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**Report on the Actuarial Valuations of the
District of Columbia
Retirement Board**

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

Prepared as of October 1, 2015





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

December 17, 2015

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

Dear Trustees:

We are pleased to submit the results of the annual actuarial valuations of the District of Columbia Retirement Board Teachers' Retirement Plan and Police Officers' & Firefighters' Retirement Plan, prepared as of October 1, 2015.

The purpose of this report is to provide a summary of the funded status of each Plan as of October 1, 2015, and to recommend rates of contribution to be paid by the District in the 2017 fiscal year. The information needed for this Plan under the new Governmental Accounting Standards Board Statement No. 67 was provided in a separate report. However, for informational purposes only, we have also provided accounting information under GASB 25 and 27 in Section VII of the report. While not verifying the data at source, the actuary performed tests for consistency and reasonability.

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

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

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

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December 17, 2015
The Board of Trustees
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The funding policy not only states the overall funding goals and benchmarks for the Plan, but sets the methods and assumptions. The level dollar amortization period was set to 20 years in 2012 and will decline one year each year until a funded ratio of 100 percent is reached. Therefore, the amortization period this year is 17 years.

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

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

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

Respectfully submitted,

A handwritten signature in blue ink that reads "Edward J. Koebel".

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

A handwritten signature in blue ink that reads "Jonathan T. Craven".

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

EJK/JTC:kc



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SECTION II – 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, 2015	October 1, 2014
Number of Active Members	4,866	4,499
Annual Covered Payroll	\$417,090	\$378,926
Number of Retired Members and Survivors	3,718	3,601
Annual Retirement Benefits	\$62,899	\$58,687
Assets:		
Actuarial Value	\$1,732,017	\$1,638,583
Market Value	\$1,670,976	\$1,746,030
Liabilities:		
Actuarial Accrued Liability	\$1,953,305	\$1,849,230
Unfunded Actuarial Accrued Liability (UAAL)	\$221,288	\$210,647
Funding Ratios:		
Based on Actuarial Value	88.67%	88.61 %
Based on Market Value	85.55%	94.42 %
Amortization Period:	17 years	18 years
CONTRIBUTION FOR FISCAL YEAR ENDING	09/30/2017	09/30/2016
Employer Normal Cost Rate*	7.24%	6.63%
Amortization of UAAL Rate	4.93	5.00
Actuarially Determined Contribution Rate (ADC)	12.17%	11.63%
Estimated Fiscal Year End Covered Payroll	\$434,816	\$395,031
Fiscal Year District Payment before 1-907.02(c)	\$52,917	\$45,942
Shortfall/(Overpayment)	3,864	(1,473)
Fiscal Year District Payment	\$56,781	\$44,469

*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, 2015	October 1, 2014
Total Number of Active Members	3,829	3,902
Total Annual Covered Payroll	\$307,373	\$305,765
Number of Retired Members and Survivors	1,923	1,707
Annual Retirement Benefits	\$50,412	\$40,271
Total Assets:		
Actuarial Value	\$3,283,847	\$3,061,936
Market Value	\$3,177,374	\$3,272,733
Liabilities:		
Actuarial Accrued Liability	\$2,951,895	\$2,750,014
Unfunded Actuarial Accrued Liability (UAAL)	(\$331,952)	(\$311,922)
Funding Ratios:		
Based on Actuarial Value	111.25%	111.34 %
Based on Market Value	107.64%	119.01 %
Amortization Period:	17 years	18 years
CONTRIBUTION FOR FISCAL YEAR ENDING	09/30/2017	09/30/2016
Employer Normal Cost Rate*	33.78%	33.33 %
Amortization of UAAL Rate	(10.03)	(9.18)
Actuarially Determined Contribution Rate (ADC)	23.75%	24.15 %
Estimated Fiscal Year End Covered Payroll	\$320,436	\$318,760
Fiscal Year District Payment before 1-907.02(c)	\$76,104	\$76,981
Shortfall/(Overpayment)	591	(487)
Fiscal Year District Payment	\$76,695	\$76,494

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



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

VALUATION DATE	October 1, 2015	October 1, 2014
Total Number of Active Members	1,708	1,649
Total Annual Covered Payroll	\$138,828	\$132,650
Number of Retired Members and Survivors	686	658
Annual Retirement Benefits	\$19,802	\$18,179
Total Assets:		
Actuarial Value	\$1,323,453	\$1,226,791
Market Value	\$1,284,854	\$1,315,586
Liabilities:		
Actuarial Accrued Liability	\$1,331,198	\$1,248,524
Unfunded Actuarial Accrued Liability (UAAL)	\$7,745	\$21,733
Funding Ratios:		
Based on Actuarial Value	99.42%	98.26 %
Based on Market Value	96.52%	105.37 %
Amortization Period:	17 years	18 years
CONTRIBUTION FOR FISCAL YEAR ENDING	09/30/2017	09/30/2016
Employer Normal Cost Rate*	38.59%	38.18%
Amortization of UAAL Rate	0.52	1.47
Actuarially Determined Contribution Rate (ADC)	39.11%	39.65%
Estimated Fiscal Year End Covered Payroll	\$144,728	\$138,288
Fiscal Year District Payment before 1-907.02(c)	\$56,603	\$54,831
Shortfall/(Overpayment)	12,333	4,790
Fiscal Year District Payment	\$68,936	\$59,621

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



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

VALUATION DATE	October 1, 2015	October 1, 2014
Number of Active Police Officers	3,829	3,902
Annual Covered Payroll	\$307,373	\$305,765
Number of Active Firefighters	1,708	1,649
Annual Covered Payroll	\$138,828	\$132,650
Total Number of Active Members	5,537	5,551
Total Annual Covered Payroll	\$446,201	\$438,415
Number of Retired Members and Survivors	2,609	2,365
Annual Retirement Benefits	\$70,214	\$58,450
Assets:		
Actuarial Value	\$4,607,300	\$4,288,727
Market Value	\$4,462,228	\$4,588,319
Liabilities:		
Actuarial Accrued Liability	\$4,283,093	\$3,998,537
Unfunded Actuarial Accrued Liability (UAAL)	(\$324,207)	(\$290,190)
Funding Ratios:		
Based on Actuarial Value	107.57%	107.26 %
Based on Market Value	104.18%	114.75 %
Amortization Period:	17 years	18 years
CONTRIBUTIONS FOR FISCAL YEAR ENDING	09/30/2017	09/30/2016
Employer Normal Cost Rate*	35.28%	34.80 %
Amortization of UAAL Rate	(6.75)	(5.96)
Actuarially Determined Contribution Rate (ADC)	28.53%	28.84 %
Estimated Fiscal Year End Covered Payroll	\$465,164	\$457,048
Fiscal Year District Payment before 1-907.02(c)	\$132,707	\$131,812
Shortfall/(Overpayment)	12,924	4,303
Fiscal Year District Payment	\$145,631	\$136,115

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



2. The valuation balance sheet showing the results is given in Schedule A.
3. Comments on the valuation results as of October 1, 2015 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.
5. 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 and the current active member contribution rate.

The funding policy not only states the overall funding goals and benchmarks for the Plan, but sets the methods and assumptions. The level dollar amortization period was set to 20 years in 2012 and will decline one year each year until a funded ratio of 100 percent is reached. The amortization period this year is 17 years.

6. The valuation takes into account the effect of amendments to DCRB through the valuation date. The Main Provisions of DCRB, 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. Firefighter data was adjusted to reflect the impact of pay increases due to arbitration award.
7. An actuarial audit was conducted earlier this year by Cheiron. We have incorporated most of the recommendations made in the audit report.
8. Membership and asset data was provided by DCRB 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, 2015 but for valuation purposes (e.g. age, service) all members were treated as if remaining in the System as of October 1, 2015.



SECTION III – MEMBERSHIP DATA

1. Data regarding the membership of DCRB for use as a basis of the valuation were furnished by the District Government. The following table shows the number of active members and their annual compensation as of October 1, 2015 on the basis of which the valuation was prepared.

TABLE 1

THE NUMBER AND ANNUAL COMPENSATION OF ACTIVE MEMBERS AS OF OCTOBER 1, 2015 (\$ IN THOUSANDS)

GROUP	NUMBER	COMPENSATION
Teachers	4,866	\$417,090
Police Officers	3,829	307,373
Firefighters	<u>1,708</u>	<u>138,828</u>
Total	10,403	\$863,291

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
10/01/2015	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)
10/01/2012	10,005	796,112	79,571	1.81
10/01/2011	10,308	805,676	78,160	7.35



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, 2015
(\$ IN THOUSANDS)

DISTRICT ONLY

TYPE OF RETIREMENT	GROUP			
	TEACHERS	POLICE OFFICERS	FIREFIGHTERS	TOTAL
Service:				
Number	3,489	1,291	487	5,267
Annual Benefits	\$59,783	\$36,235	\$15,613	\$111,631
Disability:				
Number	98	299	77	474
Annual Benefits	\$2,164	\$8,881	\$1,892	\$12,937
Survivors:				
Number	131	333	122	586
Annual Benefits	\$952	\$5,296	\$2,297	\$8,545
Total:				
Number	3,718	1,923	686	6,327
Annual Benefits	\$62,899	\$50,412	\$19,802	\$133,113

*In addition, there are 1,471 deferred vested participants with annual deferred benefits of \$20,043,698.



TABLE 4
THE NUMBER AND ANNUAL RETIREMENT BENEFITS
OF RETIRED MEMBERS AND SURVIVORS OF DECEASED MEMBERS
ON THE ROLL AS OF OCTOBER 1, 2015
(\$ IN THOUSANDS)

FEDERAL PLUS DISTRICT

TYPE OF RETIREMENT	GROUP			
	TEACHERS	POLICE OFFICERS	FIREFIIGHTERS	TOTAL
Service:				
Number	5,389	3,428	1,081	9,898
Annual Benefits	\$248,771	\$204,164	\$75,199	\$528,134
Disability:				
Number	331	1,067	393	1,791
Annual Benefits	\$10,297	\$46,509	\$19,574	\$76,380
Survivors:				
Number	417	1,366	519	2,302
Annual Benefits	\$8,509	\$40,236	\$15,851	\$64,596
Total:				
Number	6,137	5,861	1,993	13,991
Annual Benefits	\$267,577	\$290,909	\$110,624	\$669,110

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 IV - ASSETS

- 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, 2015, 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, 2015 AND OCTOBER 1, 2014
(\$ IN THOUSANDS)

FUND	OCTOBER 1, 2015 MARKET VALUE	OCTOBER 1, 2014 MARKET VALUE
Teachers	\$1,670,976	\$1,746,030
Police Officers and Firefighters	<u>4,462,228</u>	<u>4,588,319</u>
Total Market Value of Assets	\$6,133,204	\$6,334,349

- The seven-year market related actuarial value of assets used for the current valuation was \$6,339,317,755. Schedule B shows the development of the actuarial value of assets as of October 1, 2015. The following table shows the actuarial value of assets allocated among each plan.

TABLE 6
COMPARISON OF ACTUARIAL VALUE OF ASSETS AT
OCTOBER 1, 2015 AND OCTOBER 1, 2014
(\$ IN THOUSANDS)

FUND	OCTOBER 1, 2015 ACTUARIAL VALUE	OCTOBER 1, 2014 ACTUARIAL VALUE
Teachers	\$1,732,017	\$1,638,583
Police Officers and Firefighters	<u>4,607,300</u>	<u>4,288,727</u>
Total Actuarial Value of Assets	\$6,339,317	\$5,927,310



SECTION V - 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 \$2,475,025,426, of which \$909,688,640 is for the prospective benefits payable on account of present retired members and survivors of deceased members, \$143,389,098 is for the prospective benefits payable on account of present inactive members, and \$1,421,947,688 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 \$1,732,017,312 as of October 1, 2015. The difference of \$743,008,114 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 13.87% of payroll are required under the entry age method. Of this amount 7.83% 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 2017 and the remaining 6.04% is payable by the District.
3. Beginning with the October 1, 2012 valuation, estimated budgeted administrative expenses are included in the normal rates. The expenses for the fiscal year ending September 30, 2017 are estimated to be 1.20% of payroll.
4. Prospective normal cost contributions (excluding administrative expenses) at the rate of 13.87% have a present value of \$521,720,519. When this amount is subtracted from \$743,008,114, which is the present value of total future contributions to be made, there remains \$221,287,595 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) increased approximately \$10.6 million for the plan year ending September 30, 2015 and the funding ratio increased slightly from 88.61% to 88.67%. This increase in the UAAL was primarily due to a larger increase in active members than was expected. In addition, there was a loss due to the investment return on an actuarial value basis for the year being less than expected. There were gains due to salary increases being less than expected that partially offset these losses. 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 \$6,575,818,825, of which \$1,302,180,880 is for the prospective benefits payable on account of present retired members and survivors of deceased members, \$86,726,916 is for the prospective benefits payable on account of present inactive members, and \$5,186,911,029 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 \$4,607,300,443 as of October 1, 2015. The difference of \$1,968,518,382 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 41.67% of payroll are required under the entry age method. Of this amount 7.59% 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 2017 and the remaining 34.08% is payable by the District.
3. Beginning with the October 1, 2012 valuation, estimated budgeted administrative expenses are included in the normal rates. The expenses for the fiscal year ending September 30, 2017 are estimated to be 1.20% of payroll.
4. Prospective normal cost contributions (excluding administrative expenses) at the rate of 41.67% have a present value of \$2,292,724,853. When this amount is subtracted from \$1,968,518,382, which is the present value of total future contributions to be made, there remains (\$324,206,471) 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 \$34.0 million for the plan year ending September 30, 2015 and the funding ratio increased slightly from 107.26% to 107.57%. This decrease in the UAAL was primarily due to smaller pay increases than expected for active members. There was a loss due to the investment return on an actuarial value basis for the year being less than expected and other losses due to mortality and retirements that partially offset the gain from pay increases. See Schedule H for a complete breakdown of the experience of the Plan.



SECTION VI - §1-907.02(c) ADJUSTMENT TO FISCAL YEAR 2017 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 2017 District payment is calculated by taking the actual fiscal year 2015 covered payroll for each employee class (which is provided by the District) and multiplying by the corresponding fiscal year 2015 contribution rates, which were determined as of October 1, 2013. This result is the fiscal year 2015 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, 2015
(\$ IN THOUSANDS)**

	Teachers	Police	Fire
(1) Actual FY 2015 Covered Payroll	\$417,090	\$307,373	\$138,828
(2) FY 2015 Contribution Rate	10.40%	22.76%	33.42%
(3) Actual FY 2015 Contribution Required	\$43,377	\$69,958	\$46,396
(4) Actual FY 2015 Contribution Paid	\$39,513	\$69,367	\$34,063
(5) Preliminary D.C. Code §1-907.02(c) Adjustment to FY 2017 Payment [(3) - (4)]	\$3,864	\$591	\$12,333
(6) FY 2016 Unrecognized Amount	\$0	\$0	\$0
(7) Final D.C. Code §1-907.02(c) Adjustment to FY 2017 Payment [(5) + (6) if applicable]	\$3,864	\$591	\$12,333
(8) Applicable Adjustment	\$3,864	\$591	\$12,333
(9) Carryover Adjustment [(7) - (8)]	\$0	\$0	\$0



SECTION VII – CONTRIBUTIONS PAYABLE

1. The following tables summarize the employer contribution rates, which were determined by the October 1, 2015 valuation and recommended for use for the fiscal year ending September 30, 2017.

**TEACHERS' RETIREMENT PLAN
ACTUARIAL DETERMINED CONTRIBUTIONS (ADC)
FOR FISCAL YEAR ENDING SEPTEMBER 30, 2017**

	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION	EMPLOYER ACTUARIAL DETERMINED CONTRIBUTION (ADC)
Normal Cost	6.04%	\$26,263,000
Expense Load	1.20	5,218,000
Accrued Liability	<u>4.93</u>	<u>21,436,000</u>
Sub-Total	12.17%	\$52,917,000
DC Code Adjustment		<u>3,864,000</u>
Total		\$56,781,000

**POLICE OFFICERS' AND FIREFIGHTERS' RETIREMENT PLAN
ACTUARIAL DETERMINED CONTRIBUTIONS (ADC)
FOR FISCAL YEAR ENDING SEPTEMBER 30, 2017**

	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION	EMPLOYER ACTUARIAL DETERMINED CONTRIBUTION (ADC)
Normal Cost	34.08%	\$158,512,000
Expense Load	1.20	5,582,000
Accrued Liability	<u>(6.75)</u>	<u>(31,387,000)</u>
Sub-Total	28.53%	\$132,707,000
DC Code Adjustment		<u>12,924,000</u>
Total		\$145,631,000



SECTION VIII - ACCOUNTING INFORMATION

1. Governmental Accounting Standards Board 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, 2015**

GROUP	RETIREMENT PLAN			
	Teachers	Police Officers	Firefighters	Total
Retirees and survivors currently receiving benefits	3,718	1,923	686	6,327
Terminated employees entitled to benefits but not yet receiving benefits	1,152	222	97	1,471
Inactive Members	1,616	82	39	1,737
Active Members				
Vested	2,374	3,003	1,499	6,876
Non-vested	<u>2,492</u>	<u>826</u>	<u>209</u>	<u>3,527</u>
Total Active Members	4,866	3,829	1,708	10,403
Totals	11,352	6,056	2,530	19,938



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 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						
10/1/2011	\$1,573,654	\$1,544,864	(\$28,790)	101.9 %	\$384,455	(7.5)%
10/1/2012	1,585,626	1,680,548	94,922	94.4 %	381,235	24.9 %
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 %
POLICE OFFICERS' AND FIREFIGHTERS' RETIREMENT PLAN						
10/1/2011	\$3,593,716	\$3,309,825	(\$283,891)	108.6 %	\$421,221	(67.4)%
10/1/2012	3,804,853	3,456,976	(347,877)	110.1 %	414,877	(83.9)%
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)%
TOTAL						
10/1/2011	\$5,167,370	\$4,854,689	(\$312,681)	106.4 %	\$805,676	(38.8)%
10/1/2012	5,390,479	5,137,524	(252,955)	104.9 %	796,112	(31.8)%
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	(102,919)	101.7 %	863,291	(11.9)%



3. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at October 1, 2015.

	Teachers	Police Officers & Firefighters
Valuation Date	10/1/2015	10/1/2015
Actuarial cost method	Entry Age Normal	Entry Age Normal
Amortization method	Level Dollar Closed	Level Dollar Closed
Remaining amortization period	17 years	17 years
Asset valuation method	7 year smoothed Market	7 year smoothed Market
Actuarial assumptions:		
Investment rate of return*	6.50%	6.50%
Projected salary increases**	4.45 – 8.25%	4.25 – 9.25%
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 IX – 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, 2015 is shown below.

Teachers' Retirement Plan

		<u>\$ Thousands</u>
(1)	UAAL* as of October 1, 2014	\$ 210,647
(2)	Total normal cost from last valuation	54,591
(3)	Total actual contributions	71,134
(4)	Interest accrual: $[(1) + (2)] \times .065 - [(3) \times .0325]$	14,929
(5)	Expected UAAL before changes: (1) + (2) – (3) + (4)	\$ 209,033
(6)	Change due to actuarial audit	3,850
(7)	Change due to actuarial assumptions or methods	0
(8)	Expected UAAL after changes: (5) + (6) + (7)	\$ 212,883
(9)	Actual UAAL as of October 1, 2015	\$ 221,288
(10)	Gain/(loss): (8) – (9)	\$ (8,405)
(11)	Gain/(loss) as percent of actuarial accrued liabilities at start of year (\$1,849,231)	(0.5)%

*Unfunded actuarial accrued liability.

Valuation Date September 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2013	(2.2)%
2014	(2.3)
2015	(0.5)



Police Officers' and Firefighters' Retirement Plan

		<u>\$ Thousands</u>
(1)	UAAL* as of October 1, 2014	\$ (290,190)
(2)	Total normal cost from last valuation	185,650
(3)	Total actual contributions	137,109
(4)	Interest accrual: $[(1) + (2)] \times .065 - [(3) \times .0325]$	<u>(11,251)</u>
(5)	Expected UAAL before changes: (1) + (2) – (3) + (4)	\$ (252,900)
(6)	Change due to actuarial audit	4,825
(7)	Change due to actuarial assumptions or methods	<u>0</u>
(8)	Expected UAAL after changes: (5) + (6) + (7)	\$ (248,075)
(9)	Actual UAAL as of October 1, 2015	\$ (324,206)
(10)	Gain/(loss): (8) – (9)	\$ 76,131
(11)	Gain/(loss) as percent of actuarial accrued liabilities at start of year (\$3,998,537)	1.9%

*Unfunded actuarial accrued liability.

Valuation Date September 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2013	1.4%
2014	(2.2)
2015	1.9



SCHEDULE A

**VALUATION BALANCE SHEET
SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF
THE DISTRICT OF COLUMBIA RETIREMENT BOARD
AS OF OCTOBER 1, 2015**

TEACHERS' RETIREMENT PLAN

PRESENT AND PROSPECTIVE ASSETS		
Actuarial Value of Present Assets		1,732,017,312
Present value of future members' contributions		262,198,187
Present value of future employer contributions		
Normal contributions	\$259,522,332	
Unfunded accrued liability contributions	<u>221,287,595</u>	
Total prospective employer contributions		<u>480,809,927</u>
Total Present and Prospective Assets		<u>\$2,475,025,426</u>
ACTUARIAL LIABILITIES		
Present value of benefits payable on account of retired members and survivors of deceased members now drawing retirement benefits		\$909,688,640
Present value of prospective benefits payable on account of inactive members		143,389,098
Present value of prospective benefits payable on account of present active members:		
Service retirement benefits	\$1,223,594,917	
Disability retirement benefits	40,624,447	
Survivor benefits	26,638,396	
Separation benefits	<u>131,089,928</u>	
Total		<u>1,421,947,688</u>
Total Actuarial Liabilities		<u>\$2,475,025,426</u>



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, 2015**

POLICE OFFICERS' & FIREFIGHTERS' RETIREMENT PLAN

PRESENT AND PROSPECTIVE ASSETS		
Actuarial Value of Present Assets		4,607,300,443
Present value of future members' contributions		380,935,415
Present value of future employer contributions		
Normal contributions	\$1,911,789,438	
Unfunded accrued liability contributions	<u>(324,206,471)</u>	
Total prospective employer contributions		<u>1,587,582,967</u>
Total Present and Prospective Assets		<u>\$6,575,818,825</u>
ACTUARIAL LIABILITIES		
Present value of benefits payable on account of retired members and survivors of deceased members now drawing retirement benefits		\$1,302,180,880
Present value of prospective benefits payable on account of inactive members		86,726,916
Present value of prospective benefits payable on account of present active members:		
Service retirement benefits	\$4,719,876,664	
Disability retirement benefits	307,896,395	
Survivor benefits	86,277,849	
Separation benefits	<u>72,860,121</u>	
Total		<u>5,186,911,029</u>
Total Actuarial Liabilities		<u>\$6,575,818,825</u>



SCHEDULE A

(continued)

**SOLVENCY TEST
(\$ IN THOUSANDS)**

Valuation Date	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Reported Asset		
	(1) Active Member Contributions	(2) Retirees, Survivors and Inactive Members	(3) Active Members (Employer Financed Portion)	Reported Assets	(1)	(2)	(3)
TEACHERS' RETIREMENT PLAN							
10/1/2011	\$138,874	\$718,884	\$687,107	\$1,340,725	100%	100.0%	70.3%
10/1/2012	137,698	819,842	723,008	1,503,346	100%	100.0%	75.5%
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%
POLICE OFFICERS' AND FIREFIGHTERS' RETIREMENT PLAN							
10/1/2011	\$224,928	\$708,364	\$2,376,533	\$3,127,496	100%	100.0%	92.3%
10/1/2012	235,924	849,982	2,371,070	3,681,526	100%	100.0%	100.0%
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%



SCHEDULE B

**DEVELOPMENT OF THE OCTOBER 1, 2015
ACTUARIAL VALUE OF ASSETS**

TEACHERS' RETIREMENT PLAN

(1)	Actuarial Value Beginning of Year*	\$	1,638,583,095
(2)	Market Value End of Year	\$	1,670,976,000
(3)	Market Value Beginning of Year	\$	1,746,030,000
(4)	Cash Flow		
a.	Contributions	\$	71,134,000
b.	Benefit Payments, Refunds, and Transfers		(69,653,000)
c.	Administrative Expenses		(4,513,000)
d.	Net Cash Flow: [(4)a + (4)b + (4)c]	\$	(3,032,000)
(5)	Investment Income		
a.	Market total: (2) – (3) – (4)d	\$	(72,022,000)
b.	Assumed Rate		6.50%
c.	Amount of Immediate Recognition	\$	113,393,410
d.	Amount for Phased-in Recognition: (5)a – (5)c	\$	(185,415,410)
(6)	Phased-In Recognition of Investment Income		
a.	Current Year: (1/7) x (5)d	\$	(26,487,916)
b.	First Prior Year		3,896,963
c.	Second Prior Year		10,404,433
d.	Third Prior Year		13,523,532
e.	Fourth Prior Year		(6,589,080)
f.	Fifth Prior Year		5,834,740
g.	Sixth Prior Year		(17,509,865)
h.	Total Recognized Investment Gain	\$	(16,927,193)
(7)	Preliminary Actuarial Value End of Year: (1) + (4)d + (5)c + (6)h	\$	1,732,017,312
(8)	Actuarial Value End of Year with 20% Corridor Applied:	\$	1,732,017,312
(9)	Present Value of DC Code Adjustment	\$	0
(10)	Final Actuarial Value End of Year: (8) + (9)	\$	1,732,017,312
(11)	Rate of Return on Actuarial Value of Assets		5.89%

*Prior to any corridor restraints.



SCHEDULE B

(Continued)

**DEVELOPMENT OF THE OCTOBER 1, 2015
ACTUARIAL VALUE OF ASSETS**

POLICE OFFICERS' & FIREFIGHTERS' RETIREMENT PLAN

(1)	Actuarial Value Beginning of Year*	\$	4,288,726,695
(2)	Market Value End of Year	\$	4,462,228,000
(3)	Market Value Beginning of Year	\$	4,588,319,000
(4)	Cash Flow		
	a. Contributions	\$	137,109,000
	b. Benefit Payments, Refunds, and Transfers		(65,029,000)
	c. Administrative Expenses		(11,859,000)
	d. Net Cash Flow: [(4)a + (4)b + (4)c]	\$	60,221,000
(5)	Investment Income		
	a. Market total: (2) – (3) – (4)d	\$	(186,312,000)
	b. Assumed Rate		6.50%
	c. Amount of Immediate Recognition	\$	300,197,918
	d. Amount for Phased-in Recognition: (5)a – (5)c	\$	(486,509,918)
(6)	Phased-In Recognition of Investment Income		
	a. Current Year: (1/7) x (5)d	\$	(69,501,417)
	b. First Prior Year		9,469,805
	c. Second Prior Year		26,331,813
	d. Third Prior Year		32,104,476
	e. Fourth Prior Year		(18,159,945)
	f. Fifth Prior Year		12,440,209
	g. Sixth Prior Year		(34,598,041)
	h. Total Recognized Investment Gain	\$	(41,913,100)
(7)	Preliminary Actuarial Value End of Year: (1) + (4)d + (5)c + (6)h	\$	4,607,232,513
(8)	Actuarial Value End of Year with 20% Corridor Applied:	\$	4,607,232,513
(9)	Present Value of DC Code Adjustment	\$	67,930
(10)	Final Actuarial Value End of Year: (8) + (9)	\$	4,607,300,443
(11)	Rate of Return on Actuarial Value of Assets		5.97%

*Prior to any corridor restraints.





SCHEDULE C

**SUMMARY OF CHANGES IN NET ASSETS
FOR THE YEAR ENDING OCTOBER 1, 2015**

TEACHERS' RETIREMENT PLAN

Additions for the Year

Contributions:

Members (including purchased service)	\$	31,621,000	
Employers		<u>39,513,000</u>	
Total	\$		71,134,000

Net Investment Income (72,022,000)

TOTAL \$ (888,000)

Deductions for the Year

Benefit Payments (including refunds and transfers)	\$	(69,653,000)	
Administrative Expenses		<u>(4,513,000)</u>	
TOTAL	\$		<u>(74,166,000)</u>

Excess of Additions Over Deductions \$ (75,054,000)

Reconciliation of Asset Balances

Market Value of Assets as of 9/30/2014	\$	1,746,030,000	
Excess of Additions over Deductions		<u>(75,054,000)</u>	
Market Value of Assets as of 9/30/2015*	\$	<u>1,670,976,000</u>	

Rate of Return on Market Value of Assets -4.13%

* 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, 2015**

POLICE OFFICERS' & FIREFIGHTERS' RETIREMENT PLAN

Additions for the Year

Contributions:		
Members (including purchased service)	\$	33,679,000
Employers		<u>103,430,000</u>
Total	\$	137,109,000
Net Investment Income		<u>(186,312,000)</u>
TOTAL	\$	(49,203,000)

Deductions for the Year

Benefit Payments (including refunds and transfers)	\$	(65,029,000)
Administrative Expenses		<u>(11,859,000)</u>
TOTAL	\$	<u>(76,888,000)</u>

Excess of Additions Over Deductions \$ (126,091,000)

Reconciliation of Asset Balances

Market Value of Assets as of 9/30/2014	\$	4,588,319,000
Excess of Additions over Deductions		<u>(126,091,000)</u>
Market Value of Assets as of 9/30/2015*	\$	<u>4,462,228,000</u>

Rate of Return on Market Value of Assets -4.03%

* 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 OCTOBER 20, 2011) (ECONOMIC ASSUMPTIONS ADOPTED ON NOVEMBER 15, 2012)

VALUATION DATE: All assets and liabilities are computed as of October 1, 2015. Demographic information was collected as of June 30, 2015.

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 seven-year period. The actuarial value of assets is constrained to an 80% to 120% corridor around market value of assets. In addition, there is an adjustment made for the effect of the adjustment pursuant to D.C. Code §1-907.02(c).

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

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

COST OF LIVING ADJUSTMENT: The cost of living as measured by the Consumer Price Index (CPI) will increase at the rate of 3.5% per year.

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

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



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:

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

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed annual rates of withdrawal, service retirement, and disability are shown in the following tables:

Sample Ages	Percent of Members Separating Within the Next Year					
	Withdrawal			Service Retirement		Disability Retirement
	0 to 3 yrs of service	4 to 9 yrs of service	10 & up yrs of service	Under 30 yrs service	30 & up yrs service	
20	25.0%	20.0%	0.00%			0.03%
25	23.5	20.0	0.00			0.03
30	22.0	16.0	3.75			0.05
35	20.5	14.0	3.75			0.07
40	19.0	12.0	3.75			0.09
45	17.5	10.0	3.75			0.15
50	16.0	10.0	3.75	2.5%	2.5%	0.22
55	14.5	10.0	3.75	6.0	33.0	0.32
60	13.0	10.0	3.75	27.0	25.0	0.40
62	0.0	0.0	0.00	25.0	25.0	
65				20.0	25.0	
70				30.0	30.0	
71				25.0	40.0	
75				100.0	100.0	

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



SCHEDULE D

(Continued)

POLICE OFFICERS

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

Pay Increase Assumptions for an Individual Member			
Years of Service	Merit & Seniority	Inflation & Productivity (Economy)	Total Increase (Next Year)
5	3.56%	4.25%	7.81%
10	2.58	4.25	6.83
15	2.31	4.25	6.56
20	2.50	4.25	6.75
25	1.10	4.25	5.35
30	0.50	4.25	4.75
35	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 (3 years of service & up) ¹				Years of Service	Service Retirement ³
	Disability Retirement ²		Males	Females		
	Males	Females				
20	6.00%	2.50%	0.02%	0.04%	20	12.5%
25	6.00	2.50	0.05	0.08	25	22.0
30	4.25	3.50	0.10	0.12	30	15.0
35	2.50	2.00	0.22	0.28	35	20.0
40	1.75	1.50	0.25	0.40	40	20.0
45	1.25	1.25	0.30	0.62		
50	1.25	1.25	0.40	0.70		
55	1.25	1.25	0.60	0.75		
60	0.00	0.00	0.80	0.90		

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

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

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

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



SCHEDULE D

(Continued)

FIREFIGHTERS

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

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

SEPARATIONS FROM ACTIVE SERVICE: Representative values of the assumed annual rates of withdrawal, service retirement, and disability are shown in the following tables:

Percent of Members Separating Within the Next Year				
Sample Ages	Withdrawal			
	(2 years of service & up) ¹	Disability Retirement ²	Years of Service	Service Retirement ³
20	3.50%	0.01%	20	12.5%
25	3.50	0.02	25	12.5
30	2.00	0.15	30	20.0
35	1.00	0.20	35	40.0
40	1.00	0.35	40	40.0
45	1.50	0.45		
50	1.50	0.52		
55	0.00	0.60		
60	0.00	0.70		

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

²It 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%.

³100% of active members are assumed to retire at age 60, regardless of service.



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

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

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



SCHEDULE E

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

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

DEFINITIONS

Affiliated Employers District of Columbia Public Schools, Public Charter Schools

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

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

Average Salary Highest 36 consecutive months of pay, divided by three.

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

CONTRIBUTIONS

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

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



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 ONLY

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

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

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

SPOUSE & DEPENDENT CHILDREN

Eligibility Death before retirement and married for at least two years, or have a child by the marriage. Children must be unmarried and under age 18, or 22 if 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 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) \$6,648* (if hired before 1/1/1980), \$6,420* (if hired between 1/1/1980 and 10/31/1996), or \$6,252* (if hired on or after 11/1/1996) per child



- c) \$19,944* (if hired before 1/1/1980), \$19,260* (if hired between 1/1/1980 and 10/31/1996), or \$18,756* (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) \$8,124* (if hired before 1/1/1980), \$7,824* (if hired between 1/1/1980 and 10/31/1996), or \$7,584* (if hired on or after 11/1/1996) per child
- f) \$24,372* (if hired before 1/1/1980), \$23,472* (if hired between 1/1/1980 and 10/31/1996), or \$22,752* (if hired on or after 11/1/1996) divided by the number of children.

PARENTS ONLY

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

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

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

*Survivor benefit amounts are as of 2014, 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 will receive 55% of the unreduced normal life annuity. Member’s benefit is reduced by 2.5% of retirement benefit, up to \$3,600, plus 10% of any retirement benefit over \$3,600.





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

Reduced benefit paid to member so that upon member's death, the spouse will receive a partial annuity that can range from \$1 up to 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 reduced by 10% plus an additional 5% for each full 5 years, up to 25 years, that the designated beneficiary is younger than the member. Maximum reduction is 40% for any beneficiary who is 25 or more years younger than the member.

COST OF LIVING ADJUSTMENTS

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. In addition, cost of living adjustments do not apply to retirement benefit payments resulting from voluntary contributions.



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 Treasury Department is responsible for paying all benefits accrued before this date.

DEFINITIONS

Affiliated Employers Metropolitan Police Department (MPD) and the Fire and EMS Department (FEMS) of the District of Columbia.

Covered Members Employees of DC Police Department and Fire Department become members on their first day of active duty. Membership is not automatic for uniformed EMT Firefighters.

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

Average Salary For members hired before February 15, 1980, the highest 12 consecutive months of pay. For members hired on or after February 15, 1980, the highest 36 consecutive months of pay, divided by 3.

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 (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), 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 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) \$3,876* (if hired before 11/1/1996) or \$3,792* (if hired on or after 11/1/1996) per child
- c) \$11,628* (if hired before 11/1/1996) or \$11,376* (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 2014, 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” section.

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

COST OF LIVING ADJUSTMENTS

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 (not beneficiaries) hired before February 15, 1980, will receive equalization pay, which is defined as the percentage increase as active employees’ salary increases.



SCHEDULE F

SCHEDULES OF MEMBER DATA

TABLE 1

**RECONCILIATION OF MEMBER DATA
AS OF OCTOBER 1, 2015**

TEACHERS' RETIREMENT PLAN

	Actives	Retirees	Disabled	Beneficiaries	Vested Terms	Total
1. Headcounts as of October 1, 2014	4,499	3,378	98	125	969	9,069
2. Change in status during the year:						
a. Death		(57)		(5)		(62)
b. Disabled						
c. Retired	(118)	155			(37)	
d. Vested Termination	(250)				250	
e. Nonvested Termination	(398)					(398)
f. Benefits Expired/Refund	(20)			(4)	(1)	(25)
3. New member due to:						
a. New Hire	1,068					1,068
b. Rehire	85				(32)	53
c. Death of Participant				15		15
d. Adjustments		13			3	16
4. Headcounts as of October 1, 2015	4,866	3,489	98	131	1,152	9,736



SCHEDULE F

SCHEDULES OF MEMBER DATA

TABLE 2

**RECONCILIATION OF MEMBER DATA
AS OF OCTOBER 1, 2015**

POLICE OFFICERS' RETIREMENT PLAN

	Actives	Retirees	Disabled	Beneficiaries	Vested Terms	Total
1. Headcounts as of October 1, 2014	3,902	1,106	279	322	173	5,782
2. Change in status during the year:						
a. Death		(5)		(3)		(8)
b. Disabled	(8)		9		(1)	
c. Retired	(162)	197			(35)	
d. Vested Termination	(94)				94	
e. Nonvested Termination	(48)					(48)
f. Benefits Expired/Refund	(25)			(16)		(41)
3. New member due to:						
a. New Hire	245					245
b. Rehire	19				(10)	9
c. Death of Participant				30		30
d. Adjustments		(7)	11		1	5
4. Headcounts as of October 1, 2015	3,829	1,291	299	333	222	5,974



SCHEDULE F

SCHEDULES OF MEMBER DATA

TABLE 3

**RECONCILIATION OF MEMBER DATA
AS OF OCTOBER 1, 2015**

FIREFIGHTERS' RETIREMENT PLAN

	Actives	Retirees	Disabled	Beneficiaries	Vested Terms	Total
1. Headcounts as of October 1, 2014	1,649	465	64	129	84	2,391
2. Change in status during the year:						
a. Death		(1)		(7)		(8)
b. Disabled	(2)		6		(4)	
c. Retired	(21)	26			(5)	
d. Vested Termination	(30)				30	
e. Nonvested Termination	(9)					(9)
f. Benefits Expired/Refund	(3)			(8)		(11)
3. New member due to:						
a. New Hire	110					110
b. Rehire	14				(9)	5
c. Death of Participant				8		8
d. Adjustments		(3)	7		1	5
4. Headcounts as of October 1, 2015	1,708	487	77	122	97	2,491



SCHEDULE F

TABLE 4

**SCHEDULE OF ACTIVE MEMBER DATA
AS OF OCTOBER 1, 2015**

TEACHERS' RETIREMENT PLAN

Attained Age	Completed Years of Service							Total	Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+		
Under 20	0	0	0	0	0	0	0	0	\$ 0
20 to 24	103	0	0	0	0	0	0	103	\$ 5,710,149
25 to 29	742	87	1	0	0	0	0	830	\$ 53,051,974
30 to 34	606	246	26	0	0	0	0	878	\$ 67,234,018
35 to 39	398	209	95	15	0	0	0	717	\$ 62,698,960
40 to 44	275	141	118	107	15	0	0	656	\$ 61,354,930
45 to 49	163	97	76	84	58	7	0	485	\$ 46,579,522
50 to 54	89	58	61	59	37	74	5	383	\$ 37,629,843
55 to 59	61	41	62	57	55	90	34	400	\$ 40,268,804
60 to 64	42	27	46	45	34	47	42	283	\$ 28,899,585
65 to 69	12	13	17	21	7	19	18	107	\$ 11,042,061
70 & Over	1	1	1	5	1	8	7	24	\$ 2,619,810
Total	2,492	920	503	393	207	245	106	4,866	\$ 417,089,656

Average Age: 40.81

Average Service: 8.22



SCHEDULE F

TABLE 5

**SCHEDULE OF ACTIVE MEMBER DATA
AS OF OCTOBER 1, 2015**

POLICE OFFICERS' RETIREMENT PLAN

Attained Age	Completed Years of Service							Total	Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+		
Under 20	0	0	0	0	0	0	0	0	\$ 0
20 to 24	108	0	0	0	0	0	0	108	\$ 6,133,596
25 to 29	424	48	2	0	0	0	0	474	\$ 28,982,053
30 to 34	200	296	93	0	0	0	0	589	\$ 40,843,465
35 to 39	58	145	232	52	0	0	0	487	\$ 36,818,293
40 to 44	24	70	159	216	90	0	0	559	\$ 46,433,736
45 to 49	5	53	98	153	193	398	0	900	\$ 82,045,339
50 to 54	5	21	42	56	82	333	12	551	\$ 51,200,837
55 to 59	1	4	8	24	21	65	15	138	\$ 12,811,107
60 to 64	1	0	5	4	0	5	8	23	\$ 2,104,521
65 to 69	0	0	0	0	0	0	0	0	\$ 0
70 & Over	0	0	0	0	0	0	0	0	\$ 0
Total	826	637	639	505	386	801	35	3,829	\$ 307,372,947

Average Age: 40.68

Average Service: 14.48



SCHEDULE F

TABLE 6

**SCHEDULE OF ACTIVE MEMBER DATA
AS OF OCTOBER 1, 2015**

FIREFIGHTERS' RETIREMENT PLAN

Attained Age	Completed Years of Service							Total	Payroll
	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30+		
Under 20	0	0	0	0	0	0	0	0	\$ 0
20 to 24	107	0	0	0	0	0	0	107	\$ 5,633,343
25 to 29	58	86	6	0	0	0	0	150	\$ 9,332,461
30 to 34	33	225	75	0	0	0	0	333	\$ 22,822,901
35 to 39	6	116	115	31	2	0	0	270	\$ 20,347,242
40 to 44	2	19	110	45	54	7	0	237	\$ 19,995,768
45 to 49	3	8	47	86	113	48	0	305	\$ 28,842,576
50 to 54	0	2	2	42	82	74	15	217	\$ 22,248,402
55 to 59	0	2	2	6	6	42	23	81	\$ 8,633,853
60 to 64	0	0	0	0	0	1	7	8	\$ 971,587
65 & Over	0	0	0	0	0	0	0	0	\$ 0
Total	209	458	357	210	257	172	45	1,708	\$ 138,828,133

Average Age: 39.61

Average Service: 14.44



SCHEDULE F

TABLE 7

**SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2015**

**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	6	\$25,250	6	\$25,250
20 to 24	0	\$0	0	\$0	1	\$2,193	1	\$2,193
25 to 29	0	\$0	0	\$0	0	\$0	0	\$0
30 to 34	0	\$0	0	\$0	1	\$12,744	1	\$12,744
35 to 39	0	\$0	0	\$0	1	\$14,220	1	\$14,220
40 to 44	0	\$0	1	\$33,072	1	\$1,630	2	\$34,702
45 to 49	3	\$102,737	1	\$24,528	2	\$13,912	6	\$141,177
50 to 54	10	\$301,918	10	\$340,656	3	\$38,784	23	\$681,358
55 to 59	107	\$3,408,280	16	\$548,376	8	\$97,498	131	\$4,054,154
60 to 64	491	\$12,679,869	18	\$448,762	19	\$155,167	528	\$13,283,798
65 to 69	1,233	\$22,354,034	40	\$659,986	36	\$215,445	1,309	\$23,229,465
70 to 74	1,099	\$14,538,273	10	\$103,104	32	\$191,751	1,141	\$14,833,128
75 to 79	417	\$4,981,068	2	\$5,177	13	\$103,393	432	\$5,089,638
80 to 84	101	\$1,097,951	0	\$0	8	\$79,660	109	\$1,177,611
85 to 89	24	\$282,131	0	\$0	0	\$0	24	\$282,131
90 to 94	4	\$37,023	0	\$0	0	\$0	4	\$37,023
95 & Over	0	\$0	0	\$0	0	\$0	0	\$0
Total	3,489	\$59,783,284	98	\$2,163,661	131	\$951,647	3,718	\$62,898,592



SCHEDULE F

TABLE 8

**SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2015**

**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	7	\$45,252	7	\$45,252
20 to 24	0	\$0	0	\$0	1	\$6,540	1	\$6,540
25 to 29	0	\$0	0	\$0	0	\$0	0	\$0
30 to 34	0	\$0	0	\$0	1	\$12,744	1	\$12,744
35 to 39	0	\$0	0	\$0	1	\$14,220	1	\$14,220
40 to 44	0	\$0	1	\$33,072	3	\$21,840	4	\$54,912
45 to 49	3	\$116,496	1	\$24,528	4	\$37,572	8	\$178,596
50 to 54	10	\$413,232	14	\$432,948	4	\$74,472	28	\$920,652
55 to 59	108	\$5,404,120	19	\$607,224	11	\$247,704	138	\$6,259,048
60 to 64	494	\$24,322,308	23	\$706,668	24	\$446,844	541	\$25,475,820
65 to 69	1,285	\$59,421,492	79	\$2,350,596	57	\$1,050,413	1,421	\$62,822,501
70 to 74	1,303	\$60,256,008	44	\$1,306,104	83	\$1,584,168	1,430	\$63,146,280
75 to 79	852	\$39,493,938	45	\$1,328,172	57	\$1,211,880	954	\$42,033,990
80 to 84	642	\$29,417,748	33	\$995,928	64	\$1,343,424	739	\$31,757,100
85 to 89	427	\$18,215,436	38	\$1,259,280	51	\$1,216,524	516	\$20,691,240
90 to 94	198	\$8,583,156	26	\$1,022,400	40	\$978,984	264	\$10,584,540
95 & Over	67	\$3,126,780	8	\$230,052	9	\$216,732	84	\$3,573,564
Total	5,389	\$248,770,714	331	\$10,296,972	417	\$8,509,313	6,137	\$267,576,999



SCHEDULE F

TABLE 9

**SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2015**

**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	40	\$319,069	40	\$319,069
20 to 24	0	\$0	0	\$0	6	\$42,786	6	\$42,786
25 to 29	0	\$0	0	\$0	0	\$0	0	\$0
30 to 34	0	\$0	6	\$191,964	1	\$27,348	7	\$219,312
35 to 39	0	\$0	6	\$277,592	2	\$83,364	8	\$360,956
40 to 44	0	\$0	31	\$1,084,992	10	\$162,650	41	\$1,247,642
45 to 49	2	\$38,416	84	\$2,972,856	28	\$577,933	114	\$3,589,205
50 to 54	330	\$14,796,836	72	\$2,537,736	31	\$670,393	433	\$18,004,965
55 to 59	351	\$11,860,797	52	\$1,206,517	55	\$807,670	458	\$13,874,984
60 to 64	359	\$6,938,713	37	\$472,044	62	\$1,039,581	458	\$8,450,338
65 to 69	200	\$2,191,163	8	\$113,870	60	\$882,024	268	\$3,187,057
70 to 74	44	\$370,264	3	\$23,652	24	\$421,646	71	\$815,562
75 to 79	5	\$38,548	0	\$0	7	\$113,053	12	\$151,601
80 to 84	0	\$0	0	\$0	6	\$126,264	6	\$126,264
85 to 89	0	\$0	0	\$0	0	\$0	0	\$0
90 to 94	0	\$0	0	\$0	1	\$22,416	1	\$22,416
95 & Over	0	\$0	0	\$0	0	\$0	0	\$0
Total	1,291	\$36,234,737	299	\$8,881,223	333	\$5,296,197	1,923	\$50,412,157



SCHEDULE F

TABLE 10

**SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2015**

**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	45	\$513,156	45	\$513,156
20 to 24	0	\$0	0	\$0	9	\$104,532	9	\$104,532
25 to 29	0	\$0	0	\$0	0	\$0	0	\$0
30 to 34	0	\$0	6	\$191,964	1	\$27,348	7	\$219,312
35 to 39	0	\$0	6	\$277,592	2	\$83,364	8	\$360,956
40 to 44	0	\$0	31	\$1,084,992	11	\$262,296	42	\$1,347,288
45 to 49	2	\$51,324	88	\$3,055,584	33	\$1,051,714	123	\$4,158,622
50 to 54	330	\$24,080,077	84	\$2,819,976	45	\$1,508,703	459	\$28,408,756
55 to 59	359	\$25,059,195	89	\$3,243,768	90	\$2,380,700	538	\$30,683,663
60 to 64	610	\$36,742,956	141	\$6,050,748	168	\$4,658,925	919	\$47,452,629
65 to 69	998	\$54,420,856	170	\$7,262,244	222	\$6,198,332	1,390	\$67,881,432
70 to 74	592	\$32,440,416	150	\$6,757,140	204	\$6,283,374	946	\$45,480,930
75 to 79	345	\$18,939,900	115	\$5,494,632	195	\$6,084,459	655	\$30,518,991
80 to 84	137	\$8,165,640	78	\$4,050,648	138	\$4,743,800	353	\$16,960,088
85 to 89	39	\$2,978,304	77	\$4,215,604	119	\$3,653,843	235	\$10,847,751
90 to 94	15	\$1,193,808	23	\$1,430,316	63	\$1,967,999	101	\$4,592,123
95 & Over	1	\$91,776	9	\$573,828	21	\$713,796	31	\$1,379,400
Total	3,428	\$204,164,252	1,067	\$46,509,036	1,366	\$40,236,341	5,861	\$290,909,629



SCHEDULE F

TABLE 11

**SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2015**

**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	24	\$244,294	24	\$244,294
20 to 24	0	\$0	0	\$0	0	\$0	0	\$0
25 to 29	0	\$0	1	\$24,828	0	\$0	1	\$24,828
30 to 34	0	\$0	4	\$105,780	2	\$4,438	6	\$110,218
35 to 39	0	\$0	6	\$182,544	0	\$0	6	\$182,544
40 to 44	0	\$0	3	\$102,084	5	\$112,306	8	\$214,390
45 to 49	0	\$0	14	\$484,386	6	\$230,114	20	\$714,500
50 to 54	50	\$2,215,863	11	\$437,436	15	\$317,130	76	\$2,970,429
55 to 59	190	\$7,712,299	10	\$205,914	15	\$331,558	215	\$8,249,771
60 to 64	152	\$4,275,017	21	\$315,682	20	\$374,970	193	\$4,965,669
65 to 69	74	\$1,211,811	6	\$32,592	18	\$307,829	98	\$1,552,232
70 to 74	20	\$182,085	1	\$298	9	\$197,284	30	\$379,667
75 to 79	1	\$15,929	0	\$0	8	\$177,159	9	\$193,088
80 to 84	0	\$0	0	\$0	0	\$0	0	\$0
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	487	\$15,613,004	77	\$1,891,544	122	\$2,297,082	686	\$19,801,630



SCHEDULE F

TABLE 12

**SCHEDULE OF RETIREE MEMBER DATA
AS OF OCTOBER 1, 2015**

**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	\$341,448	24	\$341,448
20 to 24	0	\$0	0	\$0	0	\$0	0	\$0
25 to 29	0	\$0	1	\$24,828	0	\$0	1	\$24,828
30 to 34	0	\$0	4	\$105,780	2	\$7,932	6	\$113,712
35 to 39	0	\$0	6	\$182,544	1	\$27,648	7	\$210,192
40 to 44	0	\$0	3	\$102,084	5	\$126,888	8	\$228,972
45 to 49	0	\$0	14	\$484,386	7	\$306,816	21	\$791,202
50 to 54	50	\$3,760,590	11	\$437,436	20	\$504,581	81	\$4,702,607
55 to 59	190	\$14,914,493	18	\$638,724	25	\$657,380	233	\$16,210,597
60 to 64	175	\$12,687,737	49	\$2,380,332	40	\$1,166,232	264	\$16,234,301
65 to 69	170	\$11,980,968	50	\$2,486,040	61	\$1,863,066	281	\$16,330,074
70 to 74	220	\$13,915,476	71	\$3,653,280	80	\$2,358,172	371	\$19,926,928
75 to 79	167	\$10,719,828	71	\$3,731,748	76	\$2,326,260	314	\$16,777,836
80 to 84	70	\$4,417,512	39	\$1,984,512	67	\$2,267,652	176	\$8,669,676
85 to 89	32	\$2,346,036	35	\$2,135,448	60	\$2,036,676	127	\$6,518,160
90 to 94	7	\$455,724	14	\$783,888	39	\$1,480,552	60	\$2,720,164
95 & Over	0	\$0	7	\$443,003	12	\$379,932	19	\$822,935
Total	1,081	\$75,198,364	393	\$19,574,033	519	\$15,851,235	1,993	\$110,623,632



SCHEDULE G

SCHEDULE OF RETIREES ADDED TO AND REMOVED FROM ROLLS

**DISTRICT BENEFIT ONLY
(\$ IN THOUSANDS)**

Fiscal Year Ended	Plan	Added		Removed		Increase Due to Plan Amendments	Rolls at End of Year		Percentage Increase in Annual Allowances	Average Annual Allowances
		Number	Annual Allowances	Number	Annual Allowances		Number	Annual Allowances		
September 30, 2011	Teachers	226	\$4,734	37	\$490	\$497	3,130	\$41,996	12.7%	\$13
	Police	228	\$4,291	15	\$152	\$187	1,385	\$25,572	20.4%	\$18
	Fire	98	\$2,556	7	\$86	\$18	471	\$9,958	33.3%	\$21
September 30, 2012	Teachers	204	\$4,807	49	\$594	\$1,198	3,285	\$47,407	12.9%	\$14
	Police	156	\$5,153	43	\$476	\$343	1,498	\$30,592	19.6%	\$20
	Fire	78	\$2,881	8	\$81	\$80	541	\$12,838	28.9%	\$24
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	23	\$189	-\$535	1,924	\$50,412	25.2%	\$26
	Fire	44	\$1,953	16	\$235	-\$95	686	\$19,802	8.9%	\$29



SCHEDULE G

SCHEDULE OF RETIREES ADDED TO AND REMOVED FROM ROLLS

**FEDERAL PLUS DISTRICT BENEFIT
(\$ IN THOUSANDS)**

Fiscal Year Ended	Plan	Added		Removed		Increase Due to Plan Amendments	Rolls at End of Year		Percentage Increase in Annual Allowances	Average Annual Allowances
		Number	Annual Allowances	Number	Annual Allowances		Number	Annual Allowances		
September 30, 2011	Teachers	239	\$8,626	163	\$6,168	\$4,092	6,113	\$248,104	2.7%	\$41
	Police	285	\$7,181	146	\$5,846	\$3,190	5,659	\$252,439	1.8%	\$45
	Fire	119	\$4,716	51	\$2,267	\$1,131	1,935	\$97,735	3.8%	\$51
September 30, 2012	Teachers	218	\$8,632	201	\$7,421	\$7,721	6,130	\$257,036	3.6%	\$42
	Police	218	\$11,195	174	\$6,844	\$6,412	5,703	\$263,202	4.3%	\$46
	Fire	106	\$5,780	67	\$3,087	\$2,339	1,974	\$102,767	5.1%	\$52
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



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.	(\$4.7)	(\$26.4)	(\$0.6)	(\$27.0)	(\$31.7)
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	\$0.0	\$1.3	\$2.7	\$4.0	\$4.0
Death-in Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(\$0.7)	\$1.1	\$0.4	\$1.5	\$0.8
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	\$1.5	(\$1.1)	\$0.1	(\$1.0)	\$0.5
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	\$10.2	\$80.1	\$47.3	\$127.4	\$137.6
New Members. Additional unfunded actuarial accrued liability will produce a loss.	(\$40.3)	(\$10.7)	(\$13.5)	(\$24.2)	(\$64.5)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	(\$9.9)	(\$15.8)	(\$6.6)	(\$22.4)	(\$32.3)
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	\$1.3	(\$13.1)	(\$1.5)	(\$14.6)	(\$13.3)
Other. Miscellaneous gains and losses resulting from changes in valuation software, data adjustments, timing of financial transactions, etc.	<u>\$34.2</u>	<u>\$23.8</u>	<u>\$8.6</u>	<u>\$32.4</u>	<u>\$66.6</u>
Gain (or Loss) During Year From Financial Experience	(\$8.4)	\$39.2	\$36.9	\$76.1	\$67.7
Non-Recurring Items. Adjustments for plan amendments, assumption changes, method changes or audit changes.	<u>(\$3.8)</u>	<u>(\$2.0)</u>	<u>(\$2.8)</u>	<u>(\$4.8)</u>	<u>(\$8.6)</u>
Composite Gain (or Loss) During Year	<u>(\$12.2)</u>	<u>\$37.2</u>	<u>\$34.1</u>	<u>\$71.3</u>	<u>\$59.1</u>