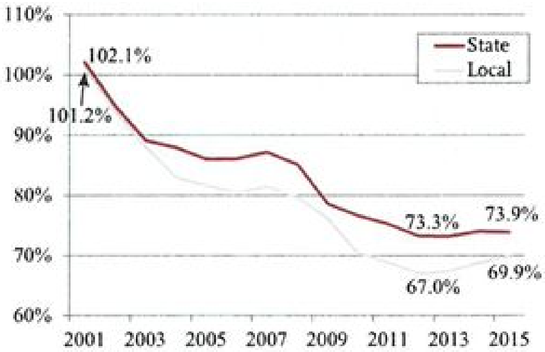
Note: Estimates are based on 2014 data, the last year of complete data.
Sources: Authors' calculations from U.S. Census Bureau (2014); PPD (2014); and various actuarial valuations (AVs) and comprehensive annual financial reports (CAFRs).

Funded Status: State vs. Local Plans

Figure 2 (on the next page) presents the aggregate funded ratios for state and local plans from 2001-2015 as measured under the traditional GASB standards.[6] Using this measure, both state and local plans were overfunded – in aggregate – in the early 2000s, before declining in the wake of two financial crises, with local funding levels declining more sharply than that of states.

Since 2012, however, the gap between state and local funding has been shrinking. The funded status of local plans has increased modestly from 67.0 to 69.9 percent, while the funded status of state plans has remained essentially level between 73.3 to 73.9 percent. To isolate the driving factors behind this recent development, the analysis looks at the key determinants of funded status: contributions and investment returns.

Figure 2. Aggregate Funded Ratios under Traditional GASB Standards, 2001-2015



Note: 2014 and 2015 values for local plans are based on complete data for 91 percent and 81 percent of the sample, respectively. The omitted plans are small (< 1,000 active members), so would have a limited impact on the total.
Sources: Authors' calculations from PPD (2001-2015); and various AVs and CAFRs.

Required Contributions

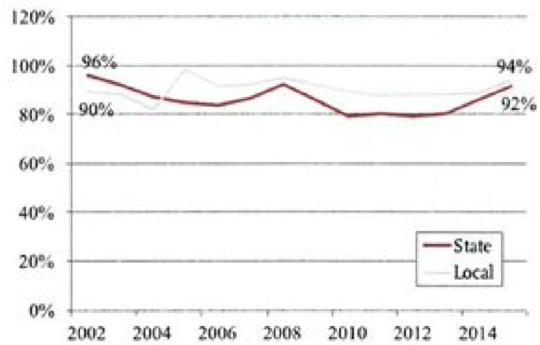
Two aspects of the employer's required contribution are important for funding: 1) how much of the contribution is paid; and 2) how the contribution is calculated.

In 2014, the new GASB standards replaced the Annual Required Contribution (ARC) with the Actuarially Determined Employer Contribution (ADEC). While the two measures have minor conceptual differences, they are generally not material. By using the new ADEC numbers to extend historical ARC data, the analysis is able to evaluate the long-term trends in the percentage of required contributions received.[7]

As shown in Figure 3, since the early 2000s, both state and local plans have received about 90 percent of their reported actuarially required contributions. In fact, localities have paid a slightly higher percentage than states.

Depending on the plan's actuarial methods, paying the required contribution may or may not be enough to make meaningful reductions in the plan's unfunded liability. Many plans use a "level-percentage-of-payroll" method to amortize their unfunded liabilities to keep contributions at a set percentage of government payroll – which is consistent with public sector budgeting objectives. However, this method results in smaller amortization payments in earlier years and larger payments later, based on an assumption that payrolls will increase each year. Coupled with 20- to 30-year amortization periods used by many plans, level-percent-of-pay allows the unfunded liability to grow in the early years of the amortization. An alternative approach used by some plans is a "level-dollar" amortization method that schedules equal annual dollar payments and – for any given amortization period – reduces the unfunded liability more quickly than level percent.[8]

Figure 3. Percentage of Reported Annual Required Contribution Received by Plans, 2002-2015



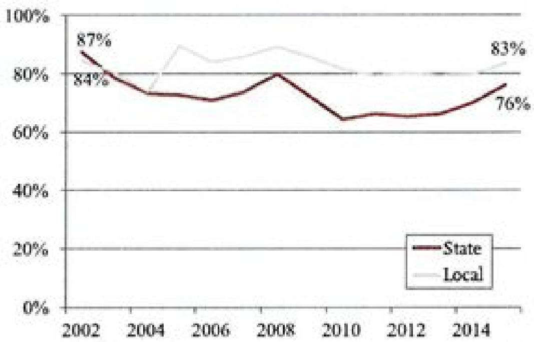
Note: The figure shows the aggregate percentage received. The 2005 spike in the local data reflects pension obligation bonds for the Dallas and Detroit general employee plans.
Sources: Authors' calculations from PPD (2002-2015); and various AVs and CAFRs.

Unfortunately, under either funding method, plans can undermine their own efforts to pay off the unfunded liability by regularly extending their amortization period.[9] This tendency is particularly problematic when using a level-percentage-of-pay method because contributions remain at the initial low levels indefinitely.[10]

Figure 4 (on the next page) shows the percentage of required contributions received by state and local plans when the contribution is recalculated using a level-dollar amortization method – which, holding all other factors constant, pays down the unfunded liability more quickly.[11]

The takeaways are twofold. First, under the more stringent level-dollar method, both state and local plans are receiving much less than is required. This shortfall helps explain the lack of improvement in their funded status. Second, under the level-dollar method, local plans receive more of their required contributions than state plans. For example, in 2015 local plans received 83 percent of the recalculated required contributions compared to only 76 percent for states. This pattern reflects the fact that about a third of local plans already use a level-dollar method, compared to just under a quarter of state plans.[12]

Figure 4. Percentage of CRR-Calculated Annual Required Contribution Received by Plans, 2002-2015



Note: The figure shows the aggregate percentage received. The 2005 spike in the local data reflects pension obligation bonds for the Dallas and Detroit general employee plans.
Sources: Authors' calculations from PPD (2002-2015); and various AVs and CAFRs.

Investment Returns

While localities pay more of their required contribution than states, local plans have been consistently less well funded throughout the period. The key to this conundrum rests with investment returns.

The effect of investment returns on the funded ratio depends on the difference between the expected and actual returns. Each year, pension liabilities grow by the interest rate on existing liabilities. In the public sector, the interest rate is the expected rate of return, which is used to discount future benefits. On the other hand, assets grow by the actual return achieved. If *actual* returns are lower than expected, assets grow at a slower rate than liabilities, leading to a worse funded position. Conversely, if actual returns are higher than expected, assets grow faster than liabilities, causing the funded ratio to increase.

As shown in Table 2, between 2000 and 2012 both state and local plans achieved lower returns relative to their assumptions, contributing to their decline in funding. Since 2013, actual returns for both state and local plans have exceeded assumptions, but local returns have exceeded their assumption by 2.2 percentage points more than state returns. The greater differential for locals since 2013 is due to both higher actual returns and the fact that locals assume a slightly lower return. Between 2013 and 2015, the assumed return for local plans averaged 7.4 percent compared to 7.7 percent for state plans.

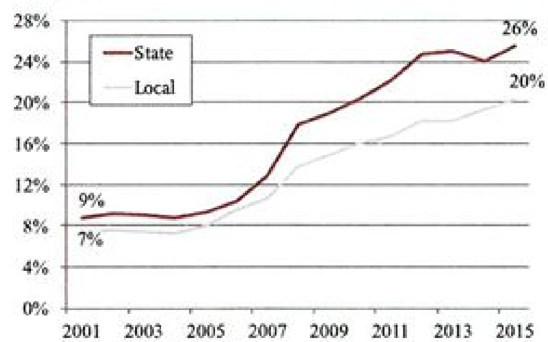
Table 2. Gap between Actual and Assumed Investment Returns, 2000-2012 and 2013-2015

Period	State	Local
2000-2012	-1.5%	-1.7%
2013-2015	9.1	11.3

Source: U.S. Census Bureau (2000-2015) and PPD (2001-2015).

The higher returns for local plans may be due, in part, to their lower allocation to alternative investments such as private equity, hedge funds, real estate, and commodities (see Figure 5).[13] The data show a growing difference between the alternative allocations in state and local plans, which today stands at 6 percentage points.

Figure 5. Percentage of Assets in Alternatives, 2001-2015



Source: PPD (2001-2015).

Alternative investments had robust returns between 2000 and 2007, and they lost substantially less than traditional equities during the financial crisis. However, previous research in this series estimated that – from 2010 to 2015 – a 10-percentage-point increase in the allocation to alternatives was related to a 44-basis-point decrease in the annual return.[14] Based on this relationship, a 6-percentage-point difference in the allocation to alternatives would result in roughly a 26-basis-point difference in return. It is clear that further research on the specific investment allocation and performance of state and local plans is needed to fully explain the difference in returns. That said, the advantage in returns – combined with a more aggressive funding schedule – has helped local plans close the funding gap in recent years.

Conclusion

Since 2001, local plans have trailed states in funded level. While local plans receive more of their actuarially required contributions and tend to set more stringent required contributions, poor investment returns have historically limited their ability to close the gap with states. But, in recent years, local plans have experienced stronger returns than state plans, shrinking the funding gap between the two. More research is needed to fully understand this recent reversal.

While the findings of this *brief* highlight the impact of investment performance on funding, the amount of the actuarially required contribution paid – and the way the required contribution is calculated – is also important. If the required contribution is based on less aggressive funding methods, a plan receiving 100 percent of its required amount may not realize meaningful improvement in its funded status in the short term. For this reason, it is important that state and local plans evaluate their funding policies and consider incorporating more aggressive funding methods that pay down unfunded liabilities faster. This shift would expedite funding progress when returns are strong and could serve as a safeguard in the event of poor returns.

Endnotes

1 Munnell et al. (2011).

2 Between 2009 and 2014, 74 percent of state plans and 57 percent of local plans made some degree of changes to benefit provisions (see Aubry and Crawford 2017).

3 For continuity with historical numbers, the trend in funded status is based on the assets and liabilities reported under Standards 25 and 27 of the Governmental Accounting Standards Board (GASB).

4 See U.S. Census Bureau (2016).

5 The intent was to include the largest local plans from each state, but some states have no localities that administer plans. In addition, the Portland Fire and Police Disability Retirement Fund – formerly part of the PPD – and the Atlanta Board of Education Fund – formerly part of the local sample – have been excluded. As a result, the sample used in this analysis consists of 130 local plans from 42 states.

6 This analysis focuses on the funded status as measured under the old GASB standards (GASB 25) for continuity with historical trends and because the new standards under GASB 67 are for reporting purposes only and are not meant to determine funding. As such, funding measures under the GASB 25 and GASB 67 rules are not entirely comparable. See Aubry, Crawford, and Munnell (2017) for a more thorough comparison of the two accounting standards.

7 Generally, actuarially required contributions at the local level are larger as a percentage of payroll than that at the state level because police and fire plans, which provide relatively higher benefits at younger ages, are more expensive than plans for general employees and teachers. For both state and local plans, the actuarially required contributions as a percentage of payroll have increased dramatically since 2001. Between 2001 and 2015, local costs grew from 9.3 percent of payroll to 29.3 percent, while states increased from 6.2 percent to 17.0 percent.

8 As the amortization period shortens, the difference in funding progress between the level-percent-of-pay and level-dollar methods becomes less pronounced.

9 As of 2016, approximately one-third of plans in the PPD used an open amortization period.

10 The Conference of Consulting Actuaries (CCA) categorizes rolling/open amortization periods over longer than 25 years as an "unacceptable practice."

11 Level-dollar amortization payments are based on each plan's reported unfunded liability and remaining amortization period, using the plan's assumed return as the interest rate. Then, to calculate the employer's annual required contribution, the level-dollar amortization payment is added to the employer normal cost for the plan.

12 In addition, on average, local plans use a shorter amortization period than states. In 2015, the amortization period of state and local plans averaged 27 and 21 years, respectively.

13 While the asset allocation for state and local plans differed slightly for most asset classes, the most significant difference between the two groups was in the percentage of assets allocated to alternatives.

14 See Aubry, Chen, and Munnell (2017).

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APPENDIX

Table A1. Local Plans: Funded Status and Percentage of ARC Paid (Reported and CRR-calculated), 2016

State	Plan name	Funded status	Percentage of ARC paid	
			Reported	CRR-calculated
AK	Anchorage Police and Firemen Retirement Plan	86.0%[a]	100.0%	91.7%[b]
AL	Birmingham Retirement & Relief System	75.5	46.3	37.8
AR	Little Rock City Firemen's Relief and Pension Fund	49.0[a]	33.1[b]	32.3[b]
AZ	Phoenix ERS	57.3	100.0	68.9
	Tucson, AZ Supplemental Retirement System	71.1	100.6	83.2
CA	Alameda County Employee's Retirement Association	78.1	100.0[b]	81.7[b]
	Contra Costa County	86.5	100.0[b]	88.7[b]
	Kern County Employees Retirement Association	63.4	100.0	80.3
	LA County ERS	79.4	100.0	85.3
	Los Angeles City Employees' Retirement System	71.4	100.0	73.1
	Los Angeles Fire and Police	93.9	100.0	92.7
	Los Angeles Water and Power	84.2	98.3	98.3
	Marin County Employees' Pension Plan	81.5	100.0	90.1
	Orange County ERS	73.1	108.8	88.4
	Sacramento County ERS	87.3	100.0	87.4
	San Diego City ERS	71.6	100.0	85.9
	San Diego County	76.9	100.0	84.2
	San Francisco City & County	85.0	100.0	83.7
	San Jose, CA Police and Fire Plan	75.7	100.0	86.1
CO	Denver Employees	71.0	112.4[b]	85.4[b]
	Denver Schools	75.9	24.1	18.7
CT	Bridgeport Police Retirement Plan B	69.6	0.0	0.0
	Bridgeport Public Safety Plan A	23.4	100.0	65.5
	Greenwich Town Retirement System	74.6	100.0	89.6
	Hartford Municipal Employee Retirement Fund	74.8	100.0	100.0
	New Haven City Employee Retirement Fund	40.1[a]	100.2	73.8[b]
	New Haven Police and Fireman's Retirement Fund	53.2[a]	100.0	77.4[b]
DC	DC Police & Fire	110.8	100.0	100.0
	DC Teachers	90.9	100.0	87.8
DE	Dover General Employee Pension Plan	62.5	102.1	102.1
	New Castle County Pension Program	75.0	100.0	100.0
	Wilmington Police Pension Fund	53.9[a]	100.3	75.4[b]
FL	City of Miami Firefighters and Police Officers Retirement Trust	69.6	100.0	79.0
	Jacksonville General Employee Pension Plan	64.6	95.3	87.1
	Pensacola General Pension and Retirement Fund	76.7	100.0	100.0
	Tallahassee Retirement System	88.5	100.0	97.0
	Tampa City Firemen and Policemen Pension Fund	95.4	100.0	100.0

State	Plan name	Funded ratio	Percentage of ARC paid	
			Reported	CRR-calculated
GA	Atlanta Fire Fund	71.9	100.0	75.3
	Atlanta General Employees Pension Fund	60.4	100.0	71.2
	Atlanta Police Fund	73.1	100.0	76.3
	Cobb County Government Employees' Pension Plan	53.7	102.2	83.4
IA	Des Moines Water Works Retirement System	87.0	100.0	100.0
ID	Pocatello Police Retirement Pension Plan	92.7	100.0	100.0
IL	Chicago Fireman's Annuity Benefit Fund	21.3	46.1	46.1
	Chicago Laborers Retirement Board Employees Annuity Benefit Fund	50.4	10.8	10.8
	Chicago Municipal Employees	30.5	16.2	16.2
	Chicago Police	23.7	34.9	27.1
	Chicago Teachers	52.4	84.7	62.2
	Cook County Employees	56.7	73.7	67.6
KS	Wichita Employees Retirement System	92.9	100.0	88.6
	Wichita Police and Fire Retirement System	94.0	100.0	91.1
KY	Lexington Police & Firemen Retirement Fund	77.8	100.0[b]	100.0[b]
	Louisville-Jefferson County Firefighters' Pension Fund	48.4[b]	100.0	92.2
	Owensboro City Employees' Pension Funds	139.3[a]	100.0	100.0
	Owensboro Police and Firefighters' Retirement Fund	36.0[a]	100.0	100.0
LA	Baton Rouge City Parish Retirement System	67.9	105.7[b]	85.6[b]
	New Orleans Employee's Retirement System	62.0	102.8	102.8
MA	Boston Retirement Board	57.6[b]	100.0[b]	66.5[b]
MD	Anne Arundel County Employees Retirement Plan	77.1	99.9[b]	84.8[b]
	Baltimore County Employees Retirement System	65.1	95.6	76.4
	Baltimore Fire and Police Employees Retirement System	71.5	100.0	100.0
	Employees Retirement System of Baltimore City	71.2	101.6	101.6
	Montgomery County Employees Retirement System	91.7	100.0	93.1
MI	Detroit Employees General Retirement System	63.3	100.0	100.0
	Detroit Police and Fire Retirement System	73.5	100.0	100.0
	Wayne County Employees' Pension Plan	54.0	143.2	114.7
MN	St. Paul Teachers	63.3	95.3	64.7
MO	Kansas City, MO Employees' Retirement System	83.3	100.1	83.9
	St. Louis Employees Retirement System	81.9	112.6	112.6
	St. Louis Police Retirement System	78.0	100.0	87.5
	St. Louis School Employees	78.5[b]	102.6[b]	102.6[b]
NC	Charlotte Firefighters Retirement System	86.9	85.2	77.0
ND	Bismarck City Employees' Pension Plan	89.9[c]	125.3	222.3[a]
	Fargo Employees Retirement System	73.1[a]	84.1	84.6[b]
	Fargo Police Pension System	68.8[b]	81.1	68.2
NE	Omaha Employees Retirement System	55.7	108.4	57.9
	Omaha Police and Fire Pension Fund	51.8	101.8	70.0
	Omaha School Employee Retirement System	65.3	107.7	80.5

State	Plan name	Funded ratio	Percentage of ARC paid	
			Reported	CRR-calculated
NH	Manchester Employees' Contributory Retirement System	63.7	100.0	29.5
NJ	Jersey City Municipal Employees Pension Fund	49.1[c]	100.0	N/A
NY	New York City Board of Education Retirement System	55.5[a]	100.0[a]	100.0[a]
	New York City ERS	70.4[a]	100.0[a]	100.0[a]
	New York City Fire	55.3[a]	100.0[a]	100.0[a]
	New York City Police	72.3[a]	100.0[a]	100.0[a]
	New York City Teachers	60.5[a]	100.0[a]	100.0[a]
OH	Cincinnati Employees Retirement System	76.9	38.0	38.0
OK	Employees Retirement Fund City of Oklahoma City	104.9[b]	100.0	100.0
	Tulsa City Employees Retirement Fund	70.4	100.0	64.2
PA	Philadelphia Municipal Retirement System	44.8	35.5[a]	35.5[a]
	Pittsburgh Firemen's Relief and Pension Plan	55.5[a]	169.8	148.8[b]
	Pittsburgh Municipal Pension Fund	60.8[a]	169.8	148.8[b]
	Pittsburgh Policemen's Relief and Pension Plan	55.5[a]	169.8	148.8[b]
RI	Providence Employees Retirement System	27.1[b]	100.0	80.3
SC	City of Spartanburg General Employees Retirement Plan	28.6[c]	77.3	62.5[a]
	Greenville City Fire Department's Pension Plan	81.0[c]	114.5	N/A
SD	Sioux Falls Employees Retirement System	87.2	100.0	84.4
TN	Knox County DB Plan	56.6[c]	101.6	95.8[a]
	Knox County Teachers' DB Plan	82.1[c]	100.0	100.0[a]
	Nashville-Davidson Metropolitan Employees Benefit Trust Fund	96.0	142.2	142.2
	Retirement System of The City of Memphis	84.1	70.2	70.2
TX	City of Austin ERS	67.5	98.2[a]	79.0[a]
	City of Austin Fire Fighters' Relief and Retirement Fund	88.3	100.0	80.9
	City of Austin Police Officers' Retirement and Pension Fund	66.2	100.0	67.2
	Dallas Employees Retirement Fund	80.4	66.6	52.4
	Dallas Police and Fire	49.4	108.4[b]	38.0[b]
	El Paso City Employees Pension Fund (CEPF)	79.2	100.0	82.1[b]
	Fort Worth Employees Retirement Fund	58.5	83.6	62.5
	Houston Firefighters	80.6	77.1[a]	66.3[a]
	Houston Municipal Employees Pension System	54.2[b]	98.6	73.9
	Houston Police Officers Pension System	77.5	85.3	70.8
	San Antonio Firemen's and Policemen's Pension Fund	87.9	100.0	90.5
VA	Arlington County Employees Retirement System	99.6	100.0	99.2
	City of Richmond Retirement System	63.5	100.0	86.6
	Fairfax County Employees' Retirement System	70.2	100.0	86.6
	Fairfax County Police Officers Retirement System	85.4	100.0	90.7
	Fairfax County Schools	76.0	100.7	84.4
	Newport News Employees Retirement Fund	67.6	99.6	99.6
	Norfolk Employees Retirement System	83.6	100.0	81.5
VT	Burlington Employees Retirement System	71.4	100.0[b]	81.7[b]

State	Plan name	Funded ratio	Percentage of ARC paid	
			Reported	CRR-calculated
WA	Seattle Employees Retirement System	66.5	100.7[b]	76.6[b]
WI	Milwaukee City ERS	96.1	100.0[b]	95.9[b]
	Milwaukee County Employees Retirement System	77.1	83.7[b]	68.5[b]
WV	Charleston, WV Firemen's Pension and Relief	N/A	51.1	N/A
	Morgantown Employees Retirement and Benefit Fund	78.6[c]	105.3	60.6[a]
	Wheeling City (WV) Employees' Retirement Funds	N/A	100.0[b]	100.0[b]

Note: Funded ratio represents assets and liabilities as measured under traditional GASB 25 standards unless otherwise noted. N/A reflects data not available. Five plans from the local sample – Duluth Teachers, Little Rock City Police Pension and Relief Fund, Marion County Law Enforcement Retirement and Disability Fund, Minneapolis Employees Retirement Fund, and Minneapolis Police Relief Association – are excluded due to either plan closure between 2011 and 2014 or lack of data since 2012 or 2013.
[a] Data are from fiscal year 2014.
[b] Data are from fiscal year 2015.
[c] Reflects assets and liabilities as valued under GASB 67 standards due to missing GASB 25 actuarial data. The plan's blended discount rate is equal to its actuarial assumed rate of return.
Sources: Authors' calculations from various financial and actuarial reports.

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NO WRITTEN REPORT PROVIDED

NO WRITTEN REPORT

NO COMMITTEE MEETING WAS HELD THIS MONTH

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DISTRICT OF COLUMBIA
DCRB
RETIREMENT BOARD

Report on the Actuarial Valuations of the

Teachers' Retirement Plan and Police Officers & Firefighters' Retirement Plan

Prepared as of October 1, 2017 for the District of Columbia Retirement Board

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The experience and dedication you deserve

December 14, 2017

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 valuations to the District of Columbia Retirement Board for the District of Columbia Teachers' Retirement Plan the District of Columbia Police Officers and Firefighters' Retirement Plan, prepared as of October 1, 2017.

The purpose of this report is to provide a summary of the funded status of each Plan as of October 1, 2017, and to recommend rates of contribution to be paid by the District in the 2019 fiscal year. The information needed for this Plan under Governmental Accounting Standards Board (GASB) Statement No. 67 is 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. A five-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.

Since the previous valuation, several changes were made to the actuarial assumptions and methods. The asset smoothing method period was changed from seven years to five years. In addition, many demographic assumptions were changed to better reflect recent experience. The administrative expense rate for the Police Officers and Firefighters' Retirement Plan was increased from 1.20% to 2.10% of payroll.

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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December 14, 2017
The Board of Trustees
Page 2

The funding policy was amended by the Board in 2017 to:

- Amortized the legacy Unfunded Actuarial Accrued Liability (UAAL) as of October 1, 2017 over a closed 15-year period on a level dollar basis.
- The assumption and method changes and experience gains for the October 1, 2017 valuation will be amortized over a closed 20-year period from the valuation date.
- In subsequent valuations, all benefit changes, assumption and method changes and experience gains and/or losses that have occurred since the previous valuation will be amortized over a closed 20-year period from the date it is established.
- Change the asset smoothing period from seven years to five 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.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the System and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

The actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. Use of these computations from purposes other than meeting these requirements may not be appropriate.

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
Consulting Actuary

EJK/JTC:bvb

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SECTION I – SUMMARY OF PRINCIPAL RESULTS

1. For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results for the Teachers' Retirement Plan and Police Officers and Firefighters' Retirement Plan are summarized below in the tables that follow.

SUMMARY OF PRINCIPAL RESULTS FOR TEACHERS' RETIREMENT PLAN
($ IN THOUSANDS)

VALUATION DATE	October 1, 2017	October 1, 2016
Number of Active Members	5,199	5,141
Annual Covered Payroll	$447,762	$438,079
Number of Retired Members and Survivors	3,899	3,882
Annual Retirement Benefits	$71,201	$68,790
Assets:		
Actuarial Value	$1,982,019	$1,845,476
Market Value	$2,051,006	$1,822,113
Liabilities:		
Actuarial Accrued Liability	$2,142,491	$2,029,640
Unfunded Actuarial Accrued Liability (UAAL)	$160,472	$184,164
Funding Ratios:		
Based on Actuarial Value	92.51%	90.93 %
Based on Market Value	95.73%	89.78 %
CONTRIBUTION FOR FISCAL YEAR ENDING	**09/30/2019**	**09/30/2018**
Employer Normal Cost Rate*	7.55%	7.47%
Amortization of UAAL Rate	3.54	4.04
Actuarially Determined Contribution Rate (ADC)	11.09%	11.51%
Estimated Fiscal Year End Covered Payroll	$466,792	$456,697
Fiscal Year District Payment before 1-907.02(c)	$51,767	$52,566
Shortfall/(Overpayment)	1,576	6,480
Fiscal Year District Payment	$53,343	$59,046

*The normal cost rate includes the administrative expense rate of 1.20%.

SUMMARY OF PRINCIPAL RESULTS FOR POLICE OFFICERS' RETIREMENT PLAN ($ IN THOUSANDS)

VALUATION DATE	October 1, 2017	October 1, 2016
Total Number of Active Members	3,583	3,651
Total Annual Covered Payroll	$299,535	$298,442
Number of Retired Members and Survivors	2,419	2,265
Annual Retirement Benefits	$72,463	$63,587
Total Assets:		
Actuarial Value	$3,794,954	$3,528,543
Market Value	$3,949,045	$3,503,500
Liabilities:		
Actuarial Accrued Liability	$3,412,554	$3,108,582
Unfunded Actuarial Accrued Liability (UAAL)	($382,400)	($419,961)
Funding Ratios:		
Based on Actuarial Value	111.21%	113.51 %
Based on Market Value	115.72%	112.70 %
CONTRIBUTION FOR FISCAL YEAR ENDING	**09/30/2019**	**09/30/2018**
Employer Normal Cost Rate*	32.15%	34.22%
Amortization of UAAL Rate	(13.10)	(13.53)
Actuarially Determined Contribution Rate (ADC)	19.05%	20.69%
Estimated Fiscal Year End Covered Payroll	$312,265	$311,126
Fiscal Year District Payment before 1-907.02(c)	$59,486	$64,372
Shortfall/(Overpayment)	(4,964)	(4,420)
Fiscal Year District Payment	$54,522	$59,952

* The normal cost rate includes the administrative expense rate of 2.10% for fiscal year ending 2019, and 1.20% for fiscal year ending 2018.

SUMMARY OF PRINCIPAL RESULTS FOR FIREFIGHTERS' RETIREMENT PLAN
($ IN THOUSANDS)

VALUATION DATE	October 1, 2017	October 1, 2016
Total Number of Active Members	1,729	1,708
Total Annual Covered Payroll	$142,370	$139,672
Number of Retired Members and Survivors	796	738
Annual Retirement Benefits	$25,223	$22,151
Total Assets:		
Actuarial Value	$1,611,413	$1,456,508
Market Value	$1,680,866	$1,450,964
Liabilities:		
Actuarial Accrued Liability	$1,465,707	$1,389,931
Unfunded Actuarial Accrued Liability (UAAL)	($145,706)	($66,577)
Funding Ratios:		
Based on Actuarial Value	109.94%	104.79 %
Based on Market Value	114.68%	104.39 %
CONTRIBUTION FOR FISCAL YEAR ENDING	**09/30/2019**	**09/30/2018**
Employer Normal Cost Rate*	35.46%	38.84%
Amortization of UAAL Rate	(10.07)	(4.58)
Actuarially Determined Contribution Rate (ADC)	25.39%	34.26%
Estimated Fiscal Year End Covered Payroll	$148,421	$145,608
Fiscal Year District Payment before 1-907.02(c)	$37,684	$49,885
Shortfall/(Overpayment)	(922)	(4,241)
Fiscal Year District Payment	$36,762	$45,644

* The normal cost rate includes the administrative expense rate of 2.10% for fiscal year ending 2019, and 1.20% for fiscal year ending 2018.

SUMMARY OF PRINCIPAL RESULTS FOR POLICE OFFICERS & FIREFIGHTERS' RETIREMENT PLAN
($ IN THOUSANDS)

VALUATION DATE	October 1, 2017	October 1, 2016
Number of Active Police Officers	3,583	3,651
Annual Covered Payroll	$299,535	$298,442
Number of Active Firefighters	1,729	1,708
Annual Covered Payroll	$142,370	$139,672
Total Number of Active Members	5,312	5,359
Total Annual Covered Payroll	$441,905	$438,114
Number of Retired Members and Survivors	3,215	3,003
Annual Retirement Benefits	$97,686	$85,738
Assets:		
Actuarial Value	$5,406,366	$4,985,051
Market Value	$5,629,911	$4,954,464
Liabilities:		
Actuarial Accrued Liability	$4,878,260	$4,498,513
Unfunded Actuarial Accrued Liability (UAAL)	($528,106)	($486,538)
Funding Ratios:		
Based on Actuarial Value	110.83%	110.82 %
Based on Market Value	115.41%	110.14 %
CONTRIBUTIONS FOR FISCAL YEAR ENDING	**09/30/2019**	**09/30/2018**
Employer Normal Cost Rate*	33.21%	35.69%
Amortization of UAAL Rate	(12.12)	(10.68)
Actuarially Determined Contribution Rate (ADC)	21.09%	25.01%
Estimated Fiscal Year End Covered Payroll	$460,686	$456,734
Fiscal Year District Payment before 1-907.02(c)	$97,170	$114,257
Shortfall/(Overpayment)	(5,886)	(8,661)
Fiscal Year District Payment	$91,284	$105,596

* The normal cost rate includes the administrative expense rate of 2.10% for fiscal year ending 2019, and 1.20% for fiscal year ending 2018.

2. The valuation balance sheet showing the results is given in Schedule A.

3. Comments on the valuation results as of October 1, 2017 are given in Section IV and further adjustments of the contribution amounts are set out in Section V.

4. Schedule B of this report shows the development of the actuarial value of assets. Schedule D outlines the full set of actuarial assumptions and methods employed. The following changes to assumptions and methods were made since the previous valuation:
   - Demographic assumptions were changed to better reflect recent experience.
   - The administrative expense rate for the Police Officers and Firefighters' Retirement Plan was increased from 1.20% to 2.10% of payroll.
   - Asset smoothing method was changed from a 7-year period to 5-year period.

5. The funding policy adopted by the Board in 2012 was amended in 2017 to:
   - Amortized the legacy Unfunded Actuarial Accrued Liability (UAAL) as of October 1, 2017 over a closed 15-year period on a level dollar basis.
   - The assumption and method changes and experience gains for the October 1, 2017 valuation will be amortized over a closed 20-year period from the valuation date.
   - In subsequent valuations, all benefit changes, assumption and method changes and experience gains and/or losses that have occurred since the previous valuation will be amortized over a closed 20-year period from the date it is established.
   - Change the asset smoothing period from seven years to five years.

6. The valuation takes into account the effect of any amendments to the Plan through the valuation date. The Main Provisions of the Plans, as summarized in Schedule E, were taken into account in the current valuation. No changes were made to the main provisions since the previous valuation.

7. Membership and asset data was provided by the Plan's staff and was reviewed for reasonableness and consistency with data from prior valuations. Where data was incomplete but thought to be credible, assumptions were made for missing items. The valuation results depend on the integrity of the data. If any of this information is inaccurate, our results may differ and our calculations may need to be revised. All membership data was collected as of July 1, 2017, but for valuation purposes, (e.g., age, service) all members were treated as if remaining in the System as of October 1, 2017.

SECTION II – MEMBERSHIP DATA

1. Data regarding the membership of the Plans for use as a basis of the valuation were furnished by DCRB, the District Government and the U.S. Department of the Treasury. The following table shows the number of active members and their annual compensation as of October 1, 2017, on the basis of which the valuation was prepared.

TABLE 1

THE NUMBER AND ANNUAL COMPENSATION OF ACTIVE MEMBERS AS OF OCTOBER 1, 2017 ($ IN THOUSANDS)

GROUP	NUMBER	COMPENSATION
Teachers	5,199	$447,762
Police Officers	3,583	299,535
Firefighters	1,729	142,370
Total	10,511	$889,667

2. The following table shows a five-year history of active member valuation data.

TABLE 2

SCHEDULE OF TOTAL ACTIVE MEMBER VALUATION DATA

VALUATION DATE	NUMBER	ANNUAL PAYROLL ($ IN THOUSANDS)	ANNUAL AVERAGE PAY	% CHANGE IN AVERAGE PAY
10/01/2017	10,511	$ 889,667	$ 84,642	1.43 %
10/01/2016	10,500	876,193	83,447	0.56
10/01/2015	10,403	863,291	82,985	2.04
10/01/2014	10,050	817,341	81,327	2.79
10/01/2013	9,889	782,451	79,123	(0.56)

3. The following table shows the number and annual retirement benefits payable to retired members and survivors on the roll of DCRB as of the valuation date.

TABLE 3

THE NUMBER AND ANNUAL RETIREMENT BENEFITS OF RETIRED MEMBERS AND SURVIVORS OF DECEASED MEMBERS* ON THE ROLL AS OF OCTOBER 1, 2017 ($ IN THOUSANDS)

DISTRICT ONLY

TYPE OF RETIREMENT	GROUP			
	TEACHERS	POLICE OFFICERS	FIREFIGHTERS	TOTAL
Service:				
Number	3,636	1,736	575	5,947
Annual Benefits	$67,498	$57,539	$20,268	$145,305
Disability:				
Number	110	310	87	507
Annual Benefits	$2,599	$9,117	$2,323	$14,039
Survivors:				
Number	153	373	134	660
Annual Benefits	$1,104	$5,807	$2,632	$9,543
Total:				
Number	3,899	2,419	796	7,114
Annual Benefits	$71,201	$72,463	$25,223	$168,887

*In addition, there are 1,670 deferred vested participants with annual deferred benefits of $26,140,894.

TABLE 4

**THE NUMBER AND ANNUAL RETIREMENT BENEFITS
OF RETIRED MEMBERS AND SURVIVORS OF DECEASED MEMBERS
ON THE ROLL AS OF OCTOBER 1, 2017
($ IN THOUSANDS)**

FEDERAL PLUS DISTRICT

TYPE OF RETIREMENT	GROUP			
	TEACHERS	POLICE OFFICERS	FIREFIGHTERS	TOTAL
Service:				
Number	5,342	3,752	1,146	10,240
Annual Benefits	$252,514	$230,868	$82,148	$565,530
Disability:				
Number	291	958	355	1,604
Annual Benefits	$9,370	$42,495	$17,978	$69,843
Survivors:				
Number	428	1,447	533	2,408
Annual Benefits	$8,923	$43,055	$16,534	$68,512
Total:				
Number	6,061	6,157	2,034	14,252
Annual Benefits	$270,807	$316,418	$116,660	$703,885

4. Tables 4 through 6 of Schedule F show the distribution by age and service of the number and annual compensation of active members for each plan included in the valuation. Tables 7 through 12 of Schedule F show the distribution by age of the number and annual benefits of retired members for each plan included in the valuation.

SECTION III - ASSETS

1. Schedule C shows the additions and deductions of DCRB for the year preceding the valuation date and a reconciliation of the fund balances at market value. As of October 1, 2017, the market value of assets used to determine the actuarial value of assets for each plan is shown below:

TABLE 5

COMPARISON OF MARKET VALUE OF ASSETS AT OCTOBER 1, 2017 AND OCTOBER 1, 2016 ($ IN THOUSANDS)

FUND	OCTOBER 1, 2017 MARKET VALUE	OCTOBER 1, 2016 MARKET VALUE
Teachers	$2,051,006	$1,822,113
Police Officers and Firefighters	5,629,911	4,954,464
Total Market Value of Assets	$7,680,917	$6,776,577

2. The five-year market related actuarial value of assets used for the current valuation was $7,388,385,220. Schedule B shows the development of the actuarial value of assets as of October 1, 2017. The following table shows the actuarial value of assets allocated between each plan.

TABLE 6

COMPARISON OF ACTUARIAL VALUE OF ASSETS AT OCTOBER 1, 2017 AND OCTOBER 1, 2016 ($ IN THOUSANDS)

FUND	OCTOBER 1, 2017 ACTUARIAL VALUE	OCTOBER 1, 2016 ACTUARIAL VALUE
Teachers	$1,982,019	$1,845,476
Police Officers and Firefighters	5,406,366	4,985,051
Total Actuarial Value of Assets	$7,388,385	$6,830,527

SECTION IV - COMMENTS ON VALUATION

Teachers' Retirement Plan

1. The total valuation balance sheet on account of benefits shows that the Teachers' Retirement Plan has total prospective benefit liabilities of $2,676,644,689, of which $988,609,725 is for the prospective benefits payable on account of present retired members and survivors of deceased members, $166,086,480 is for the prospective benefits payable on account of present inactive members, and $1,521,948,484 is for the prospective benefits payable on account of present active members. Against these benefit liabilities the Teachers' Retirement Plan has a total present actuarial value of assets of $1,982,018,820 as of October 1, 2017. The difference of $694,625,869 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future on account of benefits.

2. The contributions to the Plan consist of normal cost contributions and actuarial accrued liability contributions. The valuation indicates the normal contributions at a rate of 14.23% of payroll are required under the entry age method. Of this amount 7.88% will be paid by the members (at the rate of 7.0% of salary for members hired before November 1, 1996 and 8.0% of salary for members hired on or after November 1, 1996), in 2019 and the remaining 6.35% is payable by the District.

3. Estimated budgeted administrative expenses are included in the normal rates. The expenses for the fiscal year ending September 30, 2019 are estimated to be 1.20% of payroll.

4. Prospective normal cost contributions (excluding administrative expenses) at the rate of 14.23% have a present value of $534,153,549. When this amount is subtracted from $694,625,869, which is the present value of total future contributions to be made, there remains $160,472,320 as the amount of unfunded actuarial accrued liability contributions. The development of the unfunded actuarial accrued liability is shown in Schedule A.

5. The unfunded actuarial accrued liability (UAAL) decreased approximately $23.7 million for the plan year ending September 30, 2017 and the funding ratio increased from 90.93% to 92.51%. The decrease in the UAAL was primarily due to lower salary increases for active members than was expected, and lower actual Cost-of-Living Adjustment (COLA) for retired members than expected and investment earnings on an actuarial value basis that was higher than the expected rate of 6.50%. These gains were partially offset by the changes to the assumptions and methods from the most recent Experience Study Report. See Schedule H for a complete breakdown of the experience of the Plan.

Police Officers and Firefighters' Retirement Plan

1. The total valuation balance sheet on account of benefits shows that the combined Police Officers and Firefighters' Retirement Plan has total prospective benefit liabilities of $6,819,279,379, of which $1,884,687,678 is for the prospective benefits payable on account of present retired members and survivors of deceased members, $106,011,181 is for the prospective benefits payable on account of present inactive members, and $4,828,580,520 is for the prospective benefits payable on account of present active members. Against these benefit liabilities the Police Officers and Firefighters' Retirement Plan has a total present actuarial value of assets of $5,406,366,400 as of October 1, 2017. The difference of $1,412,912,979 between the total liabilities and the total present actuarial value of assets represents the present value of contributions to be made in the future on account of benefits.

2. The contributions to the Plan consist of normal cost contributions and actuarial accrued liability contributions. The valuation indicates the normal contributions at a rate of 38.81% of payroll are required under the entry age method. Of this amount 7.70% will be paid by the members (at the rate of 7.0% of salary for members hired before November 10, 1996 and 8.0% of salary for members hired on or after November 10, 1996), in 2019 and the remaining 31.11% is payable by the District.

3. Estimated budgeted administrative expenses are included in the normal rates. The expenses for the fiscal year ending September 30, 2019 are estimated to be 2.10% of payroll.

4. Prospective normal cost contributions (excluding administrative expenses) at the rate of 38.81% have a present value of $1,941,019,238. When this amount is subtracted from $1,412,912,979, which is the present value of total future contributions to be made, there remains a surplus of ($528,106,259) as the amount of unfunded actuarial accrued liability contributions. The development of the unfunded actuarial accrued liability is shown in Schedule A.

5. The unfunded actuarial accrued liability (UAAL) decreased approximately $41.6 million for the plan year ending September 30, 2017 and the funding ratio increased slightly from 110.82% to 110.83%. The decrease in the UAAL was primarily due to lower salary increases for active members than was expected, and lower actual Cost-of-Living Adjustment (COLA) for retired members than expected and investment earnings on an actuarial value basis that was higher than the expected rate of 6.50%. These gains were partially offset by the changes in the assumptions and methods from the most recent Experience Study. See Schedule H for a complete breakdown of the experience of the Plan.

SECTION V - §1-907.02(c) ADJUSTMENT TO FISCAL YEAR 2019 DISTRICT PAYMENT

1. Beginning in fiscal year 2001, the District payment was adjusted pursuant to D.C. Code §1-907.02(c). This section stipulates that "…the enrolled actuary shall determine whether the amount appropriated for the applicable fiscal year resulted in an overpayment or a shortfall based upon the actual covered payroll."

2. The D.C. Code §1-907.02(c) adjustment to the fiscal year 2019 District payment is calculated by taking the actual fiscal year 2017 covered payroll for each employee class (which is provided by the District) and multiplying by the corresponding fiscal year 2017 contribution rates, which were determined as of October 1, 2015. This result is the fiscal year 2017 contribution that was required to be made by the District, based on actual payroll. The required contribution is then compared to the actual contribution that was paid by the District based on projected payroll. The difference between the required and actual contributions is the D.C. Code §1-907.02(c) adjustment. Any adjustment amount that cannot be used in a given year is carried forward to the next fiscal year.

ADJUSTMENT TO DISTRICT PAYMENT
AS OF OCTOBER 1, 2017
($ IN THOUSANDS)

	Teachers	Police	Fire
(1) Actual FY 2017 Covered Payroll	$447,762	$299,535	$142,370
(2) FY 2017 Contribution Rate	12.17%	23.75%	39.11%
(3) Actual FY 2017 Contribution Required	$54,493	$71,140	$55,681
(4) Actual FY 2017 Contribution Paid without Adjustment	$52,917	$76,104	$56,603
(5) Preliminary D.C. Code §1-907.02(c) Adjustment to FY 2018 Payment [(3) - (4)]	$1,576	($4,964)	($922)
(6) FY 2017 Unrecognized Amount	$0	$0	$0
(7) Final D.C. Code §1-907.02(c) Adjustment to FY 2018 Payment [(5) + (6) if applicable]	$1,576	($4,964)	($922)
(8) Applicable Adjustment	$1,576	($4,964)	($922)
(9) Carryover Adjustment [(7) - (8)]	$0	$0	$0

SECTION VI – CONTRIBUTIONS PAYABLE

1. The following tables summarize the employer contribution rates, which were determined by the October 1, 2017 valuation and recommended for use for the fiscal year ending September 30, 2019.

TEACHERS' RETIREMENT PLAN
ACTUARIAL DETERMINED CONTRIBUTIONS (ADC)
FOR FISCAL YEAR ENDING SEPTEMBER 30, 2019

	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION	EMPLOYER ACTUARIAL DETERMINED CONTRIBUTION (ADC)
Normal Cost	6.35%	$29,641,000
Expense Load	1.20	5,602,000
Accrued Liability	3.54	16,524,000
Sub-Total	11.09%	$51,767,000
DC Code Adjustment		1,576,000
Total		$53,343,000

POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT PLAN
ACTUARIAL DETERMINED CONTRIBUTIONS (ADC)
FOR FISCAL YEAR ENDING SEPTEMBER 30, 2019

	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION	EMPLOYER ACTUARIAL DETERMINED CONTRIBUTION (ADC)
Normal Cost	31.11%	$143,349,000
Expense Load	2.10	9,674,000
Accrued Liability	(12.12)	(55,823,000)
Sub-Total	21.09%	$97,170,000
DC Code Adjustment		(5,886,000)
Total		$91,284,000

SECTION VII - ACCOUNTING INFORMATION

1. Governmental Accounting Standards Board (GASB) Statements 67 and 68 are now used to determine the accounting results for the plans and are provided in a separate report. GASB 25 and 27 results are provided for informational purposes only. One such item is a distribution of the number of employees by type of membership, as follows:

NUMBER OF ALL MEMBERS
AS OF OCTOBER 1, 2017

GROUP	RETIREMENT PLAN			
	Teachers	Police Officers	Firefighters	Total
Retirees and survivors currently receiving benefits	3,899	2,419	796	7,114
Terminated employees entitled to benefits but not yet receiving benefits	1,330	246	94	1,670
Inactive Members	412	52	20	484
Active Members				
Vested	2,462	2,687	1,473	6,622
Non-vested	2,737	896	256	3,889
Total Active Members	5,199	3,583	1,729	10,511
Totals	10,840	6,300	2,639	19,779

2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS
($ IN THOUSANDS)

Actuarial Valuation Date	Actuarial Value of Plan Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b – a) / c)
			TEACHERS' RETIREMENT PLAN			
10/1/2013	$1,585,775	$1,759,043	$173,268	90.1 %	$369,071	46.9 %
10/1/2014	1,638,583	1,849,230	210,647	88.6 %	378,926	55.6 %
10/1/2015	1,732,017	1,953,305	221,288	88.7 %	417,090	53.1 %
10/1/2016	1,845,476	2,029,640	184,164	90.9 %	438,079	42.0 %
10/1/2017	1,982,019	2,142,491	160,472	92.5 %	447,762	35.8 %
			POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT PLAN			
10/1/2013	$4,013,534	$3,644,085	($369,449)	110.1 %	$413,380	(89.4)%
10/1/2014	4,288,727	3,998,537	(290,190)	107.3 %	438,415	(66.2)%
10/1/2015	4,607,300	4,283,093	(324,206)	107.6 %	446,201	(72.7)%
10/1/2016	4,985,051	4,498,513	(486,538)	110.8 %	438,114	(111.1)%
10/1/2017	5,406,366	4,878,260	(528,106)	110.8 %	441,905	(119.5)%
			TOTAL			
10/1/2013	$5,599,309	$5,403,128	($196,181)	103.6 %	$782,451	(25.1)%
10/1/2014	5,927,310	5,847,767	(79,543)	101.4 %	817,341	(9.7)%
10/1/2015	6,339,317	6,236,398	(102,918)	101.7 %	863,291	(11.9)%
10/1/2016	6,830,527	6,528,153	(302,374)	104.6 %	876,193	(34.5)%
10/1/2017	7,388,385	7,020,751	(367,634)	105.2 %	889,667	(41.3)%

3. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at October 1, 2017.

	Teachers	Police Officers & Firefighters
Valuation Date	10/1/2017	10/1/2017
Actuarial cost method	Entry Age Normal	Entry Age Normal
Amortization method	Level Dollar Closed	Level Dollar Closed
Remaining amortization period	15 years	15 years
Asset valuation method	5 year smoothed Market	5 year smoothed Market
Actuarial assumptions:		
Investment rate of return*	6.50%	6.50%
Projected salary increases**	5.50 – 8.63%	4.25 – 9.98%
Cost of living adjustments:	3.50% (COLA limited to 3.00% for those hired after 11/1/1996)	3.50% (COLA limited to 3.00% for those hired after 11/10/1996)

* Includes inflation of 3.50%.
** Includes wage inflation of 4.25%.

SECTION VIII – EXPERIENCE

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Detail on the derivation of the experience gain/(loss) for the year ended September 30, 2017 is shown below.

Teachers' Retirement Plan

			$ Thousands
(1)	UAAL* as of October 1, 2016	$	184,164
(2)	Total normal cost from last valuation		67,146
(3)	Total actual contributions		91,140
(4)	Interest accrual: [[(1) + (2)] x .065] – [(3) x .0325]		13,373
(5)	Expected UAAL before changes: (1) + (2) – (3) + (4)	$	173,543
(6)	Change due to plan amendments		0
(7)	Change due to actuarial assumptions or methods		49,986
(8)	Expected UAAL after changes: (5) + (6) + (7)	$	223,529
(9)	Actual UAAL as of October 1, 2017	$	160,472
(10)	Gain/(loss): (8) – (9)	$	63,057
(11)	Gain/(loss) as percent of actuarial accrued liabilities at start of year ($2,029,640)		3.1%

*Unfunded actuarial accrued liability.

Valuation Date September 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2014	(2.3)%
2015	(0.5)
2016	1.9
2017	3.1

Police Officers and Firefighters' Retirement Plan

			$ Thousands
(1)	UAAL* as of October 1, 2016	$	(486,538)
(2)	Total normal cost from last valuation		189,886
(3)	Total actual contributions		179,055
(4)	Interest accrual: [[(1) + (2)] x .065] – [(3) x .0325]		(25,102)
(5)	Expected UAAL before changes: (1) + (2) – (3) + (4)	$	(500,809)
(6)	Change due to plan amendments		0
(7)	Change due to actuarial assumptions or methods		117,975
(8)	Expected UAAL after changes: (5) + (6) + (7)	$	(382,834)
(9)	Actual UAAL as of October 1, 2017	$	(528,106)
(10)	Gain/(loss): (8) – (9)	$	145,272
(11)	Gain/(loss) as percent of actuarial accrued liabilities at start of year ($4,498,514)		3.2%

*Unfunded actuarial accrued liability.

Valuation Date September 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2014	(2.2)%
2015	1.9
2016	4.0
2017	3.2

SCHEDULE A

VALUATION BALANCE SHEET
SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF THE DISTRICT OF COLUMBIA RETIREMENT BOARD AS OF OCTOBER 1, 2017

TEACHERS' RETIREMENT PLAN

PRESENT AND PROSPECTIVE ASSETS		
Actuarial Value of Present Assets		1,982,018,820
Present value of future members' contributions		259,876,042
Present value of future employer contributions		
Normal contributions	$274,277,507	
Unfunded accrued liability contributions	160,472,320	
Total prospective employer contributions		434,749,827
Total Present and Prospective Assets		$2,676,644,689
ACTUARIAL LIABILITIES		
Present value of benefits payable on account of retired members and survivors of deceased members now drawing retirement benefits		$988,609,725
Present value of prospective benefits payable on account of inactive members		166,086,480
Present value of prospective benefits payable on account of present active members:		
Service retirement benefits	$1,232,085,307	
Disability retirement benefits	29,592,022	
Survivor benefits	18,191,931	
Separation benefits	242,079,224	
Total		1,521,948,484
Total Actuarial Liabilities		$2,676,644,689

SCHEDULE A
(Continued)

VALUATION BALANCE SHEET
SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF
THE DISTRICT OF COLUMBIA RETIREMENT BOARD
AS OF OCTOBER 1, 2017

POLICE OFFICERS & FIREFIGHTERS' RETIREMENT PLAN

PRESENT AND PROSPECTIVE ASSETS		
Actuarial Value of Present Assets		5,406,366,400
Present value of future members' contributions		346,885,354
Present value of future employer contributions		
Normal contributions	$1,594,133,884	
Unfunded accrued liability contributions	(528,106,259)	
Total prospective employer contributions		1,066,027,625
Total Present and Prospective Assets		$6,819,279,379
ACTUARIAL LIABILITIES		
Present value of benefits payable on account of retired members and survivors of deceased members now drawing retirement benefits		$1,884,687,678
Present value of prospective benefits payable on account of inactive members		106,011,181
Present value of prospective benefits payable on account of present active members:		
Service retirement benefits	$4,319,650,776	
Disability retirement benefits	223,525,756	
Survivor benefits	88,831,015	
Separation benefits	196,572,973	
Total		4,828,580,520
Total Actuarial Liabilities		$6,819,279,379

SCHEDULE A
(continued)

SOLVENCY TEST
($ IN THOUSANDS)

Valuation Date	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Reported Assets	(1)	(2)	(3)
	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Reported Asset		
TEACHERS' RETIREMENT PLAN							
10/1/2013	$141,792	$883,495	$733,756	$1,622,376	100%	100.0%	81.4%
10/1/2014	141,943	968,446	738,841	1,746,030	100%	100.0%	86.0%
10/1/2015	144,927	1,053,078	755,300	1,670,976	100%	100.0%	62.6%
10/1/2016	152,459	1,108,032	769,149	1,822,113	100%	100.0%	73.0%
10/1/2017	156,263	1,154,696	831,532	2,051,006	100%	100.0%	89.0%
POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT PLAN							
10/1/2013	$247,202	$966,862	$2,430,021	$4,168,457	100%	100.0%	100.0%
10/1/2014	255,735	1,149,515	2,593,287	4,588,319	100%	100.0%	100.0%
10/1/2015	262,674	1,388,908	2,631,511	4,462,228	100%	100.0%	100.0%
10/1/2016	260,786	1,650,195	2,587,532	4,954,464	100%	100.0%	100.0%
10/1/2017	261,428	1,990,699	2,626,132	5,629,911	100%	100.0%	100.0%

SCHEDULE B

DEVELOPMENT OF THE OCTOBER 1, 2017
ACTUARIAL VALUE OF ASSETS

TEACHERS' RETIREMENT PLAN

(1)	Actuarial Value Beginning of Year*		$	1,845,475,738
(2)	Market Value End of Year		$	2,051,006,000
(3)	Market Value Beginning of Year		$	1,822,113,000
(4)	Cash Flow			
	a.	Contributions	$	91,140,000
	b.	Benefit Payments, Refunds, and Transfers		(78,235,000)
	c.	Administrative Expenses		(4,694,000)
	d.	Net Cash Flow: [(4)a + (4)b + (4)c]	$	8,211,000
(5)	Investment Income			
	a.	Market total: (2) – (3) – (4)d	$	220,682,000
	b.	Assumed Rate		6.50%
	c.	Amount of Immediate Recognition	$	118,704,203
	d.	Amount for Phased-in Recognition: (5)a – (5)c	$	101,977,797
(6)	Phased-In Recognition of Investment Income			
	a.	Current Year: (1/5) x (5)d	$	20,395,559
	b.	First Prior Year		(2,691,920)
	c.	Second Prior Year		(2,691,920)
	d.	Third Prior Year		(2,691,920)
	e.	Fourth Prior Year		(2,691,920)
	f.	Total Recognized Investment Gain	$	9,627,879
(7)	Preliminary Actuarial Value End of Year: (1) + (4)d + (5)c + (6)f		$	1,982,018,820
(8)	Actuarial Value End of Year with 20% Corridor Applied:		$	1,982,018,820
(9)	Rate of Return on Actuarial Value of Assets			6.94%

*Prior to any corridor restraints.

SCHEDULE B
(Continued)

DEVELOPMENT OF THE OCTOBER 1, 2017
ACTUARIAL VALUE OF ASSETS

POLICE OFFICERS & FIREFIGHTERS' RETIREMENT PLAN

(1)	Actuarial Value Beginning of Year*		$	4,985,051,594
(2)	Market Value End of Year		$	5,629,911,000
(3)	Market Value Beginning of Year		$	4,954,464,000
(4)	Cash Flow			
	a.	Contributions	$	179,055,000
	b.	Benefit Payments, Refunds, and Transfers		(94,184,000)
	c.	Administrative Expenses		(12,766,000)
	d.	Net Cash Flow: [(4)a + (4)b + (4)c]	$	72,105,000
(5)	Investment Income			
	a.	Market total: (2) – (3) – (4)d	$	603,342,000
	b.	Assumed Rate		6.50%
	c.	Amount of Immediate Recognition	$	324,383,573
	d.	Amount for Phased-in Recognition: (5)a – (5)c	$	278,958,427
(6)	Phased-In Recognition of Investment Income			
	a.	Current Year: (1/5) x (5)d	$	55,791,685
	b.	First Prior Year		(7,741,363)
	c.	Second Prior Year		(7,741,363)
	d.	Third Prior Year		(7,741,363)
	e.	Fourth Prior Year		(7,741,363)
	f.	Total Recognized Investment Gain	$	24,826,233
(7)	Preliminary Actuarial Value End of Year: (1) + (4)d + (5)c + (6)f		$	5,406,366,400
(8)	Actuarial Value End of Year with 20% Corridor Applied:		$	5,406,366,400
(9)	Rate of Return on Actuarial Value of Assets			6.95%

*Prior to any corridor restraints.

SCHEDULE C

SUMMARY OF CHANGES IN NET ASSETS
FOR THE YEAR ENDING OCTOBER 1, 2017

TEACHERS' RETIREMENT PLAN

Additions for the Year		
Contributions:		
Members (including purchased service)	$ 34,359,000	
Employers	56,781,000	
Total		$ 91,140,000
Net Investment Income		220,682,000
TOTAL		$ 311,822,000
Deductions for the Year		
Benefit Payments (including refunds and transfers)	$ (78,235,000)	
Administrative Expenses	(4,694,000)	
TOTAL		$ (82,929,000)
Excess of Additions Over Deductions		$ 228,893,000
Reconciliation of Asset Balances		
Market Value of Assets as of 9/30/2016		$ 1,822,113,000
Excess of Additions over Deductions		228,893,000
Market Value of Assets as of 9/30/2017*		$ 2,051,006,000
Rate of Return on Market Value of Assets		12.08%

* The Market Value of Assets shown above is used in the determination of the Actuarial Value of Assets (Schedule B).

SCHEDULE C
(Continued)

SUMMARY OF CHANGES IN NET ASSETS
FOR THE YEAR ENDING OCTOBER 1, 2017

POLICE OFFICERS & FIREFIGHTERS' RETIREMENT PLAN

Additions for the Year		
Contributions:		
Members (including purchased service)	$ 33,424,000	
Employers	145,631,000	
Total		$ 179,055,000
Net Investment Income		603,342,000
TOTAL		$ 782,397,000
Deductions for the Year		
Benefit Payments (including refunds and transfers)	$ (94,184,000)	
Administrative Expenses	(12,766,000)	
TOTAL		$ (106,950,000)
Excess of Additions Over Deductions		$ 675,447,000
Reconciliation of Asset Balances		
Market Value of Assets as of 9/30/2016		$ 4,954,464,000
Excess of Additions over Deductions		675,447,000
Market Value of Assets as of 9/30/2017*		$ 5,629,911,000
Rate of Return on Market Value of Assets		12.09%

* The Market Value of Assets shown above is used in the determination of the Actuarial Value of Assets (Schedule B).

SCHEDULE D

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS
(DEMOGRAPHIC ASSUMPTIONS ADOPTED ON JUNE 22, 2017)
(ECONOMIC ASSUMPTIONS ADOPTED ON JUNE 22, 2017)

VALUATION DATE: All assets and liabilities are computed as of October 1, 2017. Demographic information was collected as of June 30, 2017.

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 the wife 3 years younger than the husband. 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 five-year period. The actuarial value of assets is constrained to an 80% to 120% corridor around market value of assets.

WITHDRAWAL ASSUMPTION: For Teachers and Firefighters, it was assumed that 15% of the vested members who terminate elect to withdraw their contributions while the remaining 85% elect to leave their contributions in the plan in order to be eligible for a benefit at their retirement date. For Police Officers, it was assumed that 25% of the vested members who terminate elect to withdraw their contributions while the remaining 75% 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 Officers and Firefighter active deaths are assumed to occur in the line of duty.

COST OF LIVING ADJUSTMENT: 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: For Teachers, budgeted administrative expenses of 1.20% of payroll are added to the normal cost rate. For Police Officers and Firefighters, budgeted administrative expenses of 2.10% of payroll are added to the normal cost rate.

SCHEDULE D
(Continued)

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:

Years of Service	Pay Increase Assumptions for an Individual Member: Merit & Seniority	Inflation & Productivity (Economy)	Total Increase (Next Year)
5	4.20%	4.25%	8.63%
10	3.20	4.25	7.59
15	1.20	4.25	5.50
20	1.20	4.25	5.50
25	1.20	4.25	5.50
30	1.20	4.25	5.50
35	1.20	4.25	5.50

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				
	Withdrawal		Service Retirement		
Sample Ages	5 years of service and up [1]		Under 30 yrs service	30 & up yrs service	Disability Retirement
	Male	Female			
25	18.00%	18.00%			0.01%
30	16.00	16.00			0.02
35	12.00	10.00			0.03
40	12.00	8.00			0.07
45	8.00	6.50			0.12
50	8.00	6.50	5.00%	5.00%	0.20
55	8.00	6.50	9.00	22.00	0.25
60			27.00	28.00	0.30
62			22.00	25.00	
65			25.00	35.00	
70			30.00	30.00	
71			25.00	30.00	
75			100.00	100.00	

[1] Members of any age with less than 5 years of service have withdrawal rates of 18% to 26% for males, and 16% to 23% for females

MORTALITY: The RPH-2014 Blue Collar Mortality Table projected generationally with Scale BB, set back 1 year for males is used for healthy active members, retirees, and beneficiaries. The RPH-2014 Disabled Mortality Table set back 6 years for males and set forward 1 year for females is used for disabled retirees. Mortality improvement is anticipated under these assumptions.

SCHEDULE D
(Continued)

POLICE OFFICERS

SALARY INCREASES: Police Officers are assumed to receive longevity increases applied to individual base pay after 15, 20, 25, and 30 years of service. 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	2.00%	4.25%	6.34%
10	2.00	4.25	6.34
15	2.00	4.25	6.34
20	1.75	4.25	6.07
25	0.75	4.25	5.03
30	0.00	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 (5 years of service & up)[1]		Disability Retirement[2]		Years of Service	Service Retirement[3]
	Males	Females	Males	Females		
20	5.00%	5.00%	0.03%	0.02%	20	15.0%
25	5.00	5.00	0.06	0.05	25	22.0
30	4.25	4.50	0.11	0.10	30	38.0
35	2.75	3.50	0.16	0.15	35	18.0
40	1.50	1.50	0.23	0.30	40	16.0
45	1.50	1.50	0.32	0.40		
50	1.50	1.50	0.42	0.60		
55	1.50	1.50	0.44	0.70		
60	1.50	1.50	0.51	1.00		

[1] Members of any age with less than 5 years of service have a withdrawal rates of 6% to 13% for males, and 5% to 11% for females
[2] 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%.
[3] 100% of active members are assumed to retire at age 65, regardless of service.

MORTALITY: The RPH-2014 Blue Collar Mortality Table projected generationally with Scale BB, set back 1 year for males is used for healthy active members, retirees, and beneficiaries. The RPH-2014 Disabled Mortality Table set back 6 years for males and set forward 1 year for females is used for disabled retirees. Mortality improvement is anticipated under these.

SCHEDULE D
(Continued)

FIREFIGHTERS

SALARY INCREASES: Firefighters are assumed to receive a longevity increases applied to individual base pay after 15, 20, 25, and 30 years of service. 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	3.00%	4.25%	7.38%
10	3.00	4.25	7.38
15	3.00	4.25	7.38
20	1.25	4.25	5.55
25	1.25	4.25	5.55
30	1.25	4.25	5.55
35	1.25	4.25	5.55

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 (5 years of service & up)[1]	Disability Retirement[2]	Years of Service	Service Retirement[3]
20	3.00%	0.01%	20	12.5%
25	3.00	0.05	25	12.5
30	2.60	0.18	30	22.0
35	1.80	0.25	35	40.0
40	1.40	0.30	40	40.0
45	1.20	0.35		
50	1.20	0.40		
55	0.80	0.45		
60	0.60	0.50		

[1] Members of any age with less than 5 years of service have a withdrawal rates of 4.0% to 7.5%.

[2]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%.

[3]100% of active members are assumed to retire at age 60, regardless of service.

MORTALITY: The RPH-2014 Blue Collar Mortality Table projected generationally with Scale BB, set back 1 year for males is used for healthy active members, retirees, and beneficiaries. The RPH-2014 Disabled Mortality Table set back 6 years for males and set forward 1 year for females is used for disabled retirees. Mortality improvement is anticipated under these.

SCHEDULE E

SUMMARY OF DISTRICT OF COLUMBIA TEACHERS' RETIREMENT PLAN PROVISIONS AS INTERPRETED FOR VALUATION PURPOSES

Effective Date — Established on July 1, 1997. The U.S. Department of the Treasury is responsible for paying all benefits accrued before this date.

DEFINITIONS

Affiliated Employers — District of Columbia Public 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.

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, including 5 years school service
60	20, including 5 years school service
62	5 years school service

- **Members hired on and after November 1, 1996**

Age	Service Credit
Any Age	30, including 5 years school service
60	20, 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.

All members receive a minimum benefit of 1.0% of Average Salary plus $25 for each year of service.

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, including 5 years school service
50	20, including 5 years school service

Benefit

Service Retirement Benefit 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, child or parent.

Benefit Refund of member contributions.

SPOUSE/DOMESTIC PARTNER ONLY

Eligibility Death before retirement and married/registered domestic partnership 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/DOMESTIC PARTNER & DEPENDENT CHILDREN

Eligibility Death before retirement and married/registered domestic partnership for at least two years, 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/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) $6,931* (if hired before 1/1/1980), $6,693* (if hired between 1/1/1980 and 10/31/1996), or $6,518* (if hired on or after 11/1/1996) per child
c) $20,958* (if hired before 1/1/1980), $20,240* (if hired between 1/1/1980 and 10/31/1996), or $19,710* (if hired on or after 11/1/1996) divided by the number of children.

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):

d) 75% of Average Salary divided by the number of eligible children
e) $8,470* (if hired before 1/1/1980), $8,157* (if hired between 1/1/1980 and 10/31/1996), or $7,097* (if hired on or after 11/1/1996) per child
f) $25,612* (if hired before 1/1/1980), $24,667* (if hired between 1/1/1980 and 10/31/1996), or $23,910* (if hired on or after 11/1/1996) divided by the number of children.

PARENTS ONLY

Eligibility Death before retirement and no eligible spouse/domestic partner 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 March, 2017, 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.

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/domestic partner 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/domestic partner will receive a partial annuity that can range from \$1 up to any amount less than 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 reduce 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 may be increased. The increase is equal to the annual CPI. COLA's are included in benefit payments on and after April 1st. If member's retirement is effective after March 1 of the preceding year, the COLA amount will be prorated.

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

SCHEDULE E
(Continued)

SUMMARY OF DISTRICT OF COLUMBIA POLICE OFFICERS & FIREFIGHTERS' RETIREMENT PLAN PROVISIONS AS INTERPRETED FOR VALUATION PURPOSES

Effective Date — Established on July 1, 1997. The U.S. Department of the Treasury is responsible for paying all benefits accrued before this date.

DEFINITIONS

Affiliated Employers — The District of Columbia Metropolitan Police Department (MPD) and the District of Columbia Department of Fire and Emergency Medical Services (FEMS).

Covered Members — Sworn Police Officers and Firefighters become members on their first day of active duty (cadets are not eligible). 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.

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 years departmental service (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	

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 years if hired before 2/15/1980), 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.

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's 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.

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).

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) $4,077* (if hired before 11/1/1996) or $3,989* (if hired on or after 11/1/1996) per child
c) $12,232* (if hired before 11/1/1996) or $11,967* (if hired on or after 11/1/1996) divided by the number of children.

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.

*Survivor benefit amounts are as of March, 2017, and are subject to annual inflation adjustments.

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" sections.

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 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 may be increased. The increase is equal to the annual CPI. COLA's are included in benefit payments on and after April 1st. If member's retirement is effective after March 1 of the preceding year, the COLA amount will be prorated.

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

SCHEDULE F

SCHEDULES OF MEMBER DATA

TABLE 1

RECONCILIATION OF MEMBER DATA
AS OF OCTOBER 1, 2017

TEACHERS' RETIREMENT PLAN

	Actives	Retirees	Disabled	Beneficiaries	Vested Terms	Total
1. Headcounts as of October 1, 2016	5,141	3,617	116	149	1,176	10,199
2. Change in status during the year:						
a. Death		(63)	(6)	(3)		(72)
b. Disabled	(1)	(1)	2			
c. Retired	(61)	84			(23)	
d. Vested Termination	(240)				240	
e. Nonvested Termination	(403)					(403)
f. Benefits Expired/Refund	(158)		(2)	(2)	(34)	(196)
3. New member due to:						
a. New Hire	817					817
b. Rehire	104	(2)			(29)	73
c. Death of Participant				9		9
d. Adjustments		1				1
4. Headcounts as of October 1, 2017	5,199	3,636	110	153	1,330	10,428

SCHEDULE F

SCHEDULES OF MEMBER DATA

TABLE 2

RECONCILIATION OF MEMBER DATA
AS OF OCTOBER 1, 2017

POLICE OFFICERS' RETIREMENT PLAN

	Actives	Retirees	Disabled	Beneficiaries	Vested Terms	Total
1. Headcounts as of October 1, 2016	3,651	1,593	310	362	197	6,113
2. Change in status during the year:						
a. Death		(15)	(1)	(5)		(21)
b. Disabled	(2)		3		(1)	
c. Retired	(147)	158			(11)	
d. Vested Termination	(88)				88	
e. Nonvested Termination	(47)					(47)
f. Benefits Expired/Refund	(34)		(2)	(12)	(18)	(66)
3. New member due to:						
a. New Hire	230					230
b. Rehire	21				(9)	12
c. Death of Participant				16		16
d. Adjustments	(1)			12		11
4. Headcounts as of October 1, 2017	3,583	1,736	310	373	246	6,248

SCHEDULE F

SCHEDULES OF MEMBER DATA

TABLE 3

RECONCILIATION OF MEMBER DATA
AS OF OCTOBER 1, 2017

FIREFIGHTERS' RETIREMENT PLAN

	Actives	Retirees	Disabled	Beneficiaries	Vested Terms	Total
1. Headcounts as of October 1, 2016	1,708	529	84	125	96	2,542
2. Change in status during the year:						
a. Death		(1)	(1)			(2)
b. Disabled	(3)		3			
c. Retired	(37)	44			(7)	
d. Vested Termination	(14)				14	
e. Nonvested Termination	(14)					(14)
f. Benefits Expired/Refund	(2)			(3)	(4)	(9)
3. New member due to:						
a. New Hire	82					82
b. Rehire	9				(5)	4
c. Death of Participant				2		2
d. Adjustments		3	1	10		14
4. Headcounts as of October 1, 2017	1,729	575	87	134	94	2,619

SCHEDULE F

TABLE 4

SCHEDULE OF ACTIVE MEMBER DATA
AS OF OCTOBER 1, 2017

TEACHERS' RETIREMENT PLAN

Attained Age	Completed Years of Service								
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total	Payroll
Under 20	0	0	0	0	0	0	0	0	$ 0
20 to 24	58	0	0	0	0	0	0	58	$ 3,224,910
25 to 29	693	61	1	0	0	0	0	755	$ 47,062,487
30 to 34	724	307	36	1	0	0	0	1,068	$ 81,551,898
35 to 39	501	252	121	10	0	0	0	884	$ 77,274,414
40 to 44	341	180	116	91	7	0	0	735	$ 69,738,939
45 to 49	195	125	83	123	53	7	0	586	$ 56,621,153
50 to 54	106	60	56	54	36	50	16	378	$ 37,649,115
55 to 59	57	35	43	56	36	50	44	321	$ 32,451,276
60 to 64	41	37	44	54	23	28	49	276	$ 27,916,517
65 to 69	18	11	15	13	8	19	23	107	$ 11,060,158
70 & Over	3	4	1	8	4	2	9	31	$ 3,211,285
Total	2,737	1,072	516	410	167	156	141	5,199	$ 447,762,152

Average Age: 40.65
Average Service: 7.81

SCHEDULE F

TABLE 5

SCHEDULE OF ACTIVE MEMBER DATA
AS OF OCTOBER 1, 2017

POLICE OFFICERS' RETIREMENT PLAN

Attained Age	Completed Years of Service								
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total	Payroll
Under 20	0	0	0	0	0	0	0	0	$ 0
20 to 24	97	0	0	0	0	0	0	97	$ 5,805,305
25 to 29	444	52	3	0	0	0	0	499	$ 32,280,002
30 to 34	231	252	87	0	0	0	0	570	$ 41,231,142
35 to 39	86	123	294	39	0	0	0	542	$ 43,320,492
40 to 44	24	40	146	206	70	0	0	486	$ 42,590,358
45 to 49	6	35	108	175	165	223	0	712	$ 67,682,776
50 to 54	8	15	47	90	90	253	6	509	$ 50,071,611
55 to 59	0	7	13	30	19	51	23	143	$ 14,080,768
60 to 64	0	2	2	6	3	5	7	25	$ 2,472,119
65 to 69	0	0	0	0	0	0	0	0	$ 0
70 & Over	0	0	0	0	0	0	0	0	$ 0
Total	896	526	700	546	347	532	36	3,583	$ 299,534,573

Average Age: 40.17
Average Service: 13.62

SCHEDULE F

TABLE 6

**SCHEDULE OF ACTIVE MEMBER DATA
AS OF OCTOBER 1, 2017**

FIREFIGHTERS' RETIREMENT PLAN

Attained Age	Completed Years of Service								
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+	Total	Payroll
Under 20	0	0	0	0	0	0	0	0	$ 0
20 to 24	90	7	0	0	0	0	0	97	$ 5,393,350
25 to 29	83	37	0	0	0	0	0	120	$ 6,979,323
30 to 34	62	107	157	1	0	0	0	327	$ 22,693,293
35 to 39	11	78	181	18	0	0	0	288	$ 21,423,880
40 to 44	4	17	129	75	19	8	0	252	$ 21,220,113
45 to 49	4	1	46	100	44	120	0	315	$ 29,841,453
50 to 54	2	1	14	24	69	85	20	215	$ 22,503,566
55 to 59	0	0	3	7	17	48	28	103	$ 10,931,523
60 to 64	0	0	1	0	0	2	9	12	$ 1,383,271
65 & Over	0	0	0	0	0	0	0	0	$ 0
Total	256	248	531	225	149	263	57	1,729	$ 142,369,772

Average Age: 40.35
Average Service: 14.80

SCHEDULE F

TABLE 7

SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2017

TEACHERS' RETIREMENT PLAN
DISTRICT ONLY

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Total	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20	0	$0	0	$0	5	$25,760	5	$25,760
20 to 24	0	$0	0	$0	2	$6,796	2	$6,796
25 to 29	0	$0	0	$0	0	$0	0	$0
30 to 34	0	$0	0	$0	0	$0	0	$0
35 to 39	0	$0	0	$0	2	$16,860	2	$16,860
40 to 44	0	$0	1	$33,972	3	$31,119	4	$65,091
45 to 49	0	$0	5	$181,284	0	$0	5	$181,284
50 to 54	6	$203,480	5	$179,628	1	$2,480	12	$385,588
55 to 59	66	$2,273,062	13	$476,004	9	$107,663	88	$2,856,729
60 to 64	349	$10,663,514	25	$723,818	15	$178,239	389	$11,565,571
65 to 69	1,013	$23,062,979	38	$687,226	33	$197,826	1,084	$23,948,031
70 to 74	1,335	$20,430,481	19	$291,587	38	$234,978	1,392	$20,957,046
75 to 79	615	$8,030,287	4	$25,482	29	$149,440	648	$8,205,209
80 to 84	201	$2,236,500	0	$0	11	$102,959	212	$2,339,459
85 to 89	42	$500,835	0	$0	5	$49,915	47	$550,750
90 to 94	8	$90,519	0	$0	0	$0	8	$90,519
95 & Over	1	$5,976	0	$0	0	$0	1	$5,976
Total	3,636	$67,497,633	110	$2,599,001	153	$1,104,035	3,899	$71,200,669

Average Age: 68.76

SCHEDULE F

TABLE 8

SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2017

TEACHERS' RETIREMENT PLAN
FEDERAL PLUS DISTRICT

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Total	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20	0	$0	0	$0	5	$33,144	5	$33,144
20 to 24	0	$0	0	$0	3	$20,316	3	$20,316
25 to 29	0	$0	0	$0	0	$0	0	$0
30 to 34	0	$0	0	$0	0	$0	0	$0
35 to 39	0	$0	0	$0	2	$16,860	2	$16,860
40 to 44	0	$0	1	$33,972	3	$45,744	4	$79,716
45 to 49	0	$0	5	$181,284	2	$15,396	7	$196,680
50 to 54	6	$282,324	5	$179,628	2	$14,544	13	$476,496
55 to 59	66	$3,282,600	17	$566,976	14	$266,964	97	$4,116,540
60 to 64	350	$17,459,688	27	$879,204	17	$410,220	394	$18,749,112
65 to 69	1,031	$48,878,340	46	$1,452,444	45	$840,504	1,122	$51,171,288
70 to 74	1,445	$68,846,028	59	$1,835,460	78	$1,498,572	1,582	$72,180,060
75 to 79	926	$43,815,204	36	$1,046,364	83	$1,572,840	1,045	$46,434,408
80 to 84	693	$32,896,392	39	$1,217,711	57	$1,285,824	789	$35,399,927
85 to 89	474	$21,548,532	23	$701,208	56	$1,368,768	553	$23,618,508
90 to 94	243	$10,308,396	19	$692,424	43	$1,060,800	305	$12,061,620
95 & Over	108	$5,196,288	14	$583,536	18	$472,404	140	$6,252,228
Total	5,342	$252,513,792	291	$9,370,211	428	$8,922,900	6,061	$270,806,903

SCHEDULE F

TABLE 9

SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2017

POLICE OFFICERS' RETIREMENT PLAN
DISTRICT ONLY

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Total	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20	0	$0	0	$0	39	$325,261	39	$325,261
20 to 24	0	$0	0	$0	5	$87,356	5	$87,356
25 to 29	0	$0	2	$46,452	0	$0	2	$46,452
30 to 34	0	$0	2	$48,444	1	$28,116	3	$76,560
35 to 39	0	$0	8	$285,564	0	$0	8	$285,564
40 to 44	0	$0	18	$617,196	5	$129,756	23	$746,952
45 to 49	2	$42,535	57	$2,156,064	32	$588,936	91	$2,787,535
50 to 54	481	$22,243,055	90	$3,201,468	50	$854,965	621	$26,299,488
55 to 59	478	$19,758,384	67	$1,688,799	45	$679,845	590	$22,127,028
60 to 64	399	$10,707,180	46	$877,660	69	$1,020,713	514	$12,605,553
65 to 69	270	$4,002,547	16	$150,246	64	$1,052,117	350	$5,204,910
70 to 74	92	$662,969	4	$45,285	42	$600,607	138	$1,308,861
75 to 79	14	$122,641	0	$0	13	$287,626	27	$410,267
80 to 84	0	$0	0	$0	4	$54,479	4	$54,479
85 to 89	0	$0	0	$0	4	$96,840	4	$96,840
90 to 94	0	$0	0	$0	0	$0	0	$0
95 & Over	0	$0	0	$0	0	$0	0	$0
Total	1,736	$57,539,311	310	$9,117,178	373	$5,806,617	2,419	$72,463,106

Average Age: 57.17

SCHEDULE F

TABLE 10

SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2017

POLICE OFFICERS' RETIREMENT PLAN
FEDERAL PLUS DISTRICT

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Total	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20	0	$0	0	$0	43	$492,912	43	$492,912
20 to 24	0	$0	0	$0	7	$149,916	7	$149,916
25 to 29	0	$0	2	$46,452	0	$0	2	$46,452
30 to 34	0	$0	2	$48,444	2	$32,136	4	$80,580
35 to 39	0	$0	8	$285,564	0	$0	8	$285,564
40 to 44	0	$0	18	$617,196	6	$159,120	24	$776,316
45 to 49	3	$78,312	60	$2,218,176	37	$1,077,864	100	$3,374,352
50 to 54	481	$32,770,776	94	$3,288,252	58	$1,406,196	633	$37,465,224
55 to 59	479	$33,749,604	95	$3,328,572	74	$2,129,124	648	$39,207,300
60 to 64	466	$31,887,096	99	$4,260,888	144	$4,163,097	709	$40,311,081
65 to 69	813	$46,101,768	146	$6,589,476	232	$6,750,296	1,191	$59,441,540
70 to 74	823	$46,071,288	162	$7,208,292	256	$7,733,340	1,241	$61,012,920
75 to 79	424	$23,944,776	104	$5,161,956	204	$6,442,092	732	$35,548,824
80 to 84	191	$11,022,624	73	$3,974,100	177	$5,836,140	441	$20,832,864
85 to 89	57	$3,995,904	56	$3,031,812	114	$3,782,832	227	$10,810,548
90 to 94	14	$1,151,664	30	$1,803,312	66	$2,011,308	110	$4,966,284
95 & Over	1	$93,744	9	$632,976	27	$888,432	37	$1,615,152
Total	3,752	$230,867,556	958	$42,495,468	1,447	$43,054,805	6,157	$316,417,829

Average Age: 67.51

SCHEDULE F

TABLE 11

SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2017

FIREFIGHTERS' RETIREMENT PLAN
DISTRICT ONLY

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Total	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20	0	$0	0	$0	23	$241,602	23	$241,602
20 to 24	0	$0	0	$0	3	$7,179	3	$7,179
25 to 29	0	$0	1	$21,420	1	$27,186	2	$48,606
30 to 34	0	$0	4	$109,200	2	$4,559	6	$113,759
35 to 39	0	$0	5	$159,120	0	$0	5	$159,120
40 to 44	0	$0	6	$238,320	2	$59,373	8	$297,693
45 to 49	0	$0	13	$521,424	8	$261,057	21	$782,481
50 to 54	47	$2,373,429	14	$475,932	12	$272,845	73	$3,122,206
55 to 59	168	$7,548,069	8	$194,990	20	$418,731	196	$8,161,790
60 to 64	207	$7,377,956	18	$409,021	19	$526,515	244	$8,313,492
65 to 69	110	$2,411,670	16	$192,306	18	$286,628	144	$2,890,604
70 to 74	39	$507,946	2	$1,621	15	$296,937	56	$806,504
75 to 79	4	$48,752	0	$0	6	$95,604	10	$144,356
80 to 84	0	$0	0	$0	5	$133,775	5	$133,775
85 to 89	0	$0	0	$0	0	$0	0	$0
90 to 94	0	$0	0	$0	0	$0	0	$0
95 & Over	0	$0	0	$0	0	$0	0	$0
Total	575	$20,267,822	87	$2,323,354	134	$2,631,991	796	$25,223,167

Average Age: 57.85

SCHEDULE F

TABLE 12

SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2017

FIREFIGHTERS' RETIREMENT PLAN
FEDERAL PLUS DISTRICT

Attained Age	Service Retirement		Disability Retirement		Survivors and Beneficiaries		Total	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
Under 20	0	$0	0	$0	24	$331,488	24	$331,488
20 to 24	0	$0	0	$0	4	$16,260	4	$16,260
25 to 29	0	$0	1	$21,420	1	$48,276	2	$69,696
30 to 34	0	$0	4	$109,200	2	$8,148	6	$117,348
35 to 39	0	$0	5	$159,120	1	$28,428	6	$187,548
40 to 44	0	$0	6	$238,320	2	$67,872	8	$306,192
45 to 49	0	$0	13	$521,424	9	$346,392	22	$867,816
50 to 54	47	$3,610,344	14	$475,932	14	$428,040	75	$4,514,316
55 to 59	168	$12,948,984	13	$417,216	27	$708,780	208	$14,074,980
60 to 64	215	$16,581,564	35	$1,656,708	38	$1,202,784	288	$19,441,056
65 to 69	153	$11,518,776	44	$2,322,408	50	$1,539,612	247	$15,380,796
70 to 74	208	$13,989,036	53	$2,725,704	79	$2,426,050	340	$19,140,790
75 to 79	205	$13,320,084	77	$4,354,944	96	$2,933,964	378	$20,608,992
80 to 84	94	$6,149,004	40	$2,038,860	58	$1,878,120	192	$10,065,984
85 to 89	42	$2,990,532	29	$1,591,080	62	$2,173,584	133	$6,755,196
90 to 94	14	$1,039,524	13	$822,312	50	$1,789,344	77	$3,651,180
95 & Over	0	$0	8	$523,091	16	$607,008	24	$1,130,099
Total	1,146	$82,147,848	355	$17,977,739	533	$16,534,150	2,034	$116,659,737

SCHEDULE G

SCHEDULE OF RETIREES ADDED TO AND REMOVED FROM ROLLS

DISTRICT BENEFIT ONLY
($ IN THOUSANDS)

		Added		Removed			Rolls at End of Year			
Fiscal Year Ended	Plan	Number	Annual Allowances	Number	Annual Allowances	Increase Due to Plan Amendments	Number	Annual Allowances	Percentage Increase in Annual Allowances	Average Annual Allowances
September 30, 2013	Teachers	202	$5,289	39	$436	$706	3,448	$52,966	11.7%	$15
	Police	110	$3,746	24	$248	$302	1,584	$34,392	12.4%	$22
	Fire	64	$2,308	6	$50	$42	599	$15,138	17.9%	$25
September 30, 2014	Teachers	218	$6,079	65	$955	$597	3,601	$58,687	10.8%	$16
	Police	157	$6,139	34	$399	$139	1,707	$40,271	17.1%	$24
	Fire	80	$3,326	21	$496	$211	658	$18,179	20.1%	$28
September 30, 2015	Teachers	183	$4,950	66	$822	$84	3,718	$62,899	7.2%	$17
	Police	240	$10,865	24	$189	-$535	1,923	$50,412	25.2%	$26
	Fire	44	$1,953	16	$235	-$95	686	$19,802	8.9%	$29
September 30, 2016	Teachers	222	$6,844	58	$1,021	$68	3,882	$68,790	9.4%	$18
	Police	381	$15,394	39	$822	-$1,397	2,265	$63,587	26.1%	$28
	Fire	60	$2,811	8	$200	-$262	738	$22,151	11.9%	$30
September 30, 2017	Teachers	96	$2,599	79	$1,211	$1,023	3,899	$71,201	3.5%	$18
	Police	189	$8,485	35	$537	$928	2,419	$72,463	14.0%	$30
	Fire	63	$2,802	5	$141	$411	796	$25,223	13.9%	$32

SCHEDULE G

SCHEDULE OF RETIREES ADDED TO AND REMOVED FROM ROLLS

FEDERAL PLUS DISTRICT BENEFIT
($ IN THOUSANDS)

		Added		Removed			Rolls at End of Year			
Fiscal Year Ended	Plan	Number	Annual Allowances	Number	Annual Allowances	Increase Due to Plan Amendments	Number	Annual Allowances	Percentage Increase in Annual Allowances	Average Annual Allowances
September 30, 2013	Teachers	390	$7,883	348	$6,676	$5,448	6,172	$263,691	2.6%	$43
	Police	164	$8,218	172	$7,493	$3,572	5,695	$267,499	1.6%	$47
	Fire	80	$4,327	60	$2,896	$1,322	1,994	$105,520	2.7%	$53
September 30, 2014	Teachers	245	$10,540	228	$8,792	$4,251	6,189	$269,690	2.3%	$44
	Police	240	$13,009	218	$8,382	$3,689	5,717	$275,815	3.1%	$48
	Fire	121	$6,969	89	$3,880	$1,391	2,026	$110,000	4.2%	$54
September 30, 2015	Teachers	197	$8,040	249	$17,224	$7,071	6,137	$267,577	-0.8%	$44
	Police	312	$19,957	168	$9,132	$4,269	5,861	$290,909	5.5%	$50
	Fire	70	$3,988	103	$5,370	$2,006	1,993	$110,624	0.6%	$56
September 30, 2016	Teachers	446	$15,992	400	$18,508	$5,143	6,183	$270,204	1.0%	$44
	Police	465	$25,416	216	$9,739	-$1,317	6,110	$305,269	4.9%	$50
	Fire	83	$4,887	68	$3,260	-$16	2,008	$112,235	1.5%	$56
September 30, 2017	Teachers	107	$3,937	229	$8,829	$5,495	6,061	$270,807	0.2%	$45
	Police	261	$14,438	214	$9,061	$5,772	6,157	$316,418	3.7%	$51
	Fire	84	$4,919	58	$2,727	$2,233	2,034	$116,660	3.9%	$57

SCHEDULE H

ANALYSIS OF FINANCIAL EXPERIENCE

Gains & Losses in Actuarial Accrued Liabilities
Resulting from Difference Between
Assumed Experience & Actual Experience
($ Millions)

Type of Activity	Teachers	Police	Fire	Police and Fire	Total
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	$1.1	($0.8)	$(1.1)	$(1.9)	($0.8)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	$0.4	$4.6	$1.3	$5.9	$6.3
Death-in Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	$0.3	$1.0	$0.4	$1.4	$1.7
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	$5.9	$5.6	($6.2)	($0.6)	$5.3
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	$32.7	$50.8	$58.3	$109.1	$141.8
New Members. Additional unfunded actuarial accrued liability will produce a loss.	($32.8)	($20.4)	($12.8)	($33.2)	($66.0)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	$14.2	$25.2	$10.7	$35.9	$50.1
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	$8.3	$1.5	$(2.1)	$(0.6)	$7.7
COLA/CPI. If inflation is different than expected, gains or losses can occur.	$17.2	$27.9	$8.6	$36.5	$53.7
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	$15.8	$(4.3)	$(3.0)	($7.3)	$8.5
Gain (or Loss) During Year From Financial Experience	$63.1	$91.1	$54.1	$145.2	$208.3
Non-Recurring Items. Adjustments for plan amendments, assumption changes, method changes or audit changes.	$(50.0)	$(125.5)	$7.5	$(118.0)	$(168.0)
Composite Gain (or Loss) During Year	$13.1	$(34.4)	$61.6	$27.2	$40.3

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TO: BOARD OF TRUSTEES

FROM: MARY COLLINS, CHAIRMAN

DATE: JANUARY 18, 2018

SUBJECT: BENEFITS COMMITTEE REPORT

The Benefits Committee did not meet in January 2018. The following report reflects Benefits Department activities and projects that occurred since the December 2017 Board meeting.

Federal Employees Group Life Insurance Program (FEGLI)

The Benefits Department continues to communicate with retired members who have FEGLI coverage regarding their existing beneficiary designation forms. On December 29, 2017, approximate 3,500 letters were mailed to members who currently have a FEGLI premium deducted from their annuity payments. Within the next two weeks, similar letters will be mailed to retired members who are age 65 or over, and have FEGLI coverage but are no longer required to pay a premium. In addition to those letters, the January 1, 2018 earnings statements included information related to this issue.

Health Plan Open Season

Open Season for calendar year 2018 health benefits closed on December 11, 2017 for both the Federal Employees Health Insurance (FEHB) and District Employees Health Benefits (DCHB). The Benefits Department received 435 changes for retirees participating in FEHB and 51for retirees participating in DCHB.

Washington Teachers Union (WTU) Collective Bargaining Agreement

In December 2017 the DCPS Human Capital Department updated the salaries for all teachers who are eligible to receive the 4% pay increase covered by the WTU bargaining agreement, retroactive to October 1, 2016. The Benefits Department estimates that approximately 120 teachers, who retired since October 2016 will be impacted. Since this increase will result in a change in their average base pay, we will need to recalculate their monthly benefit and make an adjustment to their life insurance base pay, as well. Once any retroactive contributions are received, Benefits can determine whether any terminated employees who were paid refunds are entitled to any additional amounts.

Retiree Self-Service Module

The Self-Service Module is now undergoing user testing by the Benefits Department. We are currently on track to deploy the Module in mid- to late February. This initial deployment will target a select group of members, who will be asked to provide us with feedback on improvements and functionality before it is launched to the full membership.

Benefits Department Monthly Statistics

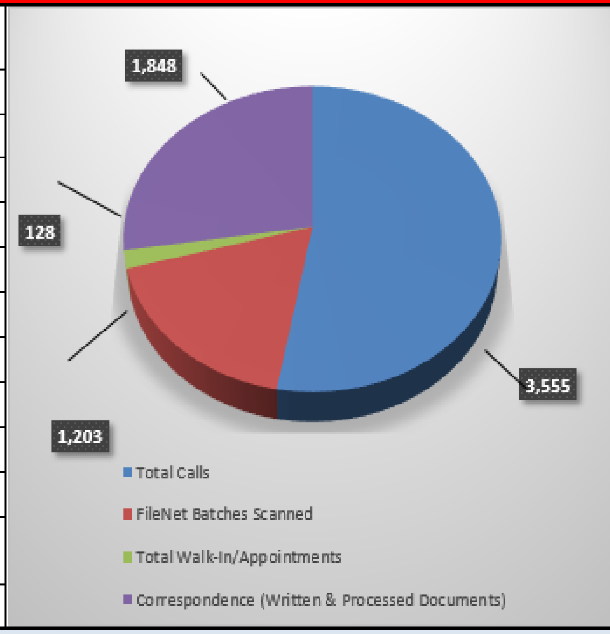
Activity	October	November	December
Retirement Claims Received	114	153	122
Processed Retirements	146	179	116
Average Processing Days	62	73	71
Telephone Calls	2,628	3,322	3,555
Walk-in Customers	85	103	128
Scanned Documents	4,752	5,737	4,359
QDROs Approved	0 final, 2 rejected	2 final, 2 rejected	0 final
Purchase of Service	4 ($42,123)	13 ($23,425.64)	20 ($131,619.21)

RETIREMENT CASE PROCESSING JANUARY 1, 2018 REPORT

CASES AVAILABLE FOR PROCESSING	CASES RECEIVED (but may not have been ready for payment)	CASES PROCESSED	CASE TYPE	PLAN		
				Fire	Police	Teacher
65	36	29	Beneficiary (One-Time Payments)	7	0	22
7	6	1	Deferred Annuity	1	0	0
1	0	1	Disability	0	1	0
5	0	5	Garnishment/Levy	1	4	0
39	4	35	Optional/Voluntary & Involuntary Annuity	4	16	15
6	3	3	QDRO/QMSCO	0	3	0
16	1	15	Survivor Annuity	1	10	4
1	0	1	AV Project	0	0	1
2	0	2	Student Certifications	1	1	0
24	12	12	Annuity Adjustments	0	6	6
3	0	3	Auto Debt Collections	0	3	0
9	7	2	Octo Review Monetary & Non Monetary Adjustments	0	2	0
34	21	13	Post 56 Adjustments	0	13	0
1	1	0	CAPS	0	0	0
78	31	47	Refund of Contributions**	1	7	39
291	122	169		16	66	87
			Gross Dollar Value of Refunds**	$38,365.34	$84,632.93	$1,021,013.27

DCRB Member Services Center Statistics
December 2017

Call Center Statistics	
Total Calls	**3,555**
Inbound Calls	2,696
Outbound Calls (Voicemails & Follow-up calls)	859
Average Talk Time	*4:31 minutes*
Average Caller Wait Time	*1:28 seconds*
Total Walk-In/Appointments	**128**
FileNet Batches Scanned	**1,203**
Documents Pages Scanned	4,359
Correspondence *(Written & Processed Documents)*	**1,848**
Email, Letter & Fax	714
Processed Documents (EFTs, address & name changes, tax forms, 1099s, & 2809s, etc.)	1,134
Total	**6,734**



Top 3 Contact Trends for the Month	
Health Insurance	1. Open Season inquiries *(assistance completing 2809s & District Health forms, monthly premiums, & coverage questions)* 2. Medicare Questions (eligibility, co-ordination of benefits, Medicare Part D, 3. Suspending and waiving coverage
Death Process	1. Report of a Death of members 2. Assistance with the Death Benefits Application 3. Life Insurance Questions *(Beneficiary Designation)*
Refund/Rollover	1. Contribution Balance Requests 2. Pre & post - tax contributions questions 3. Refund Process timeframe

Member Services November Statistical Comparison by Year

	2016	2017	Comments
Walk-In Visitors/Appointments	190	140	
Total Calls *(includes voice mails)*	3,828	4,310	
Emails, Letters & Faxes	420	633	
Total	**4,438**	**5,083**	*13 % overall increase from last year*

Member Services Center 12.2017

MEMBER SERVICES CUSTOMER SATISFACTION SURVEY
December 2017

Background

The reported survey outcomes are the results of the December 2017 Member Services Customer Satisfaction Survey. The data collected are from active and retired members of the District of Columbia Police Officers and Firefighters' and Teachers' Retirement Plans, their survivors and beneficiaries. The purpose of the survey is to gather and measure the customer experience, gaging their satisfaction in an effort to improve our service to them, as necessary.

Survey Objective

The resulting feedback will be used to:

- Increase member satisfaction and confidence
- Deliver actionable data to decision-makers
- Reduce caller and in-person wait times for service
- Set reasonable service expectations

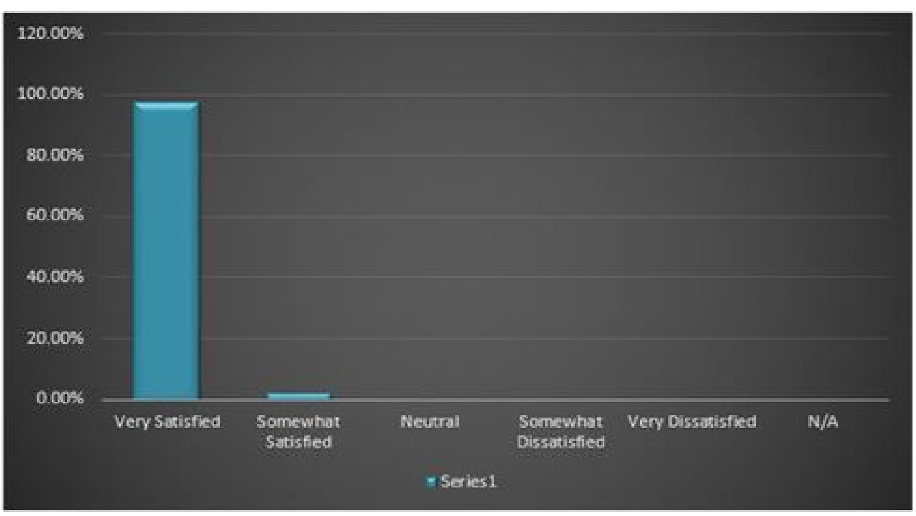
Methodology

- This month, survey participants were Plan members who made onsite visits to the DCRB member Service Center and members who contacted the center by email to the dcrb.benefits@dc.gov address. Some members arrived after having scheduled an appointment; others came in for assistance with updating their member information. The survey participants were randomly selected.

Participants

- 224 survey requests were provided to members and annuitants
- 44 responses were received.

Overall DCRB Member Satisfaction



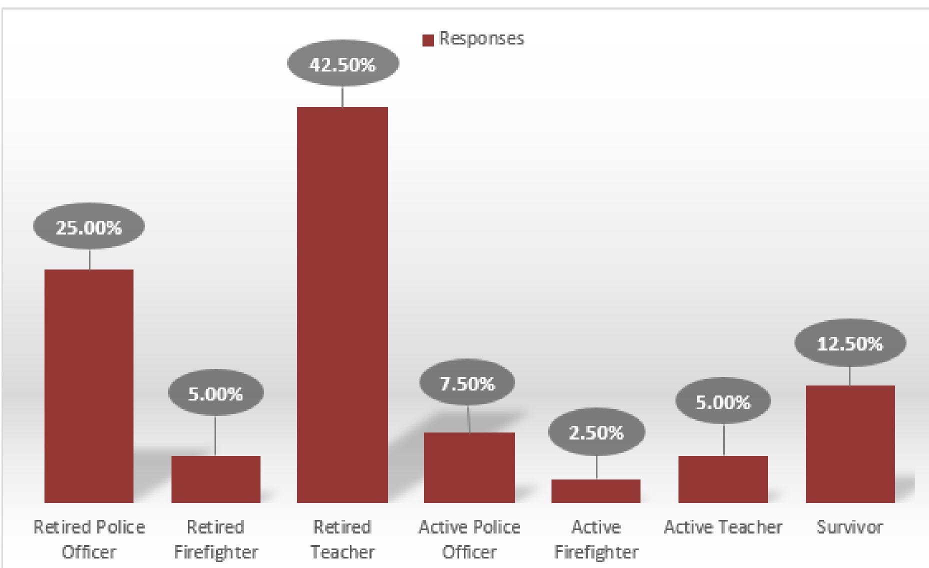
MSC Satisfaction Survey_December.2017

MEMBER SERVICES CUSTOMER SATISFACTION SURVEY
December 2017

Overall, how satisfied are you with the member service provided by DCRB?

Very Satisfied	97.44%	38
Somewhat Satisfied	2.56%	1
Neutral	0.00%	0
Somewhat Dissatisfied	0.00%	0
Very Dissatisfied	0.00%	0
N/A	0.00%	0
	Answered	**39**

Membership/Survivor Type



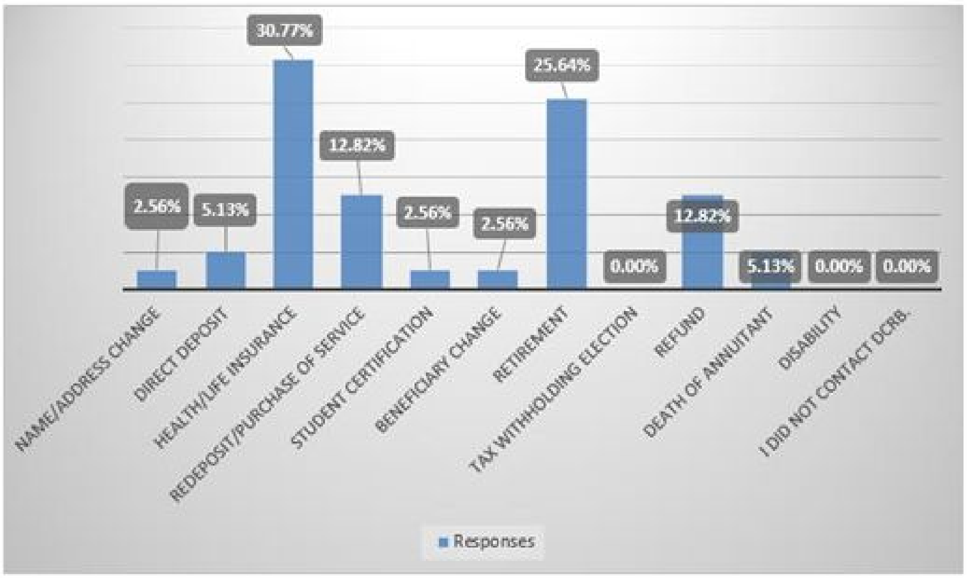
Knowledge and Skills

	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
Had the right information.	97.50%	2.50%	0.00%	0.00%	40
Understood your questions.	94.87%	5.13%	0.00%	0.00%	39
Provided clear answers.	97.50%	2.50%	0.00%	0.00%	40
Answered your questions.	92.50%	7.50%	0.00%	0.00%	40
Appeared well organized.	97.50%	0.00%	2.50%	0.00%	40
					40

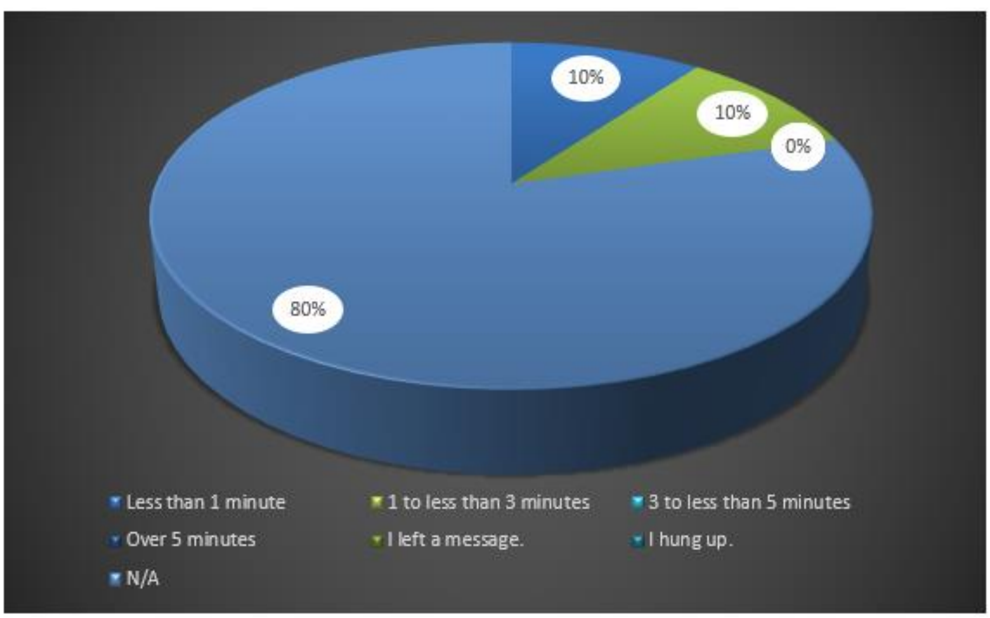
MSC Satisfaction Survey_December.2017

MEMBER SERVICES CUSTOMER SATISFACTION SURVEY
December 2017

Reason for Contact



Contact Wait Time



NO WRITTEN REPORT PROVIDED

January 16, 2018

Audit Results Presentation to:

District of Columbia Retirement Board – Audit Committee

CliftonLarsonAllen

www.cliftonlarsonallen.com

Agenda

- 2017 Audit Results
- Required Communications
- Financial Highlights

2017 Audit Results

- Independent Auditors' Report - Unmodified "clean" opinion that the financial statements are presented fairly, in all material respects, in conformity with U.S. Generally Accepted Accounting Principles (GAAP).
- Limited procedures were performed, and no opinion was rendered on management's discussion and analysis and the required supplemental information.
- Limited procedures were performed, and an unmodified "clean" "in-relation to" opinion was rendered on the supplemental schedules.

2017 Audit Results (continued)

- Report on Internal Control over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with *Government Auditing Standards*
  - No material weaknesses or significant deficiencies were identified.
  - No material findings associated with compliance or other matters were identified.
- Letter to the Board providing required communications with those charged with governance

CliftonLarsonAllen

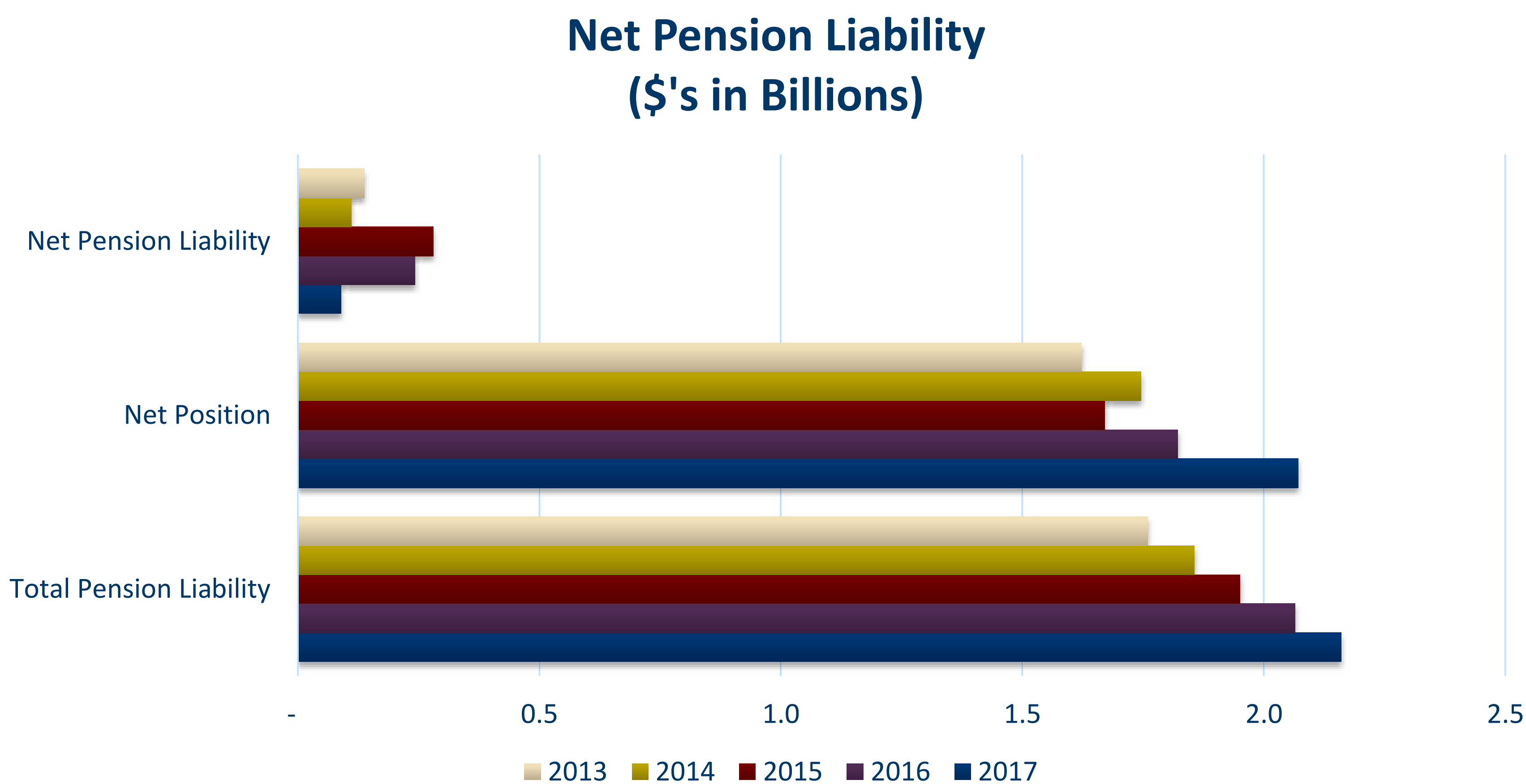
Required Governing Body Communications

- Auditor's responsibility under U.S. Generally Accepted Auditing Standards
- Significant accounting policies
- Management judgments and accounting estimates
  - Valuation of alternative investments
  - Actuarial assumptions and methods used
- One audit adjustment for an unrecorded manager fee payable reversing entry which decreased cash and manager fees payable by $5.8 million.
- No passed adjustments

Other Communications

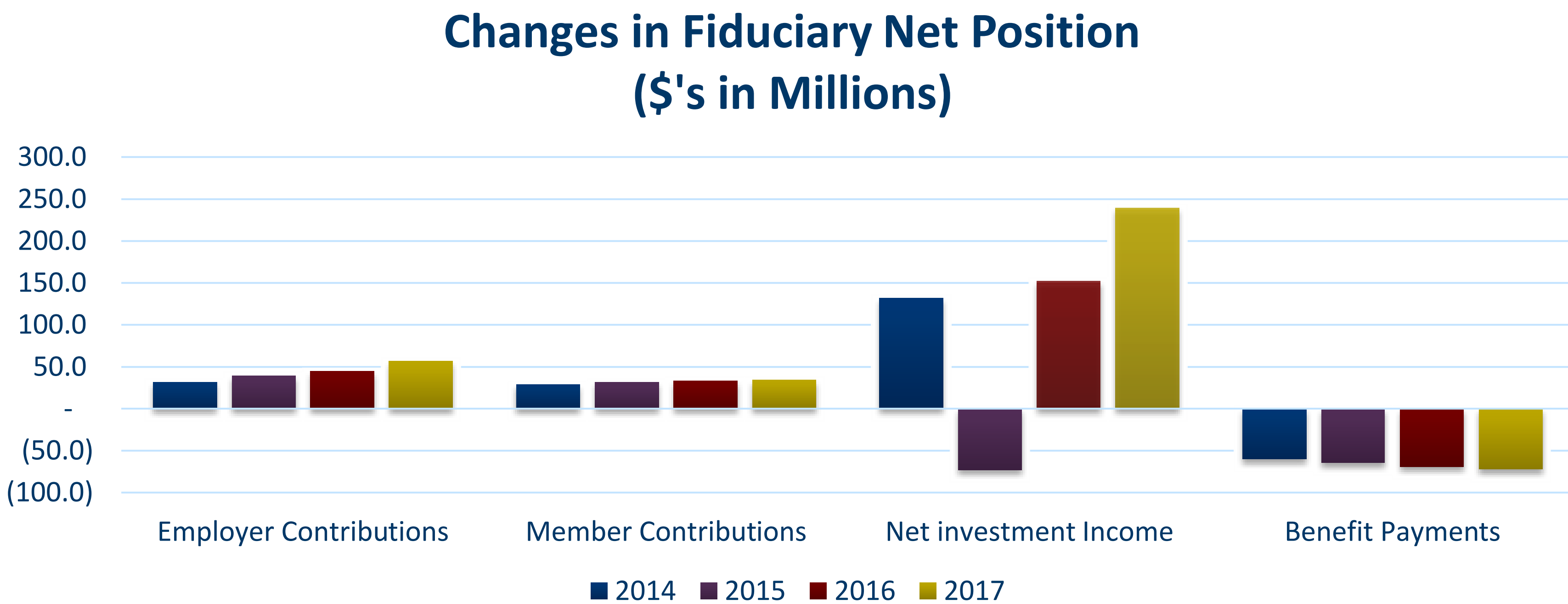
- Management was very cooperative and professional during the audit process
- No disagreements with management
- Management did not consult with other accountants on the application of GAAP or GAAS
- No major issues were discussed with management prior to retention
- Management Representations (including representations to the District's auditor, SB & Co.)
- Item to monitor in fiscal year 2018
  - DCHR identified District employees erroneously coded as ineligible for retirement or to the wrong retirement system. Some DCRB members affected by these errors.

Financial Highlights – Teachers Plan



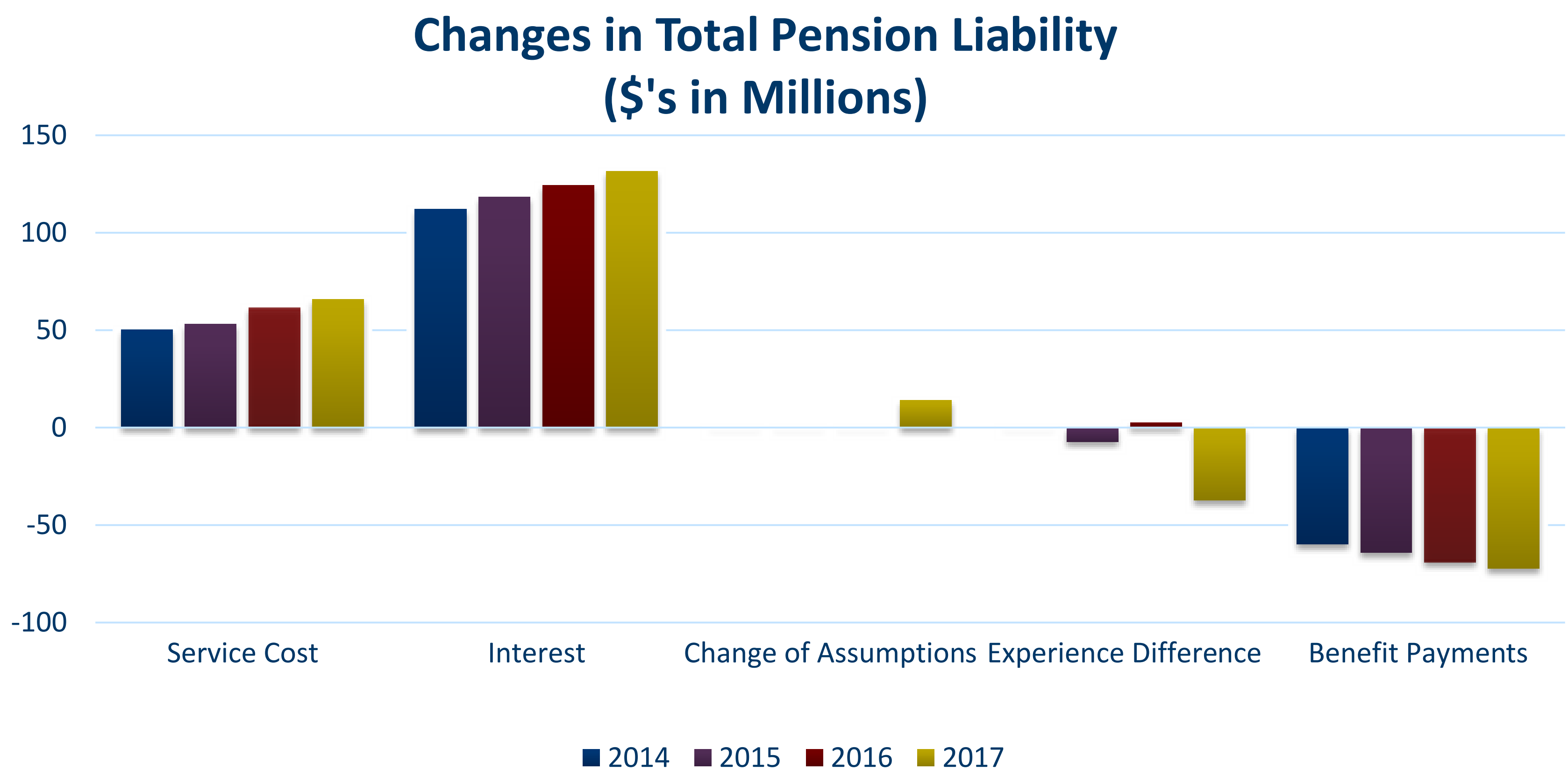
- Net Position as a % of Total Pension Liability increased from 88.27% in FY 2016 to 95.85% in FY 2017

Financial Highlights – Teachers Plan



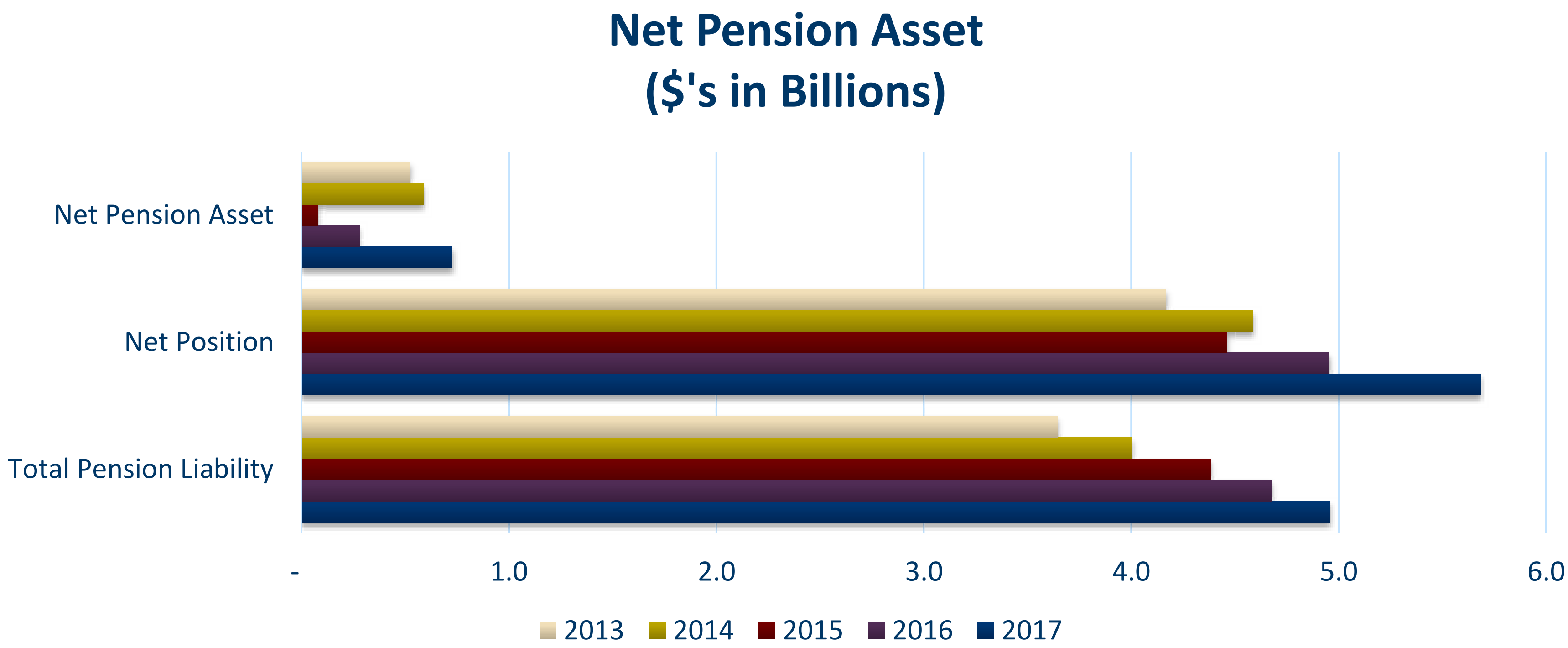
- Contributions
  - Active members increased from 5,141 in fiscal year 2016 to 5,199 in FY 2017
  - No change in contribution rates from fiscal year 2016 to FY 2017
- Investment Income
  - 12.785% money-weighted rate of return in FY 2017
- Benefit Payments
  - Retirees increased from 3,882 in FY 2016 to 3,899 in FY 2017

Financial Highlights – Teachers Plan



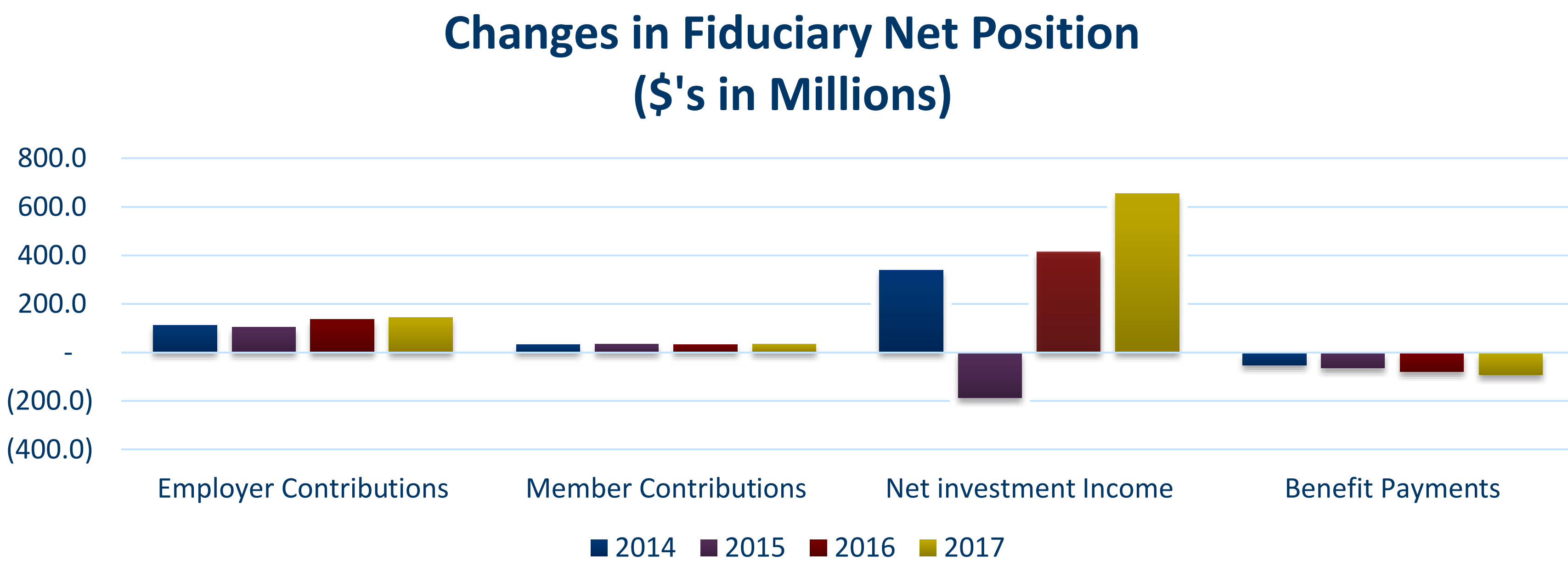
- Change of assumptions
  - Mortality tables updated from RP 2000 to RPH 2014

Financial Highlights – Police and Firefighters' Plan



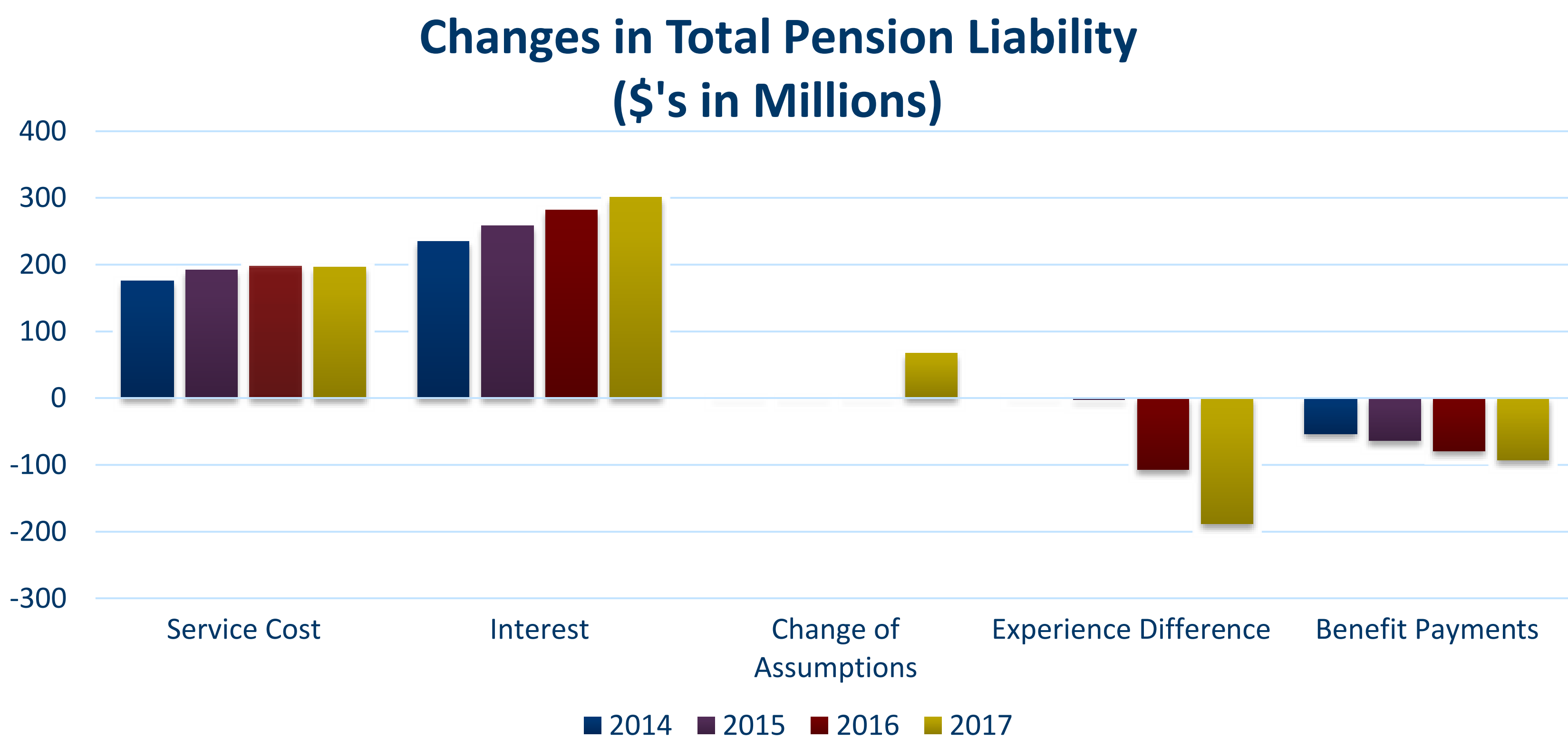
- Net Position as a % of Total Pension Liability increased from 105.97% in FY 2016 to 114.67% in FY 2017

Financial Highlights – Police and Firefighters' Plan



- Contributions
  - Active members decreased from 5,359 in 2016 to 5,312 in FY 2017
  - No change in contribution rates from FY 2016 to FY 2017
- Investment Income
  - 12.785% money-weighted rate of return in FY 2017
- Benefit Payments
  - Retirees increased from 3,003 in FY 2016 to 3,215 in FY 2017

Financial Highlights – Police and Firefighters' Plan



- Change of assumptions
  - Mortality tables updated from RP 2000 to RPH 2014

Glossary

- **Actuarial valuation** The determination, as of a point in time (the actuarial valuation date), of the service cost, total pension liability, and related actuarial present value of projected benefit payments for pensions performed in conformity with Actuarial Standards of Practice unless otherwise specified by the GASB.
- **Covered payroll** The payroll on which contributions to a pension plan are based. Revised from covered employee payroll to covered payroll by GASB 82. DCRB has historically reported covered payroll numbers and did not revise with the new GASB 67 definition therefore there were no changes to these amounts with the implementation of GASB 82.
- **Actuarial valuation date** The date as of which an actuarial valuation is performed.
- **Net pension liability** The liability of employers and nonemployer contributing entities to plan members for benefits provided through a defined benefit pension plan.
- **Projected benefit payments** All benefits estimated to be payable through the pension plan to current active and inactive plan members as a result of their past service and their expected future service.
- **Service cost** The portion of the actuarial present value of projected benefit payments that is attributed to a valuation year.
- **Total pension liability** The portion of the actuarial present value of projected benefit payments that is attributed to past periods of member service in conformity with the requirements of this Statement.

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District of Columbia Teachers' and Police Officers and Firefighters' Retirement Fund

Financial Statements and Schedules (with Independent Auditors' Report thereon)

As of and for the Years Ended September 30, 2017 and 2016

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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, 2017 and 2016, 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 opinions.

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, 2017 and 2016, 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, 2017 and

2016, 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.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated December 29, 2017 on our consideration of the District of Columbia Teachers' Retirement Fund and the District of Columbia Police Officers and Firefighters' Retirement Fund 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 solely 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 the effectiveness of the Funds' 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 internal control over financial reporting and compliance.

CliftonLarsonAllen LLP

CliftonLarsonAllen LLP

Baltimore, Maryland
December 29, 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, 2017, 2016 and 2015, 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 yearend. 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.

MANAGEMENT'S DISCUSSION AND ANALYSIS

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 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.

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 2017 totaled $1,168.4 million, an increase of $350.2 million over the fiscal year 2016 amount of $818.2 million. This increase was primarily due to the higher investment returns in fiscal year 2017.

Employer contributions in fiscal year 2017 totaled $202.4 million, an increase of $21.8 million over the fiscal year 2016 amount of $180.6 million. The fiscal year 2017 employer contribution was derived from the contribution rate calculated in the actuary's report for the period ended October 1, 2015 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.

Plan member contributions in fiscal year 2017 totaled $67.8 million, an increase of $1.4 million over the fiscal year 2016 amount of $66.4 million. Member contributions consist of amounts paid by members for future retirement benefits.

Investment income, net of investment fees, for fiscal year 2017 totaled $894.9 million, a return of 13.2%. Net investment income for fiscal year 2016 totaled $567.4 million, a return of 9.3%. Other income in fiscal year 2017 totaled $3.4 million, a decrease of $(0.4) million over the fiscal year 2016 amount of $3.8 million. Other income consists mainly of reimbursements of administrative expenses from the U.S. Treasury.

MANAGEMENT'S DISCUSSION AND ANALYSIS

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 2017 totaled $190.0 million, an increase of $15.7 million or 9.0% over the fiscal year 2016 amount of $174.3 million.

Benefit payments for fiscal year 2017 totaled $164.6 million, an increase of $17.0 million or 11.6% over the fiscal year 2016 amount of $147.6 million. This increase reflects the combination of a net growth of 3.3% 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 2017 and 2016, benefit payments made on behalf of current retirees, survivors and beneficiaries comprised approximately 87% of DCRB expenses.

Refunds in fiscal year 2017 totaled $7.8 million, a decrease of $(0.6) million or -6.8% over the fiscal year 2016 amount of $8.4 million. Lump-sum distributions, or refunds, of member accounts are at the discretion of the member, and vary from year to year.

Administrative expenses in fiscal year 2017 totaled $17.5 million, a decrease of $(0.2) million or -1.13% over the fiscal year 2016 amount of $17.7 million. In fiscal years 2017 and 2016, the administrative expenses were equivalent to 23 and 26 basis points of the assets under management, respectively.

Funding Status

As of October 1, 2017 (the date of the most recent actuarial valuation), the funding status was 105.2% 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, 2017, the actuarial value of assets set aside to pay pension benefits was about $2.0 billion for the TRF and about $5.4 billion for the POFRF for a total of $7.4 billion. The fair value of these assets at September 30, 2017, included on the financial statements of DCRB was $2.1 billion for the TRF and $5.6 billion for the POFRF for a total of $7.7 billion. Therefore, when viewing the actuarial funding status in this case, the market value of assets would provide a slightly better funding position to the actuarial value of assets as of the October 1, 2016 valuation.

MANAGEMENT'S DISCUSSION AND ANALYSIS

FINANCIAL ANALYSIS SUMMARY

Net position may serve over time as a useful indication of DCRB's financial strength. At the close of fiscal years 2017 and 2016, the net position of DCRB totaled $7.8 and $6.8 billion, respectively. Net position serves to meet DCRB's ongoing obligations to Plan participants and their survivors and beneficiaries.

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 2017, 2016 and 2015.

Condensed and Combining Statements of Fiduciary Net Position
(Dollars in thousands)

	2017	2016	2015	2017 Percent Change	2016 Percent Change
Assets					
Cash and short-term investments	$ 88,216	$ 51,480	$ 75,492	71.4%	-31.8%
Receivables	63,684	14,235	14,077	347.4%	1.1%
Prepaid expenses	-	10	47	-100.0%	-78.7%
Investments	7,675,417	6,728,612	6,056,101	14.1%	11.1%
Total assets	7,827,317	6,794,337	6,145,717	15.2%	10.6%
Liabilities					
Other payables	6,337	7,879	4,214	-19.6%	87.0%
Investment commitments payable	65,939	9,878	8,867	567.5%	11.4%
Total liabilities	72,276	17,757	13,081	307.0%	35.7%
Net Position Restricted For Pensions	$ 7,755,041	$ 6,776,580	$ 6,132,636	14.4%	10.5%

MANAGEMENT'S DISCUSSION AND ANALYSIS

Condensed and Combining Statements of Changes in Fiduciary Net Position

(Dollars in thousands)

	2017	2016	2015	2017 Percent Change	2016 Percent Change
Additions					
Employer contributions	$ 202,412	$ 180,584	$ 142,943	12.1%	26.3%
Plan member contributions	67,788	66,376	65,300	2.1%	1.6%
Net investment income (loss)	894,864	567,419	(259,930)	57.7%	318.3%
Other income	3,375	3,843	1,397	-12.2%	175.1%
Total additions (reductions)	1,168,439	818,222	(50,290)	42.8%	1727.0%
Deductions					
Benefit payments	164,606	147,554	127,710	11.6%	15.5%
Retirement benefits payable to U.S. Treasury	-	676	-		
Refunds	7,813	8,384	6,972	-6.8%	20.3%
Administrative expenses	17,559	17,664	16,482	-0.6%	7.2%
Total deductions	189,978	174,278	151,164	9.0%	15.3%
Change In Net Position	$ 978,461	$ 643,944	$ (201,454)	51.9%	419.6%

MANAGEMENT'S DISCUSSION AND ANALYSIS

FINANCIAL HIGHLIGHTS

The Teachers' Retirement Fund financial highlights for fiscal year 2017 are as follows:

- Net position restricted for pensions as of September 30, 2017 was $2.1 billion, an increase of $248.7 million or 13.7% over fiscal year 2016.
- Investment income, net of investment expenses, for fiscal year 2017 was $239.6 million, a return of 13.2%. Investment income, net of investment expenses, for fiscal year 2016 was $152.3 million, a return of 9.3%.
- Total additions for fiscal year 2017 were $331.6 million, an increase of $100.2 million over fiscal year 2016. In fiscal year 2016, there was a total increase of $231.4 million. Employer contributions for fiscal year 2017 were $56.8 million, an increase of $12.3 million or 27.7% over fiscal year 2016. Teachers' Plan member contributions for fiscal year 2017 were $34.3 million, an increase of $0.8 million or 2.3% over fiscal year 2016. Other income for fiscal year 2017 was $907 thousand, a decrease of approximately $(126) thousand over the fiscal year 2016 amount of $1.0 million.
- Total deductions for fiscal year 2017 were $82.9 million, an increase of $2.9 million or 3.6% over fiscal year 2016. Pension benefit payments for fiscal year 2017 were $72.1 million, an increase of $3.5 million or 5.0% over fiscal year 2016. Refunds of member contributions for fiscal year 2017 were $6.2 million, a decrease of $39 thousand or -0.6% over fiscal year 2016. Administrative expenses for fiscal year 2017 were $4.7 million, which was virtually unchanged as compared to fiscal year 2016.
- The Board's funding objective is to meet long-term pension benefit obligations. As of October 1, 2017, the date of the latest actuarial valuation, the TRF's ratio of plan net position to total pension liability (at September 30, 2017) was 95.85%. In general, this means that for each dollar's worth of future pension liability, the TRF has accumulated $0.95 to meet that obligation. This ratio increased 7.6% over the prior year funded ratio of 88.27%.

MANAGEMENT'S DISCUSSION AND ANALYSIS

The Police Officers and Firefighters' Retirement Fund financial highlights for fiscal year 2017 are as follows:

- Net position restricted for pensions as of September 30, 2017 was $5.7 billion, an increase of $729.8 million or 14.7% over fiscal year 2016.
- Investment income, net of investment expenses, for fiscal year 2017 was $655.3 million, a return of 12.1%. Investment income, net of investment expenses, for fiscal year 2016 was $415.2 million, a return of 9.3%.
- Total additions for fiscal year 2017 were $836.8 million, an increase of $250.0 million over fiscal year 2016. In fiscal year 2016, there was a total increase of $636.1 million. Employer contributions for fiscal year 2017 were $145.6 million, an increase of $9.5 million or 7.0% over fiscal year 2016. Police and Firefighters' Plan member contributions for fiscal year 2017 were $33.4 million, an increase of $639.0 thousand or 1.9% over fiscal year 2016. Other income for fiscal year 2017 was $2.5 million, a decrease of $(342.0) thousand over the fiscal year 2016 amount of $2.8 million.
- Total deductions for fiscal year 2017 were $107.0 million, an increase $12.8 million or 13.6% over fiscal year 2016. Pension benefit payments for fiscal year 2017 were $92.5 million, an increase of $13.6 million or 17.3% over fiscal year 2016. Refunds of member contributions for fiscal year 2017 were $1.6 million, a decrease of $(532.0) thousand or -24.4% over fiscal year 2016. Administrative expenses for fiscal year 2017 were $12.8 million, a decrease of $(80.0) thousand or -0.6% over fiscal year 2016.
- The Board's funding objective is to meet long-term pension benefit obligations. As of October 1, 2017, the date of the latest actuarial valuation, the POFRF's ratio of plan net position to total pension liability (at September 30, 2017) was 114.67%. In general, this means that for each dollar's worth of future pension liability, the POFRF has accumulated about $1.14 to meet that obligation. This ratio increased 8.7% over the prior year ratio of 105.97%.

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.

FINANCIAL STATEMENTS

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUND
Combining Statements of Fiduciary Net Position
For the Years ended September 30, 2017 and 2016
(Dollar amounts in thousands)

	2017			2016		
	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total
Assets						
Cash and short-term investments	$ 23,675	$ 64,541	$ 88,216	$ 13,993	$ 37,487	$ 51,480
Receivables:						
Federal Government	427	1,161	1,588	777	2,107	2,884
Investment sales proceeds	13,177	36,234	49,411	1,618	4,407	6,025
Interest & dividends	663	1,824	2,487	127	344	471
Employee contributions	5,237	4,961	10,198	2,480	2,375	4,855
Total receivables	19,504	44,180	63,684	5,002	9,233	14,235
Prepaid expenses	-	-	-	3	7	10
Investments at fair value:						
Domestic equity	559,865	1,539,494	2,099,359	525,588	1,430,431	1,956,019
International equity	630,493	1,734,444	2,364,937	559,372	1,522,376	2,081,748
Fixed income	566,890	1,558,813	2,125,703	488,528	1,329,569	1,818,097
Real estate	163,980	450,906	614,886	128,811	350,569	479,380
Private equity	125,483	345,049	470,532	105,699	287,669	393,368
Total investments at fair value	2,046,711	5,628,706	7,675,417	1,807,998	4,920,614	6,728,612
Total assets	2,089,890	5,737,427	7,827,317	1,826,996	4,967,341	6,794,337
Liabilities						
Retirement benefits payable to U.S. Treasury	459	217	676	459	217	676
Accounts payable and other liabilities	866	3,379	4,245	1,377	3,751	5,128
Due to Federal Government	301	819	1,120	56	154	210
Due to District of Columbia Government	80	216	296	501	1,364	1,865
Investment commitments payable	17,585	48,354	65,939	2,654	7,224	9,878
Total liabilities	19,291	52,985	72,276	5,047	12,710	17,757
Net Position Restricted For Pensions	$ 2,070,599	$ 5,684,442	$ 7,755,041	$ 1,821,949	$ 4,954,631	$ 6,776,580

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

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUND
Combining Statements of Changes in Fiduciary Net Position
For the Years ended September 30, 2017 and 2016
(Dollar amounts in thousands)

	2017			2016		
	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total	Teachers' Retirement Fund	Police Officers and Firefighters' Retirement Fund	Total
Additions						
Contributions:						
District Government	$ 56,781	$ 145,631	$ 202,412	$ 44,469	$ 136,115	$ 180,584
Plan member	34,364	33,424	67,788	33,591	32,785	66,376
Total contributions	91,145	179,055	270,200	78,060	168,900	246,960
Investment (loss) income:						
Net (depreciation) appreciation in fair value of investments	233,210	637,888	871,098	147,820	371,288	519,108
Interest and dividends	10,724	29,335	40,059	8,245	54,220	62,465
Total gross investment (loss) income	243,934	667,223	911,157	156,065	425,508	581,573
Less:						
Investment expenses	4,380	11,913	16,293	3,803	10,351	14,154
Net investment (loss) income	239,554	655,310	894,864	152,262	415,157	567,419
Other income	907	2,468	3,375	1,033	2,810	3,843
Total (reductions) additions	331,606	836,833	1,168,439	231,355	586,867	818,222
Deductions						
Benefit payments	72,069	92,537	164,606	68,634	78,920	147,554
Retirement benefits payable to U.S. Treasury	-	-	-	459	217	676
Refunds	6,166	1,647	7,813	6,205	2,179	8,384
Administrative expenses	4,721	12,838	17,559	4,746	12,918	17,664
Total deductions	82,956	107,022	189,978	80,044	94,234	174,278
Change in Net Position	248,650	729,811	978,461	151,311	492,633	643,944
Net Position Restricted For Pensions:						
Beginning of Year	1,821,949	4,954,631	6,776,580	1,670,638	4,461,998	6,132,636
End of Year	$ 2,070,599	$ 5,684,442	$ 7,755,041	$ 1,821,949	$ 4,954,631	$ 6,776,580

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

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUNDS
Notes to the Basic Financial Statements
For the years ended September 30, 2017 and 2016

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.

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUNDS
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For the years ended September 30, 2017 and 2016

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.

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.

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NOTE 2: FUND ADMINISTRATION AND DESCRIPTION (CONTINUED)

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.

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUNDS
Notes to the Basic Financial Statements
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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.

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NOTE 2: FUND ADMINISTRATION AND DESCRIPTION (CONTINUED)

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.

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

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NOTE 2: FUND ADMINISTRATION AND DESCRIPTION (CONTINUED)

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:

TRF	**2017**	**2016**	**2015**
Retirees and survivors receiving benefits (post June 30, 1997)	3,899	3,882	3,718
Active plan members	5,199	5,141	4,866
Vested terminations	1,330	1,176	1,152
Total participants	10,428	10,199	9,736

POFRF	**2017**	**2016**	**2015**
Retirees and survivors receiving benefits (post June 30, 1997)	3,215	3,003	2,609
Active plan members	5,312	5,359	5,537
Vested terminations	340	293	319
Total participants	8,867	8,655	8,465

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NOTE 2: FUND ADMINISTRATION AND DESCRIPTION (CONTINUED)

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 2017 and 2016 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

DISTRICT OF COLUMBIA
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Notes to the Basic Financial Statements
For the years ended September 30, 2017 and 2016

NOTE 3: SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (CONTINUED)

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 $16,292,755 in 2017 and $14,154,932 in 2016. 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.

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.

GASB Statement No. 82, *An Amendment of GASB Statements No. 67, No. 68, and No. 73*, was adopted for the year ended September 30, 2017. This Statement addresses issues regarding: 1) the presentation of payroll-related measures in required supplementary information; 2) the selection of assumptions and the treatment of deviations from the guidance in an actuarial standard of practice for financial reporting purposes; and 3) the classification of payments made by employers to satisfy employee (member) contribution requirements. This statement does not impact DCRB's financial statements, notes, or required supplementary information.

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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)	**2017**	**2016**
Cash and short-term investments	$ 88,216	$ 51,480
Investments:		
Domestic equity	2,099,359	1,956,019
International equity	2,364,937	2,081,748
Fixed income	2,125,703	1,818,097
Real estate	614,886	479,380
Private equity	470,532	393,368
Total investments	7,675,417	6,728,612
Total	$ 7,763,633	$ 6,780,092

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NOTE 4: INVESTMENTS (CONTINUED)

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, 2017 and 2016, the money-weighted rates of return, as calculated by the custodian based on a month-end net flow weighting method, were as follows:

	FY 2017	FY 2016
Total Portfolio	12.785%	9.346%

Debt Instruments – As of September 30, 2017, the Investment Pool held the following debt instruments:

(Dollars in thousands)

Investment Type	Fair Value	% of Segment	Duration (years)	Rating*
US Agency	$ 20,903	0.98%	3.73	AA+
Asset Backed	13,336	0.63%	3.17	AAA
Bank Loans	123,088	5.79%	0.14	CCC+
Cash Equivalent	35,355	1.66%	0.00	A-1+
CMBS	16,739	0.79%	5.32	AA+
CMO	860	0.04%	1.40	AA+
Commingled funds	-	0.00%	-	NR
Corporate - US	285,306	13.42%	6.14	BBB
Corporate - Euro	20,126	0.95%	2.62	BBB+
Foreign	451,501	21.24%	5.68	A
Mortgage Pass-Through	218,080	10.26%	4.18	AA+
Municipal	5,084	0.24%	11.37	AA-
Options	898	0.04%		
Private Placement	117,067	5.51%	3.40	CCC+
Unclassified	-	0.00%	-	
US Treasury	817,360	38.45%	7.13	AA+
Yankee	-	0.00%	-	
Other	-	0.00%	-	
Total Fixed Income	$ 2,125,703	100.00%		

* Using quality ratings provided by Standard & Poor's

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUNDS
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NOTE 4: INVESTMENTS (CONTINUED)

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-
Total Fixed Income	$ 1,818,097	100.00%		

* Using quality ratings provided by Standard & Poor's

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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.

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NOTE 4: INVESTMENTS (CONTINUED)

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, 2017 and 2016, the Investment Pool held amounts in commingled funds which invested in foreign currencies totaling approximately $2.9 billion and $2.4 billion, respectively.

As of September 30, 2017, 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
Canadian Dollar	$ -	$ 4,479	$ -	$ -	$ 4,479
Euro	1,582	-	-	35,101	36,683
Total Foreign	$ 1,582	$ 4,479	$ -	$ 35,101	$ 41,162

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
Canadian Dollar	$ -	$ -	$ -	$ 1,258	$ 1,258
Euro	76	-	-	29,203	29,279
Swiss Franc	110	-	-	-	110
Total Foreign	$ 186	$ -	$ -	$ 30,461	$ 30,647

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NOTE 4: INVESTMENTS (CONTINUED)

***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 fiscal year 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 years 2017 and 2016.

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 2017 and 2016, 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. There were no derivatives as of September 30, 2017 or as of September 30, 2016.

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.

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NOTE 4: INVESTMENTS (CONTINUED)

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.

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 Al or Pl 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.

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NOTE 4: INVESTMENTS (CONTINUED)

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.

The District Retirement Funds may 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, 2017 or as of September 30, 2016.

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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 tables on pages 31 and 32 show 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,

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS'
RETIREMENT FUNDS
Notes to the Basic Financial Statements
For the years ended September 30, 2017 and 2016

NOTE 4: INVESTMENTS (CONTINUED)

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 tables on pages 31 and 32.

Real Assets (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 31, the unfunded commitments totaled $850.3 million, as of September 30, 2017. This represents global investments in 35 real asset (real estate) and 29 private equity funds. The unfunded commitments totaled $404.5 million, as of September 30, 2016. This represented global investments in 28 real asset (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 asset 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 3 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 6 funds, including corporate bonds, and U.S. Treasury obligations, with redemption notifications not greater than 30 days.

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUNDS
Notes to the Basic Financial Statements
For the years ended September 30, 2017 and 2016

NOTE 4: INVESTMENTS (CONTINUED)

Investments measured at Fair Value (Dollars in 000s)

	Sept 30, 2017	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Investments by fair value level				
Domestic equity	$ 278,468	$ 278,468	$ -	$ -
Fixed income	304,700	-	304,700	-
Private equity	-	-	-	-
Total investments by fair value level	$ 583,168	$ 278,468	$ 304,700	$ -

Investments measured at the net asset value (NAV)	
Domestic equity	$ 1,820,891
International equities	2,364,937
Fixed income	1,821,003
Real assets	614,886
Private equity	470,532
Total investments measured at NAV	$ 7,092,249
Total investments	$ 7,675,417

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

	Sept 30, 2017	Unfunded Commitments	Redemption Frequency	Redemption Notice Period
Domestic equities	$ 1,820,891	$ -	Daily	None
International equities	2,364,937	-	Daily	None
Fixed income	1,821,003	-	Daily, Monthly	3-30 days
Real assets	614,886	407,670	None	N/A
Private equity	470,532	442,602	None	N/A
Total investments measured at NAV	$ 7,092,249	$ 850,272		

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUNDS
Notes to the Basic Financial Statements
For the years ended September 30, 2017 and 2016

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)
Investments by fair value level				
Domestic equity	$ 264,682	$ 264,682	$ -	$ -
Fixed income	234,083	-	234,083	-
Private equity	896	896	-	-
Total investments by fair value level	$ 499,661	$ 265,578	$ 234,083	$ -

Investments measured at the net asset value (NAV)	
Domestic equity	$ 1,691,337
International equities	2,081,748
Fixed income	1,584,014
Real assets	479,380
Private equity	392,472
Total investments measured at NAV	$ 6,228,951
Total investments	$ 6,728,612

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 assets	479,380	204,735	None	N/A
Private equity	392,472	199,766	None	N/A
Total investments measured at NAV	$ 6,228,951	404,501		

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUNDS
Notes to the Basic Financial Statements
For the years ended September 30, 2017 and 2016

NOTE 5: NET PENSION LIABILITY/(ASSET)

The components of the net pension liability/(asset) of the District Retirement Funds at September 30, 2017 and 2016, were as follows:

(Dollars in thousands)	2017 TRF	2017 POFRF	2016 TRF	2016 POFRF
Total Pension Liability	$ 2,160,347	$ 4,957,340	$ 2,064,138	$ 4,675,562
Fiduciary Net Position	2,070,599	5,684,442	1,821,949	4,954,631
Net Pension Liability (Asset)	$ 89,748	$ (727,102)	$ 242,189	$ (279,069)
Ratio of Fiduciary Net Position to Total Pension Liability (Asset)	95.85%	114.67%	88.27%	105.97%

Actuarial Assumptions **-** The total pension liability was determined based on an actuarial valuation as of October 1, 2016 and 2015, 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, 2017 and 2016, 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 RPH 2014 Blue Collar Mortality Table generationally projected with Scale BB, set back 1 year for males. Post-disability mortality rates were based on the RPH-2014 Disabled Mortality Table set back 6 years for males and set forward 1 year for females.

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUNDS
Notes to the Basic Financial Statements
For the years ended September 30, 2017 and 2016

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

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 RPH 2014 Blue Collar Mortality Table generationally projected with Scale BB, set back 1 year for males.

The actuarial assumptions used in the October 1, 2016 valuation were based on the results of the most recent actuarial experience investigation for the period October 1, 2011 to September 30, 2015, dated July 18, 2017.

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.

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUNDS
Notes to the Basic Financial Statements
For the years ended September 30, 2017 and 2016

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

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, 2017 and 2016 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic Equity	20.0%	5.5%
Foreign Equity (Developed)	16.0%	5.3%
Foreign Equity (Emerging)	10.0%	7.8%
Investment Grade Bonds	11.0%	1.5%
Treasury Inflation-Protected Securities (TIPS)	6.0%	1.5%
High Yield Bonds	4.0%	4.0%
Bank Loans	3.0%	3.5%
Foreign Bonds (Developed)	2.0%	0.4%
Emerging Markets Debt (Local)	4.0%	3.9%
Real Estate	6.0%	4.9%
Natural Resources (Private)	2.0%	6.4%
Infrastructure	3.0%	5.4%
Private Equity	9.0%	7.2%
Hedge Funds	4.0%	3.3%
Total	100.0%	

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUNDS
Notes to the Basic Financial Statements
For the years ended September 30, 2017 and 2016

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 Teachers' Retirement Fund and the Police Officers and Firefighters' Retirement Fund, 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 2017	1% Decrease (5.50%)	Current Discount Rate (6.50%)	1% Increase (7.50%)
Teachers' Plan's Net Pension Liability/(Asset)	$ 442,350	$ 89,748	$ (190,869)
Police and Firefighters' Plan's Net Pension Liability/(Asset)	$ 215,463	$ (727,102)	$ (1,467,631)

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)

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.

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUNDS
Notes to the Basic Financial Statements
For the years ended September 30, 2017 and 2016

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.

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUND
Required Supplementary Information
Schedules of Changes in the Net Pension Liability and Related Ratios
(Dollar amounts in thousands)

Teachers' Retirement Fund

	Sept 30, 2017	Sept 30, 2016	Sept 30, 2015	Sept 30, 2014
Total pension liability				
Service Cost	$ 65,911	$ 61,599	$ 53,297	$ 50,409
Interest	131,657	124,370	118,378	112,204
Benefit changes		-	-	-
Difference between expected and actual experience	(37,230)	2,656	(7,246)	-
Changes of assumptions	14,106	-	-	-
Benefit payments	(72,069)	(69,093)	(64,076)	(59,832)
Refunds	(6,166)	(6,205)	(5,576)	(5,790)
Net change in total pension liability	96,209	113,327	94,777	96,991
Total pension liability - beginning	2,064,138	1,950,811	1,856,034	1,759,043
Total pension liability - ending (a)	2,160,347	2,064,138	1,950,811	1,856,034
Plan net position				
Contributions - District Government	56,781	44,469	39,513	31,636
Contributions - Plan member	34,364	33,591	31,621	28,751
Net investment (loss) income	239,554	152,262	(72,647)	132,086
Benefit payments	(72,069)	(69,093)	(64,076)	(59,832)
Administrative expense	(4,721)	(4,746)	(4,543)	(3,787)
Refunds	(6,166)	(6,205)	(5,576)	(5,790)
Other income	907	1,033	385	522
Change in net position	248,650	151,311	(75,323)	123,586
Plan net position - beginning	1,821,949	1,670,638	1,745,961	1,622,375
Plan net position - ending (b)	2,070,599	1,821,949	1,670,638	1,745,961
Net pension liability - ending (a) - (b)	$ 89,748	$ 242,189	$ 280,173	$ 110,073
Ratio of plan net position to total pension liability - (b) / (a)	95.85%	88.27%	85.64%	94.07%
Covered payroll	$ 447,762	$ 438,079	$ 417,090	$ 378,926
Net pension liability (asset) as a percentage of covered payroll	20.04%	55.28%	67.17%	29.05%

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUND
Required Supplementary Information
Schedules of Changes in the Net Pension Liability and Related Ratios
(Dollar amounts in thousands)

Police and Firefighters' Retirement Fund

	Sept 30, 2017	Sept 30, 2016	Sept 30, 2015	Sept 30, 2014
Total pension liability				
Service Cost	$ 196,629	$ 198,020	$ 192,114	$ 176,102
Interest	300,626	282,285	257,943	235,097
Benefit changes	-	-	-	-
Difference between expected and actual experience	(188,549)	(106,840)	(2,477)	-
Changes of assumptions	67,256	-	-	-
Benefit payments	(92,537)	(79,137)	(63,634)	(52,784)
Refunds	(1,647)	(2,179)	(1,396)	(1,637)
Net change in total pension liability	281,778	292,149	382,550	356,778
Total pension liability - beginning	4,675,562	4,383,413	4,000,863	3,644,085
Total pension liability - ending (a)	4,957,340	4,675,562	4,383,413	4,000,863
Plan net position				
Contributions - District Government	145,631	136,115	103,430	110,766
Contributions - Plan member	33,424	32,785	33,679	32,821
Net investment (loss) income	655,310	415,157	(187,283)	338,894
Benefit payments	(92,537)	(79,137)	(63,634)	(52,784)
Administrative expense	(12,838)	(12,918)	(11,939)	(9,730)
Refunds	(1,647)	(2,179)	(1,396)	(1,637)
Other income	2,468	2,810	1,012	1,342
Change in net position	729,811	492,633	(126,131)	419,672
Plan net position - beginning	4,954,631	4,461,998	4,588,129	4,168,457
Plan net position - ending (b)	5,684,442	4,954,631	4,461,998	4,588,129
Net pension liability (asset) - ending (a) - (b)	$ (727,102)	$ (279,069)	$ (78,585)	$ (587,266)
Ratio of plan net position to total pension liability (asset) - (b) / (a)	114.67%	105.97%	101.79%	114.68%
Covered payroll	$ 441,904	$ 438,114	$ 446,201	$ 426,135
Net pension liability (asset) as a percentage of covered payroll	-164.54%	-63.70%	-17.61%	-137.81%

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUND
Required Supplementary Information
Schedules of Employer Contributions
(Dollar amounts in thousands)

Teachers' Retirement Fund

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Actuarially determined employer contribution	$ 56,781	$ 44,469	$ 39,513	$ 31,636	$ 6,407	$ -	$ -	$ -	$ -	$ 6,000
Actual employer contributions	56,781	44,469	39,513	31,636	6,407	-	-	-	-	6,000
Annual contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Covered payroll	$ 447,762	$ 438,079	$ 417,090	$ 378,926	$ 369,071	$ 381,235	$ 384,455	$ 337,516	$ 336,600	$ 359,100
Actual contributions as a percentage of covered payroll	12.68%	10.15%	9.47%	8.35%	1.74%	0.00%	0.00%	0.00%	0.00%	1.67%

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 2017 are:

Actuarial cost method	Entry age normal
Amortization method	Level dollar, closed
Remaining amortization period	17 years
Asset valuation method	7-year smoothed market
Inflation	3.5%
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)

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUND
Required Supplementary Information
Schedules of Employer Contributions
(Dollar amounts in thousands)

Police and Firefighters' Retirement Fund

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008
Actuarially determined employer contribution	$ 145,631	$ 136,115	$ 103,430	$ 110,766	$ 96,314	$ 116,700	$ 127,200	$ 132,300	$ 106,000	$ 137,000
Actual employer contributions	145,631	136,115	103,430	110,766	96,314	116,700	127,200	132,300	106,000	137,000
Annual contribution deficiency (excess)	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Covered payroll	$ 441,904	$ 438,114	$ 446,201	$ 426,135	$ 413,380	$ 414,877	$ 421,221	$ 423,854	$ 436,100	$ 421,950
Actual contributions as a percentage of covered payroll	32.96%	31.07%	23.18%	25.99%	23.30%	28.13%	30.20%	31.21%	24.31%	32.47%

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	17 years
Asset valuation method	7-year smoothed market
Inflation	3.5%
Salary increases	4.25% 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)

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUND
Required Supplementary Information
Schedule of Investment Returns

Annual Money-Weighted Rates of Return, based on a month-end net flow weighting method, as calculated by the custodian

	FY 2017	FY 2016	FY 2015	FY 2014
Total Portfolio	12.785%	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.

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUND
Supplementary Information
Schedules of Administrative Expenses
For the years ended September 30, 2017 and 2016

	2017	2016
Personal services		
Salaries	$ 6,512,514	$ 6,180,879
Fringe benefits	1,613,022	1,318,468
Total personal services	8,125,536	7,499,347
Non-personal services		
Office supplies	107,460	99,222
Telephone	107,181	91,324
Rent	1,799,965	1,753,961
Travel	218,006	208,681
Professional fees	5,262,535	6,378,535
Postage	60,453	27,327
Printing	15,405	52,725
Insurance	148,887	150,954
Dues & memberships	41,525	41,177
Audit costs	72,120	62,500
Actuarial fees	138,164	180,000
Legal fees	590,245	337,453
Investment fees	15,037,067	12,862,522
Contractual services (STAR)	1,866,066	1,697,283
Equipment and rental	261,269	375,969
Depreciation	-	-
Total non-personal services	25,726,348	24,319,633
Total administrative expenses	33,851,884	31,818,980
Investment expenses	(16,292,755)	(14,154,932)
Net administrative expenses	$ 17,559,129	$ 17,664,048

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUND
Supplementary Information
Schedules of Investment Expenses
For the years ended September 30, 2017 and 2016

	2017	2016
Investment managers*	$ 14,360,817	$ 11,811,259
Investment administrative expense	784,973	1,051,263
Investment consultants	909,715	1,017,272
Investment custodian	237,250	275,138
Total investment expenses	$ 16,292,755	$ 14,154,932

*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.

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUND
Supplementary Information
Schedules of Payments to Consultants
For the years ended September 30, 2017 and 2016

Professional/Consultant	Nature of Service	FY 2017	FY 2016
Administrative Consultants			
Software Information Resource Corp.	Information technology consulting	$ 829,277	$ 1,731,030
U.S. Treasury Office of D.C. Pensions	Benefit payment processing	689,860	1,220,209
Mobomo, LLC	Information technology consulting	528,969	760,125
Morgan, Lewis & Bockius	Legal counsel	497,590	323,739
Ectam, LLC	Information technology consulting	238,680	236,880
KMC, Inc.	Information technology consulting	234,810	-
D.C. Office of the Chief Technology Officer	Information technology consulting	230,065	228,000
Networking for Future, Inc.	Information technology consulting	227,492	73,672
Softech & Associates, Inc.	Information technology consulting	214,000	248,000
Linea Solutions, Inc.	Business process re-engineering	192,078	-
DLT Solutions, Inc.	Information technology consulting	158,777	175,915
FireEye, Inc.	Information technology consulting	146,873	105,283
Cavanaugh Macdonald Consulting	Actuarial services	140,768	194,655
ASI Government, Inc.	Temporary staffing services	132,818	40,934
SHI International Corporation	Information technology consulting	118,795	-
D.C. Metropolitan Police Dept	Information technology consulting	113,832	-
Mark Jackson	Information technology consulting	111,563	106,630
Analytica LLC	Information technology consulting	98,055	128,338
Equinix, Inc.	Information technology consulting	87,705	94,393
Yared Desta	Information technology consulting	85,876	99,912
TW Telecom	Information technology consulting	77,832	97,658
Vonage Business formerly Icore Networks, Inc.	Information technology consulting	72,154	63,681
CliftonLarsonAllen LLC	Financial audit	72,120	62,500
Groom Law Group	Legal counsel	70,158	13,159
American Arbitration Association	Arbitration services	59,979	12,918
RSM US LLP formerly RSM McGladrey, Inc.	Financial system consulting	48,002	47,582
Capitol Document Solutions	Information technology consulting	40,486	40,239
Dakota Consulting, Inc.	Information technology consulting	40,308	-
Steven Van Rees	Operations consultant	36,038	43,650
AON Hewitt Investment Consulting	Insurance consulting	35,438	-
Avitecture	Information technology consulting	34,455	37,198
Midtown Personnel Inc.	Benefits consulting	33,885	168,261
Business Development Associates, LLC	Information technology consulting	33,197	157,541
Advent Software, Inc.	Investment consulting	33,179	20,538
DC Net	Information technology consulting	31,968	28,985
Diligent Corp	Information technology consulting	31,575	31,575
HBP, Inc.	Graphic design for publications	25,992	38,693
XO Holdings	Information technology consulting	24,699	-
Harris, Mackessy & Brennan, Inc.	Information technology consulting	21,098	-
CEM Benchmarking, Inc.	Investment consultant	20,000	30,000
Kofax, Inc.	Information technology consulting	18,752	16,562
eVestment Alliance	Online Investment service	18,720	22,932
Clayton Gordon	Information technology intern	18,053	3,325
Project Made Easy	Information technology consulting	16,784	17,400
ZixCorp Systems, Inc.	Information technology consulting	16,575	16,575
Syed-Mohd Nasib Hafeez	Information technology consulting	14,450	2,656
The Newberry Group, Inc.	Information technology consulting	11,993	5,451
National Associates, Inc.	Benefits consulting	9,820	61,130
Korn Ferry Hay Group, Inc.	Professional services	7,250	-
Dylan Meagher	Benefits intern	7,054	-
Intuitive Technology Group, LLC	Information technology consulting	5,608	118,724
Adil Naghmi	Benefits intern	5,590	-
Newlin LLC	Accting & internal audit consulting	5,537	39,071

DISTRICT OF COLUMBIA
TEACHERS' AND POLICE OFFICERS AND FIREFIGHTERS' RETIREMENT FUND
Supplementary Information
Schedules of Payments to Consultants
For the years ended September 30, 2017 and 2016

Professional/Consultant	Nature of Service	FY 2017	FY 2016
Administrative Consultants			
Fahmida Chowdhury	Information technology consulting	5,382	-
William Harris	Information technology consulting	4,820	2,223
22nd Century Staffing, Inc.	Information technology consulting	4,648	-
Info-Tech Research Group, Inc.	Information technology consulting	4,225	-
Oquendo Computer Services	Professional services	3,570	-
Corporate Investigations, Inc.	Professional services	2,912	8,468
Neal R. Gross & Co, Inc.	Professional services	916	-
Carlson Dettmann LLC	Professional services	607	2,450
Nexia Friedman LLP	Professional services	600	-
Armstrong Teasdale	Legal counsel	315	555
Managed Frameworks, LLC	Information technology consulting	-	179,057
D.C. Department of Human Resources	Information technology consulting	-	136,607
Gartner, Inc.	Information technology consulting	-	116,898
IT-CNP, Inc..	Information technology consulting	-	94,802
Katharine A. Schultz	Executive consultant	-	45,072
Sebastian Podesta	Professional services	-	18,893
InfoLock Technologies	Information technology consulting	-	10,090
Human Resources Technologies, Inc.	Information technology consulting	-	7,958
Tecknomic LLC	Information technology consulting	-	7,316
Exemplis LLC	Professional services	-	6,117
Shaquja Clark	Executive consultant	-	3,736
ImageTag, Inc.	Information technology consulting	-	3,000
RaeShawn White	Benefits intern	-	1,356
Brea Grisham	Benefits intern	-	1,002
John Siegmund	Investment intern	-	894
Total administrative consultants		**6,104,627**	**7,612,213**
Investment Consulting			
CEM Benchmarking	Investment consultant	$ 30,000	$ -
Cliffwater, LLC	Traditional investment consulting	-	525,006
Meketa Investment Group	Traditional investment consulting	620,000	403,334
Insightful Pension Consulting Group, LLC	Investment consultant	233,465	53,932
Zeno Consulting Group, LLC	Traditional investment consulting	26,250	35,000
Total investment consultants		**909,715**	**1,017,272**
Total payments to consultants		**$ 7,014,342**	**$ 8,629,485**

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DISTRICT OF COLUMBIA RETIREMENT BOARD

MOTION:

TO APPROVE THE FY 2017 AUDIT AND PRELIMINARY AUDITED ANNUAL FINANCIAL STATEMENTS.

PRESENTED TO THE BOARD ON JANAURY 18, 2018

DC Retirement Board Conference Listing as of January 17, 2018					
Sponsor	**Name of Conference**	**Date**	**Location**	**Cost**	**Description**
National Conference on Public Employee Retirement Systems (NCPERS)	NCPERS Washington Legislative Update	January 28-30, 2018	Washington, DC	Before 01/07/2017 $400 After $500	Attending this conference is the perfect opportunity to engage with members of Congress, regulatory officials and key policy makers on current legislative and regulatory activities impacting the pension industry.
International Foundation of Employee Benefit Plans (IFEBP)	IFEBP's Trustees and Administrators Institute	February 12-14, 2018	Lake Buena Vista, FL	Registration thru 01/02/2018 $1,485	Offered to advanced Trustees and Administrators designed to keep trustees informed on the latest industry trends, legal, and regulatory changes and best practices. The conference will provide information to get a deeper understanding of pension, health and welfare funds.
	IFEBP's Washington Legislative Update	May 21-22, 2018	Washington, DC	Registration thru 04/09/2018 $1,225 and after $1,525	Access a direct pipeline to what's happening on the Hill and in key agencies. Prepare for the future and learn how your plans may be impacted by the new administration as well as recently enacted and proposed legislation and regulations. Network with peers facing similar challenges and take away creative ideas and solutions that work. The content of this program is designed for trustees, administrators and plan professionals in the following areas: •Those whose roles require a keen knowledge of legislative and governmental activity •Employee benefit representatives who are responsible for strategic change •Others serving multiemployer, single employer and public sector benefit plans.
	IFEBP's Certificate of Achievement in Public Plan Policy (CAPPP) Part I and II	June 12-15, 2018	Chicago, IL	Registration thru 05/03/2018 $2,250 and after $2,850	Designed to help enhance your understanding of the fundamental areas of public sector benefit plans by earning your Certificate and Achievement in Public Plan Policy (CAPPP). Ideal for new trustees to address core concepts and current trends in legal, legislative, plan design and fiduciary aspects of public sector benefit plans. This is a exam-based program.
	IFEBP's Public Employee Benefits Institute	June 25-27, 2018	Las Vegas, NV	Registration thru 05/14/2018 $1,485 and after $1,785	The conference is designed for public sector trustees, administrators, and staff who work with health and welfare or pension plans. Learn the latest information about benefits, network work with peers developing ideas and workable solutions to implement.
National Association of State Retirement Administrators (NASRA)	2018 NASRA Annual Conference	August 4-8, 2018	San Diego, CA	Registration thru 06/03/2018 $1,100 and after $1,200	The conference features leaders in the fields of retirement plan investment and administration covering a variety of subjects including investment management, world events applicable to the pension industry, the economy, human resources, trends, and more.

DISTRICT OF COLUMBIA RETIREMENT BOARD
Training & Travel Report
As of
January 17, 2018

Name	Description	Sponsor/Vendor	Location	Dates From	Dates To
Trustees					
No Trustee Travel					
Staff					
Patrick Sahm	Due Diligence	Bernhard Capital Partners II (BCP II)	Baton Rouge, LA	12/12/17	12/13/17
Michael Xanthopoulos	Due Diligence	BCP II	Baton Rouge, LA	12/12/17	12/13/17