United States Department of the Treasury
District of Columbia Pensions Program

Actuarial Analysis and Review as of October 1, 2015

Date of Report: **November 23, 2015**

Prepared By: **Bolton Partners, Inc.**
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BOLTON PARTNERS

November 23, 2015

Paul Cicchetti
Department of the Treasury
Departmental Offices
Office of DC Pensions
1500 Pennsylvania Avenue, NW
Washington, DC 20220

RE*: 2015 Actuarial Valuation*

Dear Mr. Cicchetti:

This report sets forth the actuarial valuation of the United States Department of the Treasury District of Columbia Pensions Program as of October 1, 2015.

The Executive Summary contains our key findings and the contribution calculations for FY16.

The Appendix contains our formal actuarial certification.

Please call if you have any questions.

Respectfully submitted,

BOLTON PARTNERS, INC.

Colin England

Colin England, FSA, EA

Thomas Lowman, FSA, EA

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Table of Contents

1. Executive Summary ... 1
Background/Key Issues ... 1
FY15 Contributions ... 1
Experience Analysis ... 1
Changes in Methods, Assumptions and Plan Provisions ... 3

2. Actuarial Costs ... 4
Derivation of Liabilities and Unfunded Liability ... 4
Plan Cost Amortization Schedules ... 5
Actuarial (Gain)/Loss ... 7

3. Valuation Assets ... 9
Statement of Changes in Plan Net Assets ... 9

4. Valuation Data ... 10
Participant Data ... 10
Participant Counts ... 11
Participant Reconciliation ... 13
Active Age/Service Distributions including Compensation ... 16
Inactive Judges ... 20
Inactive Teachers ... 22
Inactive Police Officers ... 24
Inactive Firefighters ... 26

5. Summary of Principal Plan Provisions ... 28
Judges' Retirement Plan ... 28
Teachers' Retirement Plan ... 31
Police Officers and Firefighters' Retirement Plan ... 37

6. Valuation Assumptions and Methods ... 43
Actuarial Funding Method ... 43
Use of Individual Entry Age Normal Funding Method ... 43
Use of Spot Rates ... 44
Interest Rates Used for Projections ... 45
Treatment of Interest Rates Changes on Amortization Base Balances ... 45
RP 2014/MP 2014 ... 45
Open Group Projections ... 45
Demographic Assumptions ... 45
Economic Assumptions ... 53
Prior Year Assumptions ... 55

7. Benefit Payments and Funding Projections ... 56
Benefit Payment Projections – Judges ... 56
Benefit Payment Projections – Police Officers, Firefighters, and Teachers ... 58
District Benefit Payments ... 59
15-Year Fund Projections ... 60

8. Glossary ... 62

APPENDIX ... 65
Actuarial Certification ... 65

1. Executive Summary

Background/Key Issues

This Report presents the results of the October 1, 2015 actuarial review and analysis of the D.C. Police Officers and Firefighters' Retirement Plan and the D.C. Teachers' Retirement Plan, as administered by Treasury, and the D.C. Judges' Retirement Plan (collectively referred to as the Plan). The liabilities shown in this valuation only cover the Federal portion of the benefits. The purposes of this valuation are:

- To determine the appropriate contribution to the Funds to be paid by Treasury for Fiscal Year 2016;
- To review the experience of the Plan over the past year and to discuss reasons for changes in Plan costs;
- To identify and discuss any emerging trends in Plan costs.

The primary purpose of this actuarial valuation is to develop the required contribution amounts to fund benefits in the Plan. However, this report also includes certain statement line items and footnote disclosures, including the actuarial liability, necessary to compute the annual pension expense, and components thereof, in accordance with Statement of Federal Financial Accounting Standards No. 5 and No. 33 (SFFAS 5 and SFFAS 33). Use of the valuation results for other purposes may not be appropriate.

FY16 Contributions

As shown in more detail below, the contribution for FY16 (excluding expenses) and the change from last year, is as follows:

Table 1: Summary of Required Contributions Contribution Date	Judicial Retirement Fund Government Contribution (excluding expenses)	D.C. Federal Pension Fund Government Contribution (excluding expenses)
September 30, 2015	$ 13,200,000	$ 471,300,000
September 30, 2016	$ 13,100,000	$ 445,600,000

Experience Analysis

Page 8 includes a breakdown of gains and losses between five sources. Overall the unfunded liability was increased more than expected as follows:

Source of (Gain)/Loss	Judicial Retirement Fund	D.C. Federal Pension Fund
Investment Return	$ 1,437,379	$ 9,794,158
Liability (Gain)/Loss	$ (298,220)	$ (69,831,972)
Change in Discount rate	$ 2,741,073	$ 347,279,940
Change in other economic Assumptions	$ (1,616,945)	$ (247,137,039)
Change in non-economic Assumptions	$ 0	$ 0

1. Executive Summary (cont.)

Experience Analysis (cont.)

The breakdown of the Liability (Gain)/Loss for D.C. Police Officers and Firefighters' Retirement Plan and the D.C. Teachers' Retirement Plan is shown in the table below:

Source of Liability (Gain)/Loss	D.C. Federal Pension Fund
Smaller COLAs than expected	$ (118,420,174)
(Smaller)/Larger pay raises than expected	$ 24,498,153
Loss due to new retirements	$ 14,642,110
Other[1]	$ 9,447,939
Total Liability (Gain)/Loss	**$ (69,831,972)**

The actuarial gain for the Judges' Plan is less than $300,000, or just above 0.1%, which we believe is immaterial. Because of the relatively small effect, we did not further analyze this gain.

The material changes between the revised 2014 valuation and the current valuation for the Federal Pension Fund, are the significantly lower COLAs than expected, the higher than expected pay raises and the liability loss for more new retirees than expected. These gains or losses were, however, significantly smaller than those due to the changes in economic assumptions.

The reduction in the investment return assumption also significantly increased the present value of the remaining payments on previous amortization bases. This resulted in a $157.2 million reduction in the amount of the unamortized unfunded actuarial liability from prior bases, since the payment amounts are fixed. This "gain" is combined with the net loss due to the assumption changes of $100.1 million. The result is that the "gain" due to this effect offsets the amount of the actuarial loss due to the changes in economic assumptions. Thus, while there is an actuarial loss due to the change in economic assumptions, the amount being amortized is effectively a gain and actually reduces the annual contribution amount (see pages 6 and 45 for more details.)

Some revisions were made to the beginning of year actuarial accrued liability (used in calculating the Liability (Gain)/Loss) for the D.C. Police Officers and Firefighters' Retirement Plan. These revisions are noted on page 7 and the amounts are shown in the table below:

Description of Liability Revisions	D.C. Federal Pension Fund
Revision for Child Survivors	$ (17,215,432)
Revision for Survivor Benefit Formulas	$ 18,565,535
Revision for Active Disability Formula	$ (256,734)
Data Correction for 1 Retired Police Officer	$ 126,424
Total of Liability Revisions	**$ 1,219,793**

[1] "Other" includes all gains and losses from variations between actual and expected experience, other than those mentioned here. That includes differences in actual vs. expected experience in mortality, disability, and percent married of deceased retired police officers and firefighters.

1. Executive Summary (cont.)

Experience Analysis (cont.)

We received additional information regarding the disability status of child survivors, allowing us to apply our disability mortality assumption in valuing the life annuities that disabled child survivors receive. For the non-disabled child survivors, the calculations were revised to value a temporary annuity, ending at age 23.

We revised the benefit formulas for participants who are not currently receiving a benefit, but are assumed to receive a retirement benefit which consists of a portion of a life annuity and a portion of a survivor benefit in the future. These participants are police officers and firefighters. Prior to this revision, the portion of the survivor benefit that was assumed to be paid upon death of the participant was being slightly undervalued.

We also revised the active disability formula that applied to Tier 2 Police Officers and Firefighters (those hired on or after February 15, 1980 but before November 10, 1996) who were assumed to become disabled in the future. Finally, we received corrected data for one retired Police Officer that resulted in a small change in liability.

Changes in Methods, Assumptions and Plan Provisions

There were no changes in the Plan provisions since the prior valuation.

The key economic assumptions were changed as shown on pages 54-55. We discuss the changes in assumptions in more detail at the end of the Valuation Assumptions and Methods section. The only assumption changes reflected in this valuation report were to the economic assumptions.

Post Valuation Events

We are unaware of any significant post-valuation events which would affect the results of this valuation.

2. Actuarial Costs

Derivation of Liabilities and Unfunded Liability as of October 1, 2015

	Judges' Plan	Police Officers and Firefighters' and Teachers' Plans
Present Value of Benefits (PVB)		
Active		
Retirement	$122,400,081	$898,961,366
Termination	0	4,628,972
Disability	0	11,544,617
Death	1,560,254	3,980,650
Total	123,960,335	919,115,605
Inactive		
Retirement	127,245,642	6,254,331,777
Termination	0	61,281,362
Disability	3,017,670	807,018,154
Death	9,381,377	645,900,429
Total	139,644,689	7,768,531,722
Total PVB	263,605,024	8,687,647,327
Active Actuarial Accrued Liability (AAL)	79,727,697	919,115,605
Total AAL	219,372,386	8,687,647,327
Asset Value	150,389,400	3,959,281,704
Unfunded AAL	**$ 68,982,986**	**$ 4,728,365,623**

2. Actuarial Costs (cont.)

Plan Cost for Fiscal Year 2016

Amortization Schedule and Required Government Contribution to Judges' Plan as of September 30, 2016

Total Normal Cost		$ 5,800,000	
Employee Contributions		(600,000)	
Net Employer Normal Cost		5,200,000	
Amortization Base	**Remaining Years**	**Payment Amount**	**Remaining Balance**
Initial Unfunded Accrued Liability	12	$ 2,100,000	$ 19,869,725
Assumption Change 10/1/2000	5	(600,000)	(2,681,631)
Assumption Change 10/1/2001	6	500,000	2,633,057
Assumption Change 10/1/2004	9	200,000	1,496,599
(Gain)/Loss 10/1/2006	1	(300,000)	(288,850)
Assumption Change 10/1/2006	11	600,000	5,296,199
(Gain)/Loss 10/1/2007	2	(100,000)	(188,989)
(Gain)/Loss 10/1/2008	3	100,000	278,248
Assumption Change 10/1/2008	13	200,000	2,014,592
(Gain)/Loss 10/1/2009	4	600,000	2,185,142
Assumption Change 10/1/2009	14	(800,000)	(8,529,141)
(Gain)/Loss 10/1/2010	5	100,000	446,939
Assumption Changes 10/1/2010	15	1,500,000	16,842,037
(Gain)/Loss 10/1/2011	6	100,000	526,611
Assumption Changes 10/1/2011	16	100,000	1,177,357
(Gain)/Loss 10/1/2012	7	(400,000)	(2,413,292)
Assumption Changes 10/1/2012	17	600,000	7,379,298
(Gain)/Loss 10/1/2013	8	800,000	5,417,470
Assumption Changes 10/1/2013	18	400,000	5,121,829
Method Changes 10/1/2013	18	(1,000,000)	(12,804,574)
(Gain)/Loss 10/1/2014	9	2,900,000	21,700,683
Assumption Change 10/1/2014	19	200,000	2,658,304
(Gain)/Loss 10/1/2015	10	100,000	1,139,159
Assumption Change 10/1/2015[2]	20	0[3]	(293,786)
Total Amortization		$ 7,900,000	$ 68,982,986
Total Required Government Contribution as of September 30, 2016[4]		**$ 13,100,000**	

[2] Includes discount rate and other economic assumption changes as well as effect of discount rate change on prior amortization balances.

[3] This 20-Year Amortization Payment rounds to $0 (rounded to nearest $100,000).

[4] Before administrative expenses.

2. Actuarial Costs (cont.)

Plan Cost for Fiscal Year 2016

Amortization Schedule and Required Government Contribution to D.C. Federal Pension Fund as of September 30, 2016

(Police Officers, Firefighters and Teachers)

Amortization Base	Remaining Years	Payment Amount	Remaining Balance
Initial Unfunded Accrued Liability	12	$348,600,000	$3,465,575,366
Assumption Change 10/1/2000	5	(22,200,000)	(104,376,234)
Assumption Change 10/1/2001	6	40,100,000	222,771,448
Plan Change 10/1/2001	6	16,000,000	88,886,363
Assumption Change 10/1/2004	9	13,700,000	108,284,802
Assumption Change 10/1/2005	10	(6,300,000)	(54,283,023)
(Gain)/Loss 10/1/2006	1	20,200,000	19,897,557
Assumption Change 10/1/2006	11	39,800,000	369,932,281
(Gain)/Loss 10/1/2007	2	(8,800,000)	(17,178,176)
Assumption Change 10/1/2007	12	3,600,000	35,789,074
(Gain)/Loss 10/1/2008	3	(25,000,000)	(72,415,214)
Assumption Change 10/1/2008	13	3,300,000	34,841,314
(Gain)/Loss 10/1/2009	4	(18,500,000)	(70,564,931)
Assumption Change 10/1/2009	14	40,700,000	453,627,958
(Gain)/Loss 10/1/2010	5	(3,300,000)	(15,515,386)
Assumption Change 10/1/2010	15	10,500,000	122,918,785
(Gain)/Loss 10/1/2011	6	(16,200,000)	(89,997,443)
Assumption Change 10/1/2011	16	6,900,000	84,470,522
(Gain)/Loss 10/1/2012	7	500,000	3,187,018
Assumption Change 10/1/2012	17	32,500,000	414,498,577
(Gain)/Loss 10/1/2013	8	(9,900,000)	(70,851,663)
Assumption Change 10/1/2013	18	18,700,000	247,647,432
Funding Method Change 10/1/2013	18	(34,800,000)	(460,862,600)
(Gain)/Loss 10/1/2014	9	(6,900,000)	(54,537,601)
Assumption Change 10/1/2014	19	13,400,000	183,738,004
(Gain)/Loss 10/1/2015	10	(7,000,000)	(60,037,814)
Assumption Change 10/1/2015[5]	20	(4,000,000)	(57,080,793)
Total Amortization		$ 445,600,000	$4,728,365,623
Total Required Government Contribution as of September 30, 2016[6]		**$ 445,600,000**	

[5] Includes discount rate and other economic assumption changes as well as effect of discount rate change on prior amortization balances.
[6] Before administrative expenses.

2. Actuarial Costs (cont.)

Actuarial (Gain)/Loss from Prior Valuation in Fiscal Year 2015

		Judges' Plan		Police Officers and Firefighters' and Teachers' Plans
Assets				
Beginning of Year (before Adjustment)	$	146,500,934	$	3,975,925,878
Beginning of Year (after Adjustment)		146,936,878		3,974,743,341
Contributions				
Judges		672,678		0
Employer		14,025,000		486,410,423
Total Contributions		14,697,678		486,410,423
Benefits Paid		(14,094,454)		(541,681,969)
Expenses Paid		(824,612)		(15,175,421)
Income (including Adjustment)		4,109,855		53,802,793
Expected Income		5,547,234		63,596,952
Expected End of Year Value		151,826,779		3,969,075,862
End of Year (Projected) Value		150,389,400		3,959,281,704
Asset (Gain)/Loss	$	1,437,379	$	9,794,158
Liabilities				
Initial Beginning of Year Actuarial Accrued Liability (AAL)	$	218,416,496	$	9,046,830,573
Revisions to Initial Beginning of Year AAL[7]		0		1,219,793
Adjusted Beginning of Year AAL		218,416,496		9,048,050,366
Normal Cost				
Employees		600,000		0
Employer		5,200,000		0
Normal Cost		5,800,000		0
Benefits Paid		(14,094,454)		(541,681,969)
Interest		8,424,437		150,968,001
Expected End of Year AAL		218,546,478		8,657,336,398
Actual End of Year AAL before assumption changes		218,248,258		8,587,504,426
Liability (Gain)/Loss	$	(298,220)	$	(69,831,972)
Total Experience (Gain)/Loss	$	1,139,159	$	(60,037,814)
Impact of New Assumptions – Discount Rate		2,741,073		347,279,940
Impact of New Assumptions – Other Economic[8]		(1,616,945)		(247,137,039)
Impact of New Assumptions – Non-Economic Changes[9]		0		0
Impact of New Assumptions – Total		1,124,128		100,142,901
Actual End of Year AAL after assumption changes	$	219,372,386	$	8,687,647,327

Note: Some of the numbers in the table above are from an asset statement that shows numbers including two decimal places. The numbers shown above are each rounded and may not add due to rounding. The beginning and total asset amounts match the asset statements.

[7] Includes revisions made to child survivor calculations, survivor benefit calculations, active disability calculations & the data for 1 retired police officer.
[8] Projected Salary increases and Cost-of-Living Adjustments (COLAs).
[9] Includes changes to mortality, retirement rates, disability rates, termination rates and other assumption changes, although no changes were made this year.

2. Actuarial Costs (cont.)

Actuarial (Gain)/Loss for Fiscal Year 2015

	Judges' Plan	Police Officers and Firefighters' and Teachers' Plans
(Gains)/Losses[10]		
Actuarial Experience		
Assets	$ 1,437,379	$ 9,794,158
Liabilities	(298,220)	(69,831,972)[11]
Change in Discount Rate	2,741,073	347,279,940
Change in Other Economic Assumptions	(1,616,945)	(247,137,039)
Change in Non-Economic Assumptions	0	0
Total (Gain)/Loss	**$ 2,263,287**	**$ 40,105,087**

[10] Please note that we combined similar items on the amortization tables, as well as adjusting the last item on the amortization table for any difference in rounding of the amortization payments.

[11] Liabilities at 10/1/2015 calculated for this purpose are based on 2015 spot rates implied by the 2014 spot rate yield curve. These 2015 spot rates used for gain and loss analysis were constructed by (1) converting the 2014 spot rates to forward rates, (2) removing the forward rate for FY 2015 and (3) converting the forward rates back to spot rates. A short version of the table is shown below.

Fiscal Year	2014 Valuation Spot Rate Assumption	Forward Rate (rounded)	2015 Spot Rates used for (Gain)/Loss only
FY2015	1.72%	1.72%	N/A
FY2016	1.90%	2.08%	2.08%
FY2017	2.11%	2.53%	2.31%
FY2018	2.34%	3.03%	2.55%

Example: 2.55% adjusted FY2018 spot rate = $(1.0208 \times 1.0253 \times 1.0303)^\wedge(⅓) - 1$

3. Valuation Assets

Statement of Changes in Plan Net Assets 10/1/2014 through 9/30/2015

The following is based on the unaudited statement of September 30, 2015 assets projected as of July 31, 2015, as provided by Treasury on August 24, 2015.

	Judges' Plan	Police Officers and Firefighters' and Teachers' Plans
Projected Net Assets Available For Benefits- Beginning of Plan Year	$ 146,500,933.93	$ 3,975,925,877.70
Post Close Journal Entries	-	-
Adjusted from Estimate to Actual	435,944.27	(1,182,536.85)
Actual Net Assets Available For Benefits- Beginning of Plan Year	**$146,936,878.20**	**$3,974,743,340.85**
Additions:		
Investment Income:		
Interest	3,660,015.76	54,860,275.50
Total investment income	3,660,015.76	54,860,275.50
Contributions:		
Employees	672,677.86	-
Employing agencies	-	-
Government:		
Amortization payment	14,025,000.00	486,410,422.76
Total contributions	14,697,677.86	486,410,422.76
Miscellaneous Income	13,894.94	125,054.62
Total Additions	18,371,588.56	541,395,752.88
Deductions:		
Benefits paid to participants:		
Annuities	13,964,454.44	668,649,998.82
Less Charge-offs	-	(8,600,886.00)
Less Split Reimbursements Received from DC	-	(127,113,739.97)
Refunds of contributions	130,000.00	145,710.55
Total benefits paid to participants	14,094,454.44	533,081,083.40
Net transfer to other systems	-	-
Administrative expenses:		
Administrative expenses excluding charge-offs	824,612.26	15,175,420.80
Charge-offs	-	8,600,886.00
Total Administrative Expenses	824,612.26	23,776,306.80
Other expenses	-	-
Total Deductions	14,919,066.70	556,857,390.20
Net Additions	3,452,521.86	(15,461,637.32)
Net Assets Available For Benefits- End of Plan Year	**$150,389,400.06**	**$3,959,281,703.53**
Approximate Return (net of expenses)	2.2%	0.8%

4. Valuation Data

Participant Data

Data on active and inactive Members and their beneficiaries as of the valuation date was supplied on electronic media by the Office of DC Pensions at the Department of the Treasury (Treasury). Member data was neither verified nor audited, but was reviewed for reasonableness.

Certain assumptions were made with respect to participant data:

- Benefits for terminated members entitled to deferred benefits are estimated based on their service and pay history as available.
- Benefit Service has been determined based on elapsed time between the adjusted service date provided by Treasury and the valuation date.
- Any Police Officer, Firefighter, or Teacher members who were hired after July 1, 1997 have been excluded from the valuation.
- Any children in the data over the age of 22 were assumed to be disabled and those under age 23 were assumed not to be disabled.

Benefit tier for Police Officer, Firefighter and Teacher members was assigned based on the Date of Hire provided by Treasury.

4. Valuation Data (cont.)

Participant Counts

Judges

Active Participants	**2014**	**2015**
Number of Participating Actives	68	67
Average Age	58.3	58.7
Average Service	12.5	13.3
Average Pay	$200,538	$202,572
Number Eligible to Retire	35	35

Inactive Participants	**2014**	**2015**
Number of Retired Participants	72	71
Average Age	74.3	75.0
Average Annual Benefit	$140,037	$142,832
Number of Spouse Survivors[12]	14	15
Average Age	82.9	83.4
Average Annual Benefit	$68,207	$71,488
Number of Disabled Participants	2	1
Average Age	72.5	59.4
Average Annual Benefit	$111,458	$137,769
Number of Child Survivors	1	1
Average Age	48.4	49.4
Average Annual Benefit	$5,949	$6,050

[12] Former spouses receiving benefits under a qualified domestic relations order (QDRO) are not included in the counts.

4. Valuation Data (cont.)

Participant Counts (cont.)

Teachers, Police Officers and Firefighters

Active Participants	Teachers	Police Officers	Firefighters
Number	689	1,382	549
Average Age	57.1	49.6	49.8
Average Service	27.3	24.9	24.8
Average Pay	$101,852	$101,572	$96,676

Inactive Participants	Teachers		Police Officers		Firefighters	
Service Retired	100% Federal	Partial Federal	100% Federal	Partial Federal	100% Federal	Partial Federal
Number	1,935	3,228	2,160	1,273	604	480
Average Age	82.9	70.2	71.6	59.9	75.3	61.0
Average Federal Benefit	$43,875	$32,738	$52,231	$45,382	$60,785	$51,270
Average Total Benefit	$43,875	$49,920	$52,231	$72,713	$60,785	$81,828
Beneficiaries						
Number	301	102	1,055	129	420	44
Average Age	80.6	65.6	75.4	45.7	78.7	43.5
Average Federal Benefit	$21,966	$12,631	$30,797	$17,785	$32,256	$16,022
Average Total Benefit	$21,966	$18,464	$30,797	$26,737	$32,256	$29,370
Disabled						
Number	221	97	737	251	299	62
Average Age	79.7	64.2	73.1	53.7	75.9	57.5
Average Federal Benefit	$30,585	$15,196	$45,329	$19,010	$52,317	$28,492
Average Total Benefit	$30,585	$33,989	$45,329	$40,949	$52,317	$47,168
Terminated Vested						
Number	0	217	0	69	0	20
Average Age	0.0	56.3	0.0	50.8	0.0	50.7
Average Federal Benefit	$0	$9,707	$0	$14,152	$0	$14,064

4. Valuation Data (cont.)

Participant Reconciliation

Judges

	Actives	Vested Terminated	Disabled	Retired	Beneficiaries[13]	Total
August 1, 2014	**68**	**0**	**2**	**72**	**15**	**157**
New Entrants	-	-	-	-	-	0
Became Disabled	-	-	-	-	-	0
Retired	(1)	-	-	1	-	0
Terminated with Vested Benefits	-	-	-	-	-	0
New Beneficiaries	-	-	-	-	2	2
Died, Terminated, Withdrew funds	-	-	(1)	(2)	(1)	(4)
Data Corrections	-	-	-	-	-	0
August 1, 2015	**67**	**0**	**1**	**71**	**16**	**155**

Teachers, Police Officers and Firefighters Combined

	Actives	Vested Terminated	Disabled	Retired	Beneficiaries[14]	Total
June 1, 2014	**2,947**	**301**	**1,727**	**9,615**	**2,081**	**16,671**
New Entrants	-	-	-	-	-	-
Rehires	4	(4)	-	-	-	-
Disabilities	(4)	-	4	-	-	-
Retirements	(307)	(19)	-	326	-	-
Vested Terminations	(30)	30	-	-	-	-
New Beneficiaries	-	-	-	-	97	97
Died, Terminated, Withdrew funds	(5)	(3)	(71)	(271)	-	(350)
Transfers	-	-	-	-	-	-
Beneficiary Deaths or Child Beneficiary Term	-	-	-	-	(125)	(125)
Data Corrections	15	1	7	10	(2)	31
June 1, 2015	**2,620**	**306**	**1,667**	**9,680**	**2,051**	**16,324**

[13] Former spouses receiving benefits under a qualified domestic relations order are not included in the counts.
[14] Former spouses receiving benefits under a qualified domestic relations order are not included in the counts.

4. Valuation Data (cont.)

Participant Reconciliation (cont.)

Teachers

	Actives	Vested Terminations	Disabled	Retired	Beneficiaries	Total
June 1, 2014	**787**	**220**	**331**	**5,229**	**405**	**6,972**
New Entrants	-	-	-	-	-	-
Rehires	4	(4)	-	-	-	-
Disabilities	-	-	-	-	-	-
Retirements	(93)	(16)	-	109	-	-
Vested Terminations	(18)	18	-	-	-	-
New Beneficiaries	-	-	-	-	22	22
Died, Terminated, Withdrew funds	(5)	(2)	(18)	(185)	-	(210)
Transfers	-	-	-	-	-	-
Beneficiary Deaths or Child Beneficiary Term	-	-	-	-	(23)	(23)
Data Corrections	14	1	5	10	(1)	29
June 1, 2015	**689**	**217**	**318**	**5,163**	**403**	**6,790**

Police Officers

	Actives	Vested Terminations	Disabled	Retired	Beneficiaries	Total
June 1, 2014	**1,579**	**64**	**1,021**	**3,314**	**1,192**	**7,170**
New Entrants	-	-	-	-	-	-
Rehires	-	-	-	-	-	-
Disabilities	(2)	-	2	-	-	-
Retirements	(187)	(3)	-	190	-	-
Vested Terminations	(9)	9	-	-	-	-
New Beneficiaries	-	-	-	-	58	58
Died, Terminated, Withdrew funds	-	(1)	(36)	(71)	-	(108)
Transfers	-	-	-	-	-	-
Beneficiary Deaths or Child Beneficiary Term	-	-	-	-	(65)	(65)
Data Corrections	1	-	1	-	(1)	1
June 1, 2015	**1,382**	**69**	**988**	**3,433**	**1,184**	**7,056**

4. Valuation Data (cont.)

Participant Reconciliation (cont.)

Firefighters

	Actives	Vested Terminations	Disabled	Retired	Beneficiaries	Total
June 1, 2014	**581**	**17**	**375**	**1,072**	**484**	**2,529**
New Entrants	-	-	-	-	-	-
Rehires	-	-	-	-	-	-
Disabilities	(2)	-	2	-	-	-
Retirements	(27)	-	-	27	-	-
Vested Terminations	(3)	3	-	-	-	-
New Beneficiaries	-	-	-	-	17	17
Died, Terminated, Withdrew funds	-	-	(17)	(15)	-	(32)
Transfers	-	-	-	-	-	-
Beneficiary Deaths or Child Beneficiary Term	-	-	-	-	(37)	(37)
Data Corrections	-	-	1	-	-	1
June 1, 2015	**549**	**20**	**361**	**1,084**	**464**	**2,478**

4. Valuation Data (cont.)

Judges' Plan Counts as of August 1, 2015[15]

Service /Age	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & up	Total
0-19	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0	0	0
40-44	0	4	1	0	0	0	0	0	0	0	5
45-49	0	2	3	0	0	0	0	0	0	0	5
50-54	0	2	2	4	2	0	0	0	0	0	10
55-59	0	4	3	4	3	1	0	0	0	0	15
60-64	0	0	3	3	3	4	0	0	0	0	13
65-69	0	0	2	2	3	5	3	1	0	0	16
70+	0	0	0	2	0	0	0	0	1	0	3
Total	0	12	14	15	11	10	3	1	1	0	67

All Active Judges Average Pay by Age and Service as of August 1, 2015[16]

Service /Age	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & up	Total
0-19	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0	0	0
40-44	0	$204,150	$201,100	0	0	0	0	0	0	0	$203,540
45-49	0	201,100	201,100	0	0	0	0	0	0	0	201,100
50-54	0	207,200	201,100	$201,100	$207,200	0	0	0	0	0	203,540
55-59	0	204,150	201,100	201,100	201,100	$201,600	0	0	0	0	201,947
60-64	0	0	205,167	201,100	201,100	204,275	0	0	0	0	203,015
65-69	0	0	207,200	201,100	205,167	201,100	$201,100	$201,100	0	0	202,625
70+	0	0	0	201,100	0	0	0	0	$201,100	0	201,100
Total	0	$204,150	$202,843	$201,100	$203,318	$202,420	$201,100	$201,100	$201,100	0	$202,572

Average Age: 58.7 Average Service: 13.3

[15] Age and service calculated as of the valuation date.
[16] Age and service calculated as of the valuation date.

4. Valuation Data (cont.)

All Active Teachers by Age and Service as of June 1, 2015[17]

Service /Age	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & up	Total
0-19	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	9	17	0	0	0	0	26
45-49	0	0	0	0	12	65	10	0	0	0	87
50-54	0	0	0	0	11	36	87	8	0	0	142
55-59	0	0	0	0	4	50	94	40	9	0	197
60-64	0	0	0	0	6	32	55	26	18	15	152
65-69	0	0	0	0	4	10	21	13	3	17	68
70+	0	0	0	0	0	3	6	2	1	5	17
Total	0	0	0	0	46	213	273	89	31	37	689

All Active Teachers Average Pay by Age and Service as of June 1, 2015[18]

Service /Age	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & up	Total
0-19	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	$102,093	$103,864	0	0	0	0	$103,251
45-49	0	0	0	0	99,267	100,806	$98,683	0	0	0	100,350
50-54	0	0	0	0	98,593	101,792	101,948	$99,055	0	0	101,485
55-59	0	0	0	0	96,847	103,144	100,141	103,687	$97,130	0	101,419
60-64	0	0	0	0	99,208	101,637	103,014	103,114	102,684	$103,604	102,610
65-69	0	0	0	0	101,614	102,146	98,500	106,566	105,666	106,262	103,018
70+	0	0	0	0	0	102,115	101,204	111,033	106,540	105,263	104,029
Total	0	0	0	0	$99,644	$101,972	$101,139	$103,689	$101,484	$105,049	$101,852

Average Age: 57.1 Average Service: 27.3

[17] Age and service calculated as of the valuation date.
[18] Age and service calculated as of the valuation date.

4. Valuation Data (cont.)

All Active Police Officers Counts by Age and Service as of June 1, 2015[19]

Service /Age	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & up	Total
0-19	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	2	0	0	0	0	0	2
40-44	0	0	0	0	38	100	10	0	0	0	148
45-49	0	0	0	0	28	232	404	0	0	0	664
50-54	0	0	0	0	7	100	317	19	0	0	443
55-59	0	0	0	0	5	32	56	14	2	0	109
60-64	0	0	0	0	1	0	3	3	3	6	16
65-69	0	0	0	0	0	0	0	0	0	0	0
70+	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	81	464	790	36	5	6	1,382

All Active Police Officers Average Pay by Age and Service as of June 1, 2015[20]

Service /Age	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & up	Total
0-19	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	$89,000	0	0	0	0	0	$89,000
40-44	0	0	0	0	90,133	$98,834	$110,843	0	0	0	97,411
45-49	0	0	0	0	89,851	100,528	102,483	0	0	0	101,267
50-54	0	0	0	0	90,298	101,679	102,851	$110,689	0	0	102,725
55-59	0	0	0	0	89,538	95,432	103,889	121,530	$125,500	0	103,410
60-64	0	0	0	0	100,883	0	94,257	122,368	116,548	$109,408	109,803
65-69	0	0	0	0	0	0	0	0	0	0	0
70+	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	$90,118	$100,060	$102,805	$115,878	$120,129	$109,408	$101,572

Average Age: 49.6 Average Service: 24.9

[19] Age and service calculated as of the valuation date.
[20] Age and service calculated as of the valuation date.

4. Valuation Data (cont.)

All Active Firefighters Payroll Counts by Age and Service as of June 1, 2015[21]

Service /Age	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & up	Total
0-19	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	2	46	30	0	0	0	78
45-49	0	0	0	0	45	103	52	0	0	0	200
50-54	0	0	0	0	35	74	79	11	0	0	199
55-59	0	0	0	0	3	2	40	21	0	0	66
60-64	0	0	0	0	0	0	0	6	0	0	6
65-69	0	0	0	0	0	0	0	0	0	0	0
70+	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	85	225	201	38	0	0	549

All Active Firefighters Average Pay by Age and Service as of June 1, 2015[22]

Service /Age	Under 1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40 & up	Total
0-19	0	0	0	0	0	0	0	0	0	0	0
20-24	0	0	0	0	0	0	0	0	0	0	0
25-29	0	0	0	0	0	0	0	0	0	0	0
30-34	0	0	0	0	0	0	0	0	0	0	0
35-39	0	0	0	0	0	0	0	0	0	0	0
40-44	0	0	0	0	$91,744	$90,216	$98,307	0	0	0	$93,367
45-49	0	0	0	0	83,004	95,941	102,390	0	0	0	94,707
50-54	0	0	0	0	82,685	93,328	104,315	$121,852	0	0	97,395
55-59	0	0	0	0	76,818	93,318	99,392	114,039	0	0	102,842
60-64	0	0	0	0	0	0	0	113,709	0	0	113,709
65-69	0	0	0	0	0	0	0	0	0	0	0
70+	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	$82,860	$93,888	$101,941	$116,249	0	0	$96,676

Average Age: 49.8 Average Service: 24.8

[21] Age and service calculated as of the valuation date.
[22] Age and service calculated as of the valuation date.

4. Valuation Data (cont.)

Service Retired Participant Benefit Summary[23] – Judges

Age	Number of Participants	Average Monthly Benefit
35-39	0	$0
40-44	0	$0
45-49	0	$0
50-54	0	$0
55-59	1	$13,740
60-64	7	$11,203
65-69	13	$11,861
70-74	16	$12,393
75-79	13	$13,160
80-84	11	$12,402
85-89	7	$8,397
90-94	3	$11,387
95+	0	$0
Total	**71**	**$11,903**

Beneficiaries Benefit Summary – Judges

Age	Number of Participants	Average Monthly Benefit
35-39	0	$0
40-44	0	$0
45-49	1	$504
50-54	0	$0
55-59	0	$0
60-64	0	$0
65-69	2	$6,296
70-74	0	$0
75-79	3	$7,177
80-84	2	$6,864
85-89	3	$4,722
90-94	5	$5,469
95+	0	$0
Total	**16**	**$5,617**

[23] Benefits for alternate payees (QDROs) are included with their associated retired participant.

4. Valuation Data (cont.)

Disabled Participant Benefit Summary – Judges

Age	Number of Participants	Average Monthly Benefit
35-39	0	$0
40-44	0	$0
45-49	0	$0
50-54	0	$0
55-59	1	$11,481
60-64	0	$0
65-69	0	$0
70-74	0	$0
75-79	0	$0
80-84	0	$0
85-89	0	$0
90-	0	$0
95+	0	$0
Total	**1**	**$11,481**

Separated Vested Participant Benefit Summary – Judges

Age	Number of Participants	Average Monthly Benefit
35-39	0	$0
40-44	0	$0
45-49	0	$0
50-54	0	$0
55-59	0	$0
60-64	0	$0
65-69	0	$0
70-74	0	$0
75-79	0	$0
80-84	0	$0
85-89	0	$0
90-94	0	$0
95+	0	$0
Total	**0**	**$0**

4. Valuation Data (cont.)

Inactive Teachers[24]

Retirees	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit	Partial Federal Average Total Benefit
Under 35	0	$0	0	$0	$0
35-39	0	$0	0	$0	$0
40-44	0	$0	0	$0	$0
45-49	0	$0	0	$0	$0
50-54	0	$0	10	$12,507	$42,355
55-59	1	$39,300	90	$18,871	$49,548
60-64	3	$6,420	414	$25,381	$52,299
65-69	46	$24,764	1,096	$31,828	$50,618
70-74	191	$38,511	1,062	$36,362	$49,852
75-79	430	$47,612	418	$35,192	$46,827
80-84	556	$45,827	105	$36,165	$46,849
85-89	422	$42,326	29	$41,310	$52,191
90-94	201	$42,903	4	$35,678	$44,934
95-100	69	$47,219	0	$0	$0
100 and over	16	$40,568	0	$0	$0
Total	**1,935**	**$43,875**	**3,228**	**$32,738**	**$49,920**

Beneficiaries	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit	Partial Federal Average Total Benefit
Under 35	1	$6,348	5	$3,062	$6,540
35-39	0	$0	0	$0	$0
40-44	2	$6,786	1	$6,638	$8,268
45-49	1	$6,768	1	$9,817	$12,240
50-54	2	$7,950	4	$6,716	$19,284
55-59	4	$18,045	7	$14,962	$24,634
60-64	5	$20,422	16	$11,950	$19,873
65-69	20	$19,429	29	$13,829	$18,666
70-74	49	$20,908	25	$12,021	$16,597
75-79	51	$22,030	8	$17,630	$22,925
80-84	58	$21,255	6	$15,204	$20,490
85-89	54	$23,774	0	$0	$0
90-94	39	$24,614	0	$0	$0
95-100	12	$19,873	0	$0	$0
100 and over	3	$47,764	0	$0	$0
Total	**301**	**$21,966**	**102**	**$12,631**	**$18,464**

[24] Benefits for alternate payees (QDROs) are included with their associated retired participant.

4. Valuation Data (cont.)

Inactive Teachers (cont.)

Disabled	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit	Partial Federal Average Total Benefit
Under 35	0	$0	0	$0	$0
35-39	0	$0	0	$0	$0
40-44	0	$0	0	$0	$0
45-49	0	$0	2	$3,390	$30,702
50-54	4	$23,142	7	$7,699	$35,470
55-59	3	$22,228	15	$10,077	$33,956
60-64	3	$27,980	16	$13,643	$35,368
65-69	31	$26,993	44	$16,694	$33,674
70-74	36	$27,639	11	$24,738	$35,269
75-79	35	$30,273	2	$18,632	$21,228
80-84	38	$30,563	0	$0	$0
85-89	35	$31,619	0	$0	$0
90-94	24	$37,568	0	$0	$0
95-100	11	$39,059	0	$0	$0
100 and over	1	$25,320	0	$0	$0
Total	**221**	**$30,585**	**97**	**$15,196**	**$33,989**

Terminated Vested	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit
Under 35	0	$0	0	$0
35-39	0	$0	0	$0
40-44	0	$0	7	$3,311
45-49	0	$0	33	$5,808
50-54	0	$0	51	$8,395
55-59	0	$0	56	$11,874
60-64	0	$0	58	$11,185
65-69	0	$0	10	$9,572
70-74	0	$0	1	$45,036
75-79	0	$0	0	$0
80-84	0	$0	1	$9,099
85-89	0	$0	0	$0
90-94	0	$0	0	$0
95-100	0	$0	0	$0
100 and over	0	$0	0	$0
Total	**0**	**$0**	**217**	**$9,707**

4. Valuation Data (cont.)

Inactive Police Officers[25]

Retirees	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit	Partial Federal Average Total Benefit
Under 35	0	$0	0	$0	$0
35-39	0	$0	0	$0	$0
40-44	0	$0	0	$0	$0
45-49	0	$0	1	$12,908	$33,012
50-54	0	$0	300	$26,445	$68,239
55-59	5	$26,203	359	$36,668	$71,369
60-64	223	$43,741	356	$53,080	$73,133
65-69	805	$49,468	205	$68,293	$79,081
70-74	563	$53,489	47	$71,090	$79,277
75-79	351	$55,063	5	$84,629	$92,909
80-84	151	$59,350	0	$0	$0
85-89	46	$74,411	0	$0	$0
90-94	15	$79,587	0	$0	$0
95-100	1	$91,776	0	$0	$0
100 and over	0	$0	0	$0	$0
Total	**2,160**	**$52,231**	**1,273**	**$45,382**	**$72,713**

Beneficiaries	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit	Partial Federal Average Total Benefit
Under 35	9	$14,513	38	$4,545	$10,452
35-39	0	$0	0	$0	$0
40-44	2	$17,790	6	$11,848	$25,962
45-49	5	$23,268	17	$13,892	$27,844
50-54	14	$36,620	15	$20,064	$35,388
55-59	34	$29,171	20	$27,096	$37,109
60-64	97	$30,138	12	$27,545	$33,816
65-69	169	$30,138	10	$34,485	$37,854
70-74	173	$30,366	8	$29,338	$35,963
75-79	190	$31,168	2	$29,394	$37,266
80-84	142	$32,459	0	$0	$0
85-89	121	$30,846	1	$2,565	$3,180
90-94	74	$31,469	0	$0	$0
95-100	23	$34,318	0	$0	$0
100 and over	2	$26,058	0	$0	$0
Total	**1,055**	**$30,797**	**129**	**$17,785**	**$26,737**

[25] Benefits for alternate payees (QDROs) are included with their associated retired participant.

4. Valuation Data (cont.)

Inactive Police Officers (cont.)

Disabled	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit	Partial Federal Average Total Benefit
Under 35	0	$0	0	$0	$0
35-39	0	$0	0	$0	$0
40-44	0	$0	12	$6,793	$40,961
45-49	5	$19,697	68	$10,118	$36,081
50-54	11	$21,434	73	$13,215	$35,116
55-59	34	$27,218	53	$20,681	$43,573
60-64	97	$39,545	36	$41,320	$54,007
65-69	160	$42,736	6	$49,882	$56,344
70-74	143	$44,863	3	$51,416	$59,300
75-79	108	$47,749	0	$0	$0
80-84	71	$51,523	0	$0	$0
85-89	77	$55,027	0	$0	$0
90-94	26	$64,916	0	$0	$0
95-100	4	$62,211	0	$0	$0
100 and over	1	$70,344	0	$0	$0
Total	**737**	**$45,329**	**251**	**$19,010**	**$40,949**

Terminated Vested	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit
Under 35	0	$0	0	$0
35-39	0	$0	0	$0
40-44	0	$0	3	$8,622
45-49	0	$0	26	$11,729
50-54	0	$0	32	$14,811
55-59	0	$0	8	$21,468
60-64	0	$0	0	$0
65-69	0	$0	0	$0
70-74	0	$0	0	$0
75-79	0	$0	0	$0
80-84	0	$0	0	$0
85-89	0	$0	0	$0
90-94	0	$0	0	$0
95-100	0	$0	0	$0
100 and over	0	$0	0	$0
Total	**0**	**$0**	**69**	**$14,152**

4. Valuation Data (cont.)

Inactive Firefighters[26]

Retirees	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit	Partial Federal Average Total Benefit
Under 35	0	$0	0	$0	$0
35-39	0	$0	0	$0	$0
40-44	0	$0	0	$0	$0
45-49	0	$0	0	$0	$0
50-54	0	$0	48	$29,804	$73,041
55-59	0	$0	177	$39,106	$78,223
60-64	20	$42,545	153	$52,495	$79,659
65-69	88	$53,878	78	$74,782	$91,201
70-74	202	$59,036	23	$98,917	$108,309
75-79	171	$64,704	1	$117,235	$133,164
80-84	76	$63,123	0	$0	$0
85-89	38	$72,142	0	$0	$0
90-94	9	$65,928	0	$0	$0
95-100	0	$0	0	$0	$0
100 and over	0	$0	0	$0	$0
Total	**604**	**$60,785**	**480**	**$51,270**	**$81,828**

Beneficiaries	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit	Partial Federal Average Total Benefit
Under 35	0	$0	16	$6,479	$15,204
35-39	1	$27,648	0	$0	$0
40-44	0	$0	2	$7,291	$32,070
45-49	1	$29,124	3	$12,491	$46,744
50-54	5	$25,896	6	$12,516	$29,550
55-59	10	$25,916	4	$16,664	$27,882
60-64	19	$29,389	7	$28,492	$36,153
65-69	42	$31,591	5	$35,542	$44,477
70-74	75	$30,765	0	$0	$0
75-79	75	$30,735	1	$30,357	$80,376
80-84	62	$34,042	0	$0	$0
85-89	69	$34,164	0	$0	$0
90-94	43	$35,958	0	$0	$0
95-100	15	$31,649	0	$0	$0
100 and over	3	$38,456	0	$0	$0
Total	**420**	**$32,256**	**44**	**$16,022**	**$29,370**

[26] Benefits for alternate payees (QDROs) are included with their associated retired participant.

4. Valuation Data (cont.)

Inactive Firefighters (cont.)

Disabled	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit	Partial Federal Average Total Benefit
Under 35	0	$0	0	$0	$0
35-39	0	$0	0	$0	$0
40-44	0	$0	1	$11,412	$55,668
45-49	0	$0	13	$8,609	$34,178
50-54	0	$0	11	$13,229	$40,555
55-59	7	$22,217	10	$25,216	$45,808
60-64	26	$44,317	19	$40,098	$52,654
65-69	43	$49,447	7	$62,165	$67,291
70-74	62	$52,356	1	$48,494	$48,792
75-79	75	$54,898	0	$0	$0
80-84	36	$51,487	0	$0	$0
85-89	32	$59,461	0	$0	$0
90-94	11	$60,039	0	$0	$0
95-100	6	$54,730	0	$0	$0
100 and over	1	$100,332	0	$0	$0
Total	**299**	**$52,317**	**62**	**$28,492**	**$47,168**

Terminated Vested	100% Federal Count	100%Federal Average Benefit	Partial Federal Count	Partial Federal Average Federal Benefit
Under 35	0	$0	0	$0
35-39	0	$0	0	$0
40-44	0	$0	2	$9,370
45-49	0	$0	6	$9,472
50-54	0	$0	10	$15,899
55-59	0	$0	2	$23,362
60-64	0	$0	0	$0
65-69	0	$0	0	$0
70-74	0	$0	0	$0
75-79	0	$0	0	$0
80-84	0	$0	0	$0
85-89	0	$0	0	$0
90-94	0	$0	0	$0
95-100	0	$0	0	$0
100 and over	0	$0	0	$0
Total	**0**	**$0**	**20**	**$14,064**

5. Summary of Principal Plan Provisions

The summary follows the Federal Benefit Payments under certain District of Columbia Retirement Plans regulation (31CFR Part 29).

District of Columbia Judges' Plan

Membership

Eligibility
All Judges of the District of Columbia Court of Appeals or the Superior Court are participants in the Plan. The Executive Officer of the Court System is also eligible.

Member Contributions
All Judges contribute 3.5% of their salaries to the Fund. Judges electing survivor coverage pay an additional 3.5% of annual salary (or retirement benefit if retired). Member contributions for survivor coverage do not end at retirement.

Service

Judicial Service
A member receives credit for each full year and additional months of employment as a Judge with the District of Columbia Courts.

Credited Service
Service granted or purchased in addition to judicial service.

Normal Retirement Benefit

Eligibility

- Age 50 with 20 years of Judicial Service; or
- Age 60 with 10 years of Judicial Service; or
- Age 55 with 10 years of service, in which case a 1/12% per month prior to age 60 reduction in Judicial Service benefit applies

Mandatory retirement is at age 74.

5. Summary of Principal Plan Provisions (cont.)

District of Columbia Judges' Plan (cont.)

Benefit Amount

- Basic salary at retirement times the ratio of Judicial Service to 30, plus
- An additional benefit for any Credited Service (non Judicial), as follows:
  - 1.50% of basic salary times Credited Service up to 5 years, plus
  - 1.75% of basic salary times Credited Service from 5 to 10 years, plus
  - 2.00% of basic salary times Credited Service in excess of 10 years

The maximum total benefit is 80% of basic salary.

Disability Retirement Benefit

Eligibility

A member is eligible for disability retirement after five years of Judicial and Credited Service and becoming physically or mentally disabled to an extent that interferes with proper performance of judicial duties. No service requirement applies to involuntary disability retirement.

Benefit Amount

Normal Retirement Benefit, subject to a minimum of 50% of basic salary.

Deferred Vested Retirement Benefit

Eligibility

Ten years of Judicial Service.

Benefit Amount

The deferred vested benefit is the same as the Early Retirement Benefit beginning at age 55 or Normal Retirement Benefit beginning at age 60, but reflecting only service to the date of employment termination.

Survivor Benefits

Eligibility

Judges who contribute an additional 3.5% of salary during their working career and during retirement will provide a survivor benefit to their surviving spouse and/or children. The judge must also have completed at least five years of Judicial and Credited Service, and have been married for two years or have a child by marriage. A refund of excess contributions, less benefits paid to the retiree will be paid if there are no eligible survivors.

5. Summary of Principal Plan Provisions (cont.)

District of Columbia Judges' Plan (cont.)

Benefit Amount

Spouse Only
55% of the benefit the Judge is receiving (if retired) or would have received had he retired on the day prior to death, not less than 55% of the benefit that would be provided to a Judge with 15 years of Judicial Service without adjustment for early retirement.

Dependent Children
A benefit will be paid to children under the age of 18 (22 if a full time student), or to any unmarried child incapable of self support due to a disability which occurred before age 18. Benefit per child is the smallest of:

- 50% of the spouse's annuity
- $6,050.40 ($7,261.44 if no spouse benefits apply) as of 12/1/2014, increased annually
- $18,151.20 ($21,784.32 if no spouse benefits apply) divided by the number of children as of 12/1/2014, increased annually.

Cost-of-Living Adjustments
All pensioners will receive cost-of-living increases in line with those applicable to retirees in the Civil Service Retirement System. Cost-of-living adjustments are paid on January 1.

5. Summary of Principal Plan Provisions (cont.)

Retirement Program for District of Columbia Teachers

Membership

Eligibility
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.

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.

Service

School Service
One year of school service is granted for each year of employment with the D.C. public day schools.

Credited Service
Service granted or purchased in addition to school service.

Average Pay
Average Pay is equal to the highest 36 consecutive months of pay, divided by three.

5. Summary of Principal Plan Provisions (cont.)

Retirement Program for District of Columbia Teachers (cont.)

Voluntary Retirement

Eligibility
For participants hired before November 1, 1996:

- Age 62 with 5 years of school service;
- Age 60 with 20 years of total service, including 5 years of school service; or
- Age 55 with 30 years of total service, including 5 years of school service.

For participants hired on or after November 1, 1996:

- Age 62 with 5 years of school service;
- Age 60 with 20 years of total service, including 5 years of school service; or
- Any age with 30 years of total service, including 5 years of school service.

Benefit Amount
For participants hired before November 1, 1996:

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

For participants hired on or after November 1, 1996:

- 2.0% of Average Pay times service.

For all participants, there is a minimum benefit of 1.0% of Average Pay plus $25 for each year of service. Service after June 30, 1997 is excluded from the calculation of the Federal portion of the benefit.

Involuntary Retirement

Eligibility
Retired involuntarily for reasons other than misconduct or delinquency with:

- 25 years of total service, including 5 years of school service; or
- Age 50 with 20 years of total service, including 5 years of school service.

Benefit Amount
Voluntary Retirement benefit reduced 1/6% per month (2% per year) that date of retirement precedes age 55.

5. Summary of Principal Plan Provisions (cont.)

Retirement Program for District of Columbia Teachers (cont.)

Disability Retirement Benefit

Eligibility
5 years of school service and a physical or mental disability that prevents the member from performing his/her job.

Benefit Amount
Voluntary Retirement benefit, subject to a minimum of the lower of 40% of Average Pay and the benefit that the member would receive, projecting service to age 60. The Federal portion of this benefit is a deferred vested benefit payable upon attainment of age 62. Service after June 30, 1997 is excluded from this calculation.

Lump Sum Death Benefit

Eligibility
Teachers who die before retirement and before completing 18 months of school service or who die without an eligible spouse, child, or parent, will receive a lump sum death benefit.

Benefit Amount
Refund of Member contributions, without interest.

Installment Benefit Payable upon Death – Spouse Only

Eligibility
Teachers who die before retirement and were married for at least two years or have a child by the marriage will provide their survivors a benefit.

Benefit Amount
55% of the Voluntary Retirement benefit subject to the minimums specified in the Disability Retirement Benefit.

5. Summary of Principal Plan Provisions (cont.)

Retirement Program for District of Columbia Teachers (cont.)

Installment Benefit Payable upon Death – Spouse and Dependent Children

Eligibility
For the spouse, as described above; for the children, unmarried and under 18 (22 if a full-time student); or any child dependent because of a disability incurred before age 18. Death does not have to occur before retirement for the children's benefits.

Benefit Amount
Spouse benefit as described above, plus a benefit per child (payable until the children are no longer eligible) equal to the smallest of:

- 60% of Average Pay divided by the number of eligible children;
- \$6,768 (if hired before January 1, 1980), \$6,540 (if hired between January 1, 1980 and October 31, 1996), or \$6,372 (if hired on or after November 1, 1996) per child; or
- \$20,304 (if hired before January 1, 1980), \$19,620 (if hired between January 1, 1980 and October 31, 1996), or \$19,116 (if hired on or after November 1, 1996) divided by the number of children.

These amounts are increased annually based on changes in the Consumer Price Index.

Installment Benefit Payable upon Death – Dependent Children Only

Eligibility
Same as for the children's benefit when there is a surviving spouse.

Benefit Amount
Per child (payable until the children are no longer eligible), the smallest of:

- 75% of Average Pay divided by the number of eligible children;
- \$8,268 (if hired before January 1, 1980), \$7,968 (if hired between January 1, 1980 and October 31, 1996), or \$7,716 (if hired on or after November 1, 1996) per child; or
- \$24,804 (if hired before January 1, 1980), \$23,904 (if hired between January 1, 1980 and October 31, 1996), or \$23,148 (if hired on or after November 1, 1996) divided by the number of children

These amounts are increased annually based on changes in the Consumer Price Index.

5. Summary of Principal Plan Provisions (cont.)

Retirement Program for District of Columbia Teachers (cont.)

Installment Benefit Payable upon Death – Surviving Parents Only

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

Benefit Amount
The benefit is the same as the Surviving Spouse benefit described above.

Deferred Vested Benefit

Eligibility
5 years of school service.

Benefit Amount
The benefit amount is as calculated under the Voluntary Retirement Benefit beginning at age 62, and based on service earned as of the termination of employment.

Form of Payment Options

Normal Form of Payment
The normal form of annuity is an annuity payable for the life of the member.

Reduced Annuity with a Maximum Survivor Annuity (to Spouse)
The original benefit is reduced by 2.5% of annual pension up to $3,600, plus 10% of any amount over $3,600. Spouse will receive 55% of Unreduced Annuity.

Reduced Annuity with a Partial Survivor Annuity (to Spouse)
An annuity with a benefit payable to the spouse of between $1 up to any amount less than 55% of the Unreduced Annuity. The original benefit is reduced by dividing the amount of the survivor's annuity by 55%, then reducing the original benefit by 2.5% of this amount up to $3,600, plus 10% of any amount over $3,600.

Reduced Annuity with a Survivor Annuity to a Person with an Insurable Interest
A joint and 55% survivor annuity with the original benefit reduced 10% plus an additional 5% for each full 5 years, up to 25 years, the survivor is younger, with a total reduction of 40% for any survivor who is 25 or more years younger.

Reduced Annuity with a Life Benefit
Benefits may be reduced and the reduction is used to purchase life insurance.

5. Summary of Principal Plan Provisions (cont.)

Retirement Program for District of Columbia Teachers (cont.)

Cost-of-Living Adjustments

All participants receive an increase each March based on the annual change in the Consumer Price Index (all items – U.S. City average) from December to December. The annual increase will not be less than 0% for any member, and is limited to 3.0% for members hired on or after November 1, 1996. The cost-of-living adjustments for members who become disabled after June 30, 1997, starts only with the payment of the federal portion of the benefit at age 62.

5. Summary of Principal Plan Provisions (cont.)

District of Columbia Police Officers and Firefighters' Retirement Plan

Membership

Eligibility
All police officers and firefighters of the District of Columbia automatically become members on their date of employment. Police Cadets are not eligible.

Member Contributions
Members hired before November 10, 1996 are required to contribute 7% of annual salary, including any differential for special assignment, but excluding overtime, longevity, holiday, or military pay. Members hired on or after November 10, 1996 contribute 8% of annual salary, including any differential for special assignment, but excluding overtime, holiday, or military pay.

Interest is not credited to each member's accumulated contributions.

Service

Departmental Service
A member receives service for each full year and additional months of employment with either the Metropolitan Police Force or the D.C. Fire Department. Only service earned prior to July1, 1997 is used to compute the plan benefits.

Credited Service
Service granted or purchased in addition to departmental service.

Average Pay
For those hired before February 15, 1980, basic pay for the highest 12 consecutive months. For those hired on or after February 15, 1980, basic pay for the highest 36 consecutive months divided by three.

Longevity Pay (Police Officers Only)
Members who complete 25 years of active service prior to retirement are entitled to an additional 15% of Step 1 pay in the member's pay class. Members who complete 30 years of active service are entitled to an additional 20% of Step 1 pay in the member's pay class.

Members hired before February 15, 1980, who complete 20 years of active service prior to retirement, are entitled to an additional 10% of Step 1 pay in the member's pay class (not included in June 30, 1997 plan provisions – District of Columbia funds portion of benefit attributable to post- June 30, 1997 service).

5. Summary of Principal Plan Provisions (cont.)

District of Columbia Police Officers and Firefighters' Retirement Plan (cont.)

Normal Retirement Benefit

Eligibility

For participants hired before November 10, 1996:

- Age 60; or
- Age 50 with 25 years of departmental service; or
- No age requirement with 20 years of service (only if hired before February 15, 1980.)

For participants hired on or after November 10, 1996:

- Age 60; or
- No age requirement with 25 years of service.

Benefit Amount

For participants hired before November 10, 1996:

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

For participants hired on or after November 10, 1996:

- 2.5% of Average Pay times total service.

For all participants, there is a maximum benefit of 80% of Average Pay. Service after June 30, 1997 is excluded from the calculation of the Federal portion of the benefit.

5. Summary of Principal Plan Provisions (cont.)

District of Columbia Police Officers and Firefighters' Retirement Plan (cont.)

Service-Related Disability Retirement Benefit

Eligibility
Members who are disabled as a result of an illness or injury in the line of duty are eligible for this benefit. The Federal portion of this benefit is payable beginning at age 55.

Benefit Amount
For participants hired before February 15, 1980, 2.5% of Average Pay times total years of service, subject to a minimum benefit of 66-2/3% of Average Pay and subject to a maximum benefit of 70% of Average Pay.

For participants hired on or after February 15, 1980, 70% of final pay times percentage of disability, subject to a minimum benefit of 40% of final pay.

The Federal portion of this benefit is a deferred vested benefit payable upon attainment of age 55, unless the conditions for normal retirement are met, in which case the Federal portion of this benefit is a normal retirement benefit. Service after June 30, 1997 is excluded from this calculation.

Non-Service-Related Disability Retirement Benefit

Eligibility
5 years of departmental service and a physical or mental disability that prevents the member from performing his/her job. The Federal portion of this benefit is payable beginning at age 55.

Benefit Amount
For participants hired before February 15, 1980, 2.0% of Average Pay times total years of service, subject to a minimum benefit of 40% of average pay and subject to a maximum benefit of 70% of average pay.

For participants hired on or after February 15, 1980, 70% of final pay times percentage of disability, subject to a minimum benefit of 30% of final pay.

The Federal portion of this benefit is a deferred vested benefit payable upon attainment of age 55, unless the conditions for normal retirement are met, in which case the Federal portion of this benefit is a normal retirement benefit. Service after June 30, 1997 is excluded from this calculation.

Lump Sum Death Benefit

Eligibility
Death occurring in the line of duty, not resulting from willful misconduct, an intention to bring about his/her own death, or drunkenness.

Benefit Amount
$50,000.

5. Summary of Principal Plan Provisions (cont.)

District of Columbia Police Officers and Firefighters' Retirement Plan (cont.)

Installment Benefit Payable upon Death – Spouse Only, Member Killed Not in Line of Duty after December 29, 1993

Eligibility
Death and, if retired, married for at least one year or have a child by the marriage.

Benefit Amount
40% of the greater of Average Pay and the salary for step 6 salary class 1 of the D.C. Police and Fireman's Salary Act in effect, adjusted for cost-of-living increases if death occurs after retirement. The benefit cannot exceed the rate of pay at death (or retirement if death occurs after retirement.)

Installment Benefit Payable upon Death – Spouse Only, Member Killed in Line of Duty after December 29, 1993

Eligibility
Death (killed in line of duty).

Benefit Amount
100% of final pay (The Federal portion of this benefit is 40% of final pay per June 30, 1997 plan provisions)

Installment Benefit Payable upon Death – Spouse and Dependent Children

Eligibility
For the spouse, as described above; for the children, unmarried and under 18 (22 if full-time student); or any child dependent because of a disability incurred before age 18. Death does not have to occur before retirement for the children's benefits.

Benefit Amount
Spouse benefit as described above, plus, provided death does not occur in the line of duty, a benefit per child (payable until the children are no longer eligible) equal to the smallest of:

- 60% of Average Pay divided by the number of eligible children;
- $3,972 ($3,888 if hired on or after 11/1/1996[27]); or
- $11,916 ($11,664 if hired on or after 11/1/1996[28]) divided by the number of children.

[27] Federal portion of benefit is $1,548 per June 30, 1997 Plan provisions.
[28] Federal portion of benefit is $4,644 per June 30, 1997 Plan provisions.

5. Summary of Principal Plan Provisions (cont.)

District of Columbia Police Officers and Firefighters' Retirement Plan (cont.)

Installment Benefit Payable upon Death – Dependent Children Only

Eligibility
Same as the children's benefit above.

Benefit Amount
Per child, 75% of Average Pay divided by the number of eligible children, adjusted for cost-of-living increases.

Refund of Contributions

Eligibility
Death before retirement and no eligible spouse or children.

Benefit Amount
All Member contributions will be refunded to a named, or statutorily-designated if none named, beneficiary.

Deferred Vested Benefit

Eligibility
5 years of departmental service.

Benefit Amount
Normal Retirement Benefit beginning at age 55.

Form of Payment Options

Normal Form of Payment
Single Life Annuity.

Additional Survivor Benefit
The original benefit is reduced 10%. This 10% amount is reduced by 5% for each full 5 years the survivor is younger (but not more than 40%) and is added to the survivor's benefit.

5. Summary of Principal Plan Provisions (cont.)

District of Columbia Police Officers and Firefighters' Retirement Plan (cont.)

Cost-of-Living Adjustments
Employees (not beneficiaries) who retired prior to February 15, 1980, receive equalization pay, which is defined as the percentage increase as active employees' salary increases.

All other retired participants and their survivors receive an increase each March based on the annual change in the Consumer Price Index (All Urban Consumers) from December to December. The annual increase will not be less than 0% for any member, and is limited to a maximum of 3% for members hired on or after November 10, 1996.

The cost-of-living adjustment for members disabled after June 30, 1997 starts only with the payment of the Federal portion of the benefit at age 55.

Changes in Plan Provisions

There have been no changes in the Plan's provisions since the prior valuation.

6. Valuation Assumptions and Methods

Actuarial Funding Method

The actuarial cost method for each plan is the Individual Entry Age Normal cost method. For purposes of determining the Normal Cost and Actuarial Accrued Liability, select and ultimate expected return assumptions were used, as shown at the end of this section.

Under the Entry Age Normal Actuarial Cost Method:

- A Total Normal Cost for the Plan is calculated as a dollar amount. The Employer Normal Cost is the Total Normal Cost minus the expected employee contributions to the Plan. The payment is expressed as a percentage of active member payroll.

- The liability for all future pension benefits payable under the Plan to current and future retired employees is computed. This liability includes the value of benefit payments expected to be made on the valuation date of October 1. This is called the Fully Projected Liability or the Present Value of Benefits.

- A portion of this liability is assigned to service earned to the date of the valuation. This portion is called the Actuarial Accrued Liability.

    - The Actuarial Accrued Liability for the Police Officers and Firefighters' and Teachers' Plans is assumed to equal the Fully Projected Liability (also known as the Present Value of Benefits), since members in these plans are no longer earning Federal service (service for which the Federal Government is liable) under the Plan.

- The difference between the Fully Projected Liability and the Actuarial Accrued Liability is to be funded by future Normal Costs.

- The Actuarial Value of Assets designated to pay these benefits is subtracted from the Actuarial Accrued Liability, producing the Unfunded Actuarial Accrued Liability.

Use of Individual Entry Age Normal Funding Method

In preparing this valuation, we used the Individual Entry Age Normal method. While SFFAS 5, paragraph 64 provides that "[t]he 'aggregate entry age normal' funding method should be used to calculate the pension expense, the liability for the administrative entity financial statements and the expense for the employer entity financial statements", it allows that "[t]he plan, however, may use other actuarial cost methods if it explains why aggregate entry age normal is not used and if the results are not materially different." Typically, when calculating the normal cost in aggregate entry age normal, the present value of future normal cost of all employees is divided by the present value of future salaries to establish the normal cost rate that is applied to all salaries. However, our understanding is that in the version of Aggregate Entry Age Normal used by the Department of Defense and, we understand, for the Civil Service plans, the normal cost rate is calculated for new employees, using the ratio of present value of benefits to present value of future salaries, and that normal cost rate is used for all employees. The

6. Valuation Assumptions and Methods (cont.)

Use of Individual Entry Age Normal Funding Method (cont.)

difference between the present value of benefits and the present value of future normal cost is the accrued liability.

Since there is no service being earned in the Police Officers and Firefighters' and Teachers' Plans, there should be no normal cost for these plans since all liabilities are for service earned before July 1, 1997 and the issue of the type of Entry Age Normal method is moot. The Judges' Plan, however, should have a normal cost, since employees are still earning benefits paid for by the Treasury. The normal cost amounts under both versions of Entry Age Normal tend to be similar[29]. However, only the Aggregate method has the undesirable result of creating gains or losses by the very use of the method. Also, because of the low number of new entrants to the Judges' Plan, using a normal cost rate derived from new entrants would result in significant annual normal cost fluctuation. In the last few years, the Government Accounting Standards Board (GASB) and the Conference of Consulting Actuaries have shown a preference for the Individual method. For these reasons and the fact that the prior actuaries used the Individual method, we have continued the use of that method. We have also concluded that the Individual Entry Age Normal funding method would better represent a reasonable progression of accrued liability and normal cost from year to year than would the Aggregate Entry Age Normal method.

Use of Spot Interest Rates

We use spot rates[30] to calculate the present value of participants' benefits. However, for the Judges' Plan we replace the spot rates with an effective interest rate (EIR). The EIR is the single interest rate that would yield the same present value of benefits that the spot rates do. We revised this method with the 2013 valuation (and in the Revised 2012 Valuation) to first simplify the calculation of the normal cost and second, to provide for a more level normal cost in future years.

This revision does not significantly change the results of the valuation for the Judges' Plan.

[29] Our interpretation of the aggregate entry age normal method, which is consistent with the Department of Treasury's previous interpretations, is that there is no normal cost for Police Officers, Firefighters, and Teachers because these employees are not currently receiving service credits in the Plan for their service with the District of Columbia. Thus, there is no difference in either the accrued liability or normal cost between the aggregate entry age normal method and the individual entry age normal method for these employees. However, as judges are still earning additional service in the Plan, based on our understanding of the two methods, there is a difference between the normal costs between the two methods for judges. While the use of the aggregate entry age normal method would produce the same accrued liabilities for judges as the individual entry age normal method, the aggregate entry age normal method would produce a slightly lower normal cost. The difference as of October 1, 2013 would result in a decrease of approximately 5.8% in the normal cost, a difference in the contributions to the Judges' Plan of approximately 3.5% and a difference in the overall contribution to the Plan of about 0.07%. From an actuarial perspective we believe that this is an immaterial difference, and are continuing the use of the individual entry age normal method because this method does not result in gains or losses simply due to the function of the method, rather than from actual plan experience.

[30] Spot rates are a series of discount rates each used to discount payments expected to be made in a single year. Spot rates are different from forward rates, as forward rates are used to project the value of assets (or discount the value of payments) for a year. A spot rate can be considered as the equivalent of a series of forward rates, one for each year up to the year for which the spot rate applies. See the table on page 54 to see which rates are used to discount future payments in which future year, and the table in footnote 11 on page 8 for an explanation of how the spot rates are decomposed to create forward rates.

6. Valuation Assumptions and Methods (cont.)

Interest Rates Used For Projections

In prior years, the same interest rates used to calculate the Plan liability were used to project the investment return on the Plan's assets into the future. However, since we are using the rates provided as spot rates, rather than forward rates, we calculated separate interest rates for the purposes of projecting the investment returns on Plan assets. These rates are the forward rates implicit in the determination of the spot rates used in the valuation. We use these forward rates in the projections for the Judges' Plan and the Police Officers and Firefighters' and Teachers' Plans.

Treatment of Interest Rates Changes on Amortization Base Balances

The prior amortization periods and payments are fixed. As a result, the balances of prior amortization bases are restated each year when the assumed discount rates change. This is separate from the actuarial gain or loss which impacts the unfunded liability. In this valuation of the Police Officers and Firefighters' and Teachers' Plans, the general decrease in the interest rates effectively increased the value of the already established amortization payments. This change is combined with the actuarial loss from assumption and method changes in determining the amount of the gain or loss amortization base for the current year. Thus, while there was a net actuarial loss due to the decrease in interest rates and cost-of-living adjustment assumptions, the increase in the value of the remaining payments was larger, resulting in an overall gain being amortized for 2015, as shown on page 6.

RP 2014/MP 2014

The Society of Actuaries recently issued a new mortality table and mortality improvement projection table, the RP 2014 and MP 2014 tables. We studied Plan participants' mortality experience in 2014 and used that experience to adjust the RP 2000 mortality table to better reflect mortality experience for the participants covered by the Plan. We believe that the mortality experience of this group is relatively credible, because of the size of the group. Thus, we suggest revising the mortality table to reflect the newly issued mortality table only with the preparation of the next experience study.

Open Group Projections

As part of this valuation we include open group projections of the benefit payment amounts and the funding projections. For these purposes, we assumed that all currently employed judges will be replaced by new judges when they retire or die. We based the replacement on a 50/50 mix of two theoretical new employees, ages 45 and 55, with the typical salary ($201,100 for FY2015) for the younger employee and a slightly higher salary for the older employee. We also assumed that 50% of the new employees were male.

Demographic Assumptions

The demographic assumptions for this valuation were established through an experience study conducted in 2014, covering the period July 1, 2008 through May 31, 2013.

6. Valuation Assumptions and Methods (cont.)

Demographic Assumptions (cont.)

Valuation Date All assets and liabilities are computed as of October 1, 2015.

Expenses Expenses are assumed to be fully reimbursed to the Funds.

Active (Healthy) Member Mortality 80% of RP-2000 Combined Healthy with Blue Collar Adjustment and generational projection from 2011 using Scale AA for Police Officers and Firefighters, with the following setbacks:

Male Police Officers and Firefighters: 1 year
Female Police Officers and Firefighters: no adjustment

80% of RP-2000 Combined Healthy with White Collar Adjustment and generational projection from 2011 using Scale AA for Teachers, with the following setbacks:

Male Teachers: 4 years
Female Teachers: 3 years

RP-2000 Combined Healthy with White Collar Adjustment and generational projection from 2011 using Scale AA (sex distinct) for Judges, with no setbacks.

Inactive (Healthy) Member Mortality RP-2000 Combined Healthy with Blue Collar Adjustment and generational projection from 2011 using Scale AA for Police Officers and Firefighters, with the following setbacks:

Male Police Officers and Firefighters: 1 year
Female Police Officers and Firefighters: no adjustment

RP-2000 Combined Healthy with White Collar Adjustment and generational projection from 2011 using Scale AA for Teachers, with the following setbacks:

Male Teachers: 4 years
Female Teachers: 3 years

RP-2000 Combined Healthy with White Collar Adjustment and generational projection from 2011 using Scale AA (sex distinct) for Judges, with no setbacks.

6. Valuation Assumptions and Methods (cont.)

Demographic Assumptions (cont.)

Disabled Member Mortality

RP-2000 Combined Healthy with Blue Collar Adjustment and generational projection from 2011 using Scale AA for Police Officers and Firefighters, with the following set forwards:

Male Police Officers and Firefighters: no adjustment
Female Police Officers and Firefighters: 1 year

RP-2000 Combined Healthy with White Collar Adjustment and generational projection from 2011 using Scale AA for Teachers, with the following set forwards:

Male Teachers: 1 year
Female Teachers: 2 years

RP-2000 Combined Healthy with White Collar Adjustment and generational projection from 2011 using Scale AA (sex distinct) for Judges, with no setbacks.

6. Valuation Assumptions and Methods (cont.)

Demographic Assumptions (cont.)

Increases in Pay

Assumed pay increases for active Members consist of increases due to cost of living adjustments and promotion and increases due to longevity and retention incentives. Cost of living increases are assumed to result in a general wage increase (see Economic Assumptions) for all employees.

Additional increases for some members are also assumed, as shown below via representative rates:

Additional Increases

Years of Service	Teachers	Police	Fire
10	2.00%	3.00%	3.00%
15	1.60%	2.10%	7.36%
20	0.75%	8.80%	4.70%
25	0.60%	3.60%	3.75%
30	0.40%	3.35%	7.90%

Allowances have also been made for special increases in Compensation prior to termination or retirement. For police officers, an additional increase of 5% is given for the Base Retention Differential after 20 years of service. Police officers are also assumed to receive longevity increases of 5% of step 1 pay in the officers' pay class after 15 years of service and additional increases of 5% of step 1 pay (approximated) in the officers' pay class after 20, 25 and 30 years of service. These longevity pay increases are not included in pensionable compensation unless the Member has at least 25 years of service. Firefighters are assumed to receive retention incentives of 5%, 10%, 15%, and 20% applied to individual base pay after 15, 20, 25, and 30 years of service, respectively.

One-time Police Officers pay increase – in addition to the assumed pay improvement described above, because of the pay increase recently agreed to, we increased the pay for all police officers (both base pay and longevity pay) by 3%, since this increase was not reflected in the pay provided.

We also annualized the longevity pay for police officers, as the pay provided is a year-to-date pay, rather than an annual rate of pay.

6. Valuation Assumptions and Methods (cont.)

Demographic Assumptions (cont.)

Service Retirement

Retirement is assumed to occur in accordance with the tables below.

Age	Fire[31]	Police - Male	Police - Female	Teachers	Judges
45-49	10%	10%	10%	0%	0%
50	15%	40%	40%	0%	0%
51	17%	25%	30%	0%	0%
52	19%	25%	30%	0%	0%
53	21%	25%	30%	0%	0%
54	23%	25%	30%	0%	0%
55	25%	25%	30%	35%	0%
56	27%	22%	30%	35%	0%
57	29%	22%	31%	35%	0%
58	31%	22%	32%	35%	10%
59	33%	22%	33%	35%	10%
60-62	100%	100%	100%	25%	10%
63-69	100%	100%	100%	25%	10%
70+	100%	100%	100%	100%	100%

[31] Rates include an additional 15% for Firefighters ages 50-59 with at least 30 years of service.

6. Valuation Assumptions and Methods (cont.)

Demographic Assumptions (cont.)

Disability

No disabilities are assumed among Judges.

Below are sample rates of disability assumed for teachers, police officers, and firefighters:

Age	Police	Fire	Teachers
30	0.900%	0.750%	0.070%
35	0.900%	0.750%	0.120%
40	0.405%	0.375%	0.128%
45	0.405%	0.375%	0.208%
50	0.405%	0.375%	0.500%
55	0.000%	0.000%	0.800%
59	0.000%	0.000%	0.800%
60	0.000%	0.000%	0.000%

We assume that 75% of disabilities for police officers and firefighters are line of duty disabilities. However for police officers and firefighters eligible to retire when they become disabled we assumed 100% were service related disabilities and that the disabilities were 100% disabled.

Termination

Separate rates of withdrawal/termination are assumed among teachers, police officers, and firefighters. No terminations are assumed among Judges. Termination rates are not applied to Members eligible for service retirement.

Sample termination rates are shown below:

Age	Fire	Police	Teachers - Male	Teachers - Female
30	1.50%	1.6%	15.83%	7.92%
35	1.25%	1.6%	13.70%	6.85%
40	1.00%	0.9%	13.50%	6.76%
45	0.75%	0.9%	10.12%	5.06%
50	0.50%	0.9%	6.07%	3.04%
55	0.25%	0.9%	3.60%	2.16%
60	0.00%	0.0%	3.60%	2.16%
62+	0.00%	0.0%	0.00%	0.00%

70% of terminations are assumed to result in the withdrawal of contributions, with no further benefits payable. All other members are assumed to receive deferred benefits.

6. Valuation Assumptions and Methods (cont.)

Demographic Assumptions (cont.)

Survivor Benefits

50% of teachers and 70% of police officers and firefighters are assumed to be married both during employment and after retirement. Male spouses are assumed to be three years older than their wives. A 57% contingent annuitant benefit was assumed for married police officer and firefighter retirees. We do not adjust this for the possibility of the spouse's death prior to the participant's death, to reflect the potential for remarriage, since the survivor benefit is paid for retired police officers and firefighters regardless of whether the participant and spouse were married at retirement. We assumed all pre-retirement deaths were service related deaths. We have not valued any additional survivor benefit for police officers and firefighters whose average pay is less than the Step 6 salary class 1 pay.

Judges who have elected survivor benefits are assumed to have a covered spouse.

Return of Employee Contribution

In valuing return of contribution benefits for employees assumed to die without a spouse or to terminate and elect a return of contribution benefit we estimated the employee contributions balance as of July 1, 1997 based on estimated prior salaries.

Data Assumptions

We estimate the amount of the vested accrued benefit for all police officer, firefighter and teacher separated vested participants, based either upon estimates previously provided by the prior actuary, or by estimates we calculated based on the valuation data in the most recent fiscal years.

Police officers received a 3% raise that was not reflected in the participant data provided. We increased base pay to reflect this raise. We also annualized the police officers' longevity pay since it was provided as a year-to-date amount reflecting 18 pay periods, before adding it to base pay to determine the valuation pay.

Because the mortality tables do not include values below age 15, we revised the date of birth of any child below the age of 14 to produce an age of 14 but the number of years of future expected payments was not changed. Because children's benefits are generally temporary, we assumed that all children below the age of 23 would receive a benefit until their 23rd birthday, and determined the date until the benefit

6. Valuation Assumptions and Methods (cont.)

Demographic Assumptions (cont.)

Data Assumptions (cont.)

would cease. All children above the age of 22 are assumed to be disabled, and the disability mortality is used to determine the value of their benefit.

Post Retirement Contributions

Judges who wish to provide a survivor's benefit are required to contribute 3.5% of their annual retirement benefit to pay for this benefit. We valued the net amount of the benefit. Thus, for a retired judge receiving a $100,000 annual benefit and electing a survivor's benefit, we valued a benefit of $96,500. Since we valued the net benefit, we did not include these contributions as an offset to the normal cost. We also reflect the net benefit amount in the benefit payment projections.

Benefits not valued

We did not value the lump sum return of contribution benefit payable on behalf of deceased police officers, firefighters and teachers. The Department of the Treasury's liability is only for amounts contributed prior to 1987, no interest is credited to these contributions and the benefit only applies if the participant has no eligible surviving children or spouse. Therefore, we believe that the amount of any liability would be immaterial.

We do not value survivor benefits for teachers with deferred benefits (actives and terminated vested) for death after retirement, because, unlike police officers and firefighters, the teachers' retirement benefits are reduced for electing spousal benefits. We believe that the reduction that applies to this benefit is sufficiently large that the actuarial value valuing the life annuity adequately reflects the liability for this benefit.

We value surviving children's benefits for active participants indirectly, through the valuation of a 57% surviving spouse benefit, as noted above.

The COLA for surviving spouses of police officers and firefighters who retired prior to February 15, 1980 is based on the CPI. However, due to the complexity of the calculation and the small effect on the liabilities, we valued this benefit for currently assumed to be married spouses assuming that the same COLA that applies to the participant would apply to the spouse. For surviving spouses, we used the lower CPI based COLA.

6. Valuation Assumptions and Methods (cont.)

Economic Assumptions

The investment return, inflation and Cost-of-Living-Adjustment (COLA), and wage inflation assumptions have changed since the prior valuation. Please note that the wage inflation assumption applies as the COLA for police officer and firefighter members who retired prior to February 15, 1980[32]. The following assumptions were supplied by Treasury, based on their analysis of investments and historical experience.[33] These assumptions are intended to comply with SFFAS 5 and 33. These rates are used as spot rates (not forward rates). In preparing projections of future asset amounts we have used the spot rate to determine the implied forward rates to determine future annual rates of return. We continue to use the spot rate to determine the Plan's liabilities, but as shown in the footnote on page 8, we determine the return on assets that would be equivalent to the entire set of spot rates for the purposes of rolling forward the plan assets and determining gains and losses.

The valuation of the Judges' Plan was based on a weighted average return of 3.86% (3.98% in the Revised October 1, 2014 Actuarial Valuation Report). This produced the same Present Value of Benefits as is produced using the yield curve shown below. One purpose of using a blended rate is to have a rate to be used between the member's entry into the Plan and the valuation date (a time period to which the yield curve does not apply).

The 15-Year Fund projections for the Police Officers and Firefighters' and Teachers' Plans use expense projections provided by the Department of the Treasury. The 15-Year Fund projections for the Judges' Plan assumes employee contribution increases of 1.70% annually (the pay inflation assumption for Judges), as well as assuming that retiree contributions will grow at the same rate as projected benefit payments. The 15-Year Fund projections for the Judges' Plan also use expense projections provided by the Department of the Treasury.

We note that, for judges, the COLA assumption is higher than the salary increase assumption. These assumptions are based on 10-year averages, during a period in which federal employees' pay increases were lower than the consumer price index increases. This is also partially reflected in the negligible differences between the COLA and salary increase assumptions for police officers and firefighters. Only for teachers is the salary increase assumption significantly higher than the COLA assumption.

[32] Please note that former Park Police Officers who retired prior to February 15, 1980 receive a COLA based on Park Police pay increases while other Police Officers receive an increase based on pay increases for Metropolitan Police Officers. However, we do not make a distinction in assumptions between the two as we understand that there are only three Park Police Officers who retired before February 15, 1980.

[33] Paragraph 67 of SFFAS #5 provides that "[s]maller federal administrative entities may employ the assumptions used by any of the three primary plans where appropriate or their own assumptions", and suggest that if assumptions are used that differ from the primary plans "a footnote should explain how and why the assumptions differ from one of those plans." However, these valuations are not yet available for us to determine whether the assumptions used match or vary from these valuations. We have discussed the use of the spot rate discount rates, and we understand that these do match the rates that will be used in the FERS and CSRS valuations. As judges wage increases match those provided to federal judges, we use a salary increase rate that we understand will be used in the CSRS and FERS valuations. Other wage increase assumptions are based on experience. COLA assumptions for PFT participants are based on 10-year averages, but use different consumer price indices as the base for these increases, so these assumptions may differ slightly from those used in the FERS and CSRS valuations.

6. Valuation Assumptions and Methods (cont.)

Economic Assumptions (cont.)

	Judges	Police, Fire, Teachers
COLA	2.40%	Police & Fire 2.14%
		Teachers 2.20%
Wage Inflation	1.70%	Police 2.17%
		Fire 2.20%
		Teachers 3.00%

Please note that police officers and firefighters who retired prior to February 15, 1980 receive COLAs based on pay equalization. Thus, for these retirees, their COLAs are assumed to be based on wage inflation rather than on the COLA assumption.

The June 30, 2015 rates (averages over 40 quarters, as published by the Department of the Treasury) shown below were used for the current valuation.

Duration	Return Assumption	Duration	Return Assumption	Duration	Return Assumption	Duration	Return Assumption
0-1	1.52%	25-26	4.10%	50-51	4.22%	75-76	4.27%
1-2	1.69%	26-27	4.10%	51-52	4.22%	76-77	4.27%
2-3	1.92%	27-28	4.10%	52-53	4.23%	77-78	4.27%
3-4	2.17%	28-29	4.11%	53-54	4.23%	78-79	4.28%
4-5	2.42%	29-30	4.12%	54-55	4.23%	79-80	4.28%
5-6	2.67%	30-31	4.12%	55-56	4.24%	80-81	4.28%
6-7	2.90%	31-32	4.13%	56-57	4.24%	81-82	4.28%
7-8	3.11%	32-33	4.14%	57-58	4.24%	82-83	4.28%
8-9	3.29%	33-34	4.15%	58-59	4.24%	83-84	4.28%
9-10	3.45%	34-35	4.15%	59-60	4.24%	84-85	4.28%
10-11	3.59%	35-36	4.16%	60-61	4.25%	85-86	4.28%
11-12	3.70%	36-37	4.16%	61-62	4.25%	86-87	4.29%
12-13	3.79%	37-38	4.17%	62-63	4.25%	87-88	4.29%
13-14	3.87%	38-39	4.18%	63-64	4.25%	88-89	4.29%
14-15	3.93%	39-40	4.18%	64-65	4.25%	89-90	4.29%
15-16	3.98%	40-41	4.18%	65-66	4.26%	90-91	4.29%
16-17	4.02%	41-42	4.19%	66-67	4.26%	91-92	4.29%
17-18	4.05%	42-43	4.19%	67-68	4.26%	92-93	4.29%
18-19	4.07%	43-44	4.20%	68-69	4.26%	93-94	4.29%
19-20	4.09%	44-45	4.20%	69-70	4.26%	94-95	4.29%
20-21	4.10%	45-46	4.21%	70-71	4.27%	95-96	4.29%
21-22	4.10%	46-47	4.21%	71-72	4.27%	96-97	4.29%
22-23	4.11%	47-48	4.21%	72-73	4.27%	97-98	4.30%
23-24	4.11%	48-49	4.22%	73-74	4.27%	98-99	4.30%
24-25	4.10%	49-50	4.22%	74-75	4.27%	99-100	4.30%

Note: See page 8 for assumptions used for some gain/loss purposes.

6. Valuation Assumptions and Methods (cont.)

Prior Assumptions used for October 1, 2014 Valuation

The economic assumptions were revised based on guidance from the Department of Treasury. The prior year's assumptions are shown below.

Economic Assumptions

	Judges	Police, Fire, Teachers
COLA	2.50%	Police & Fire 2.39%
		Teachers 2.51%
Wage Inflation	1.90%	Police 2.31%
		Fire 2.20%
		Teachers 3.00%

The September 30, 2014 rates shown below were used for the prior valuation.

Duration	Return Assumption	Duration	Return Assumption	Duration	Return Assumption	Duration	Return Assumption
0-1	1.72%	25-26	4.25%	50-51	4.35%	75-76	4.40%
1-2	1.90%	26-27	4.24%	51-52	4.35%	76-77	4.40%
2-3	2.11%	27-28	4.24%	52-53	4.36%	77-78	4.40%
3-4	2.34%	28-29	4.24%	53-54	4.36%	78-79	4.40%
4-5	2.59%	29-30	4.25%	54-55	4.36%	79-80	4.40%
5-6	2.83%	30-31	4.26%	55-56	4.36%	80-81	4.40%
6-7	3.06%	31-32	4.26%	56-57	4.36%	81-82	4.40%
7-8	3.27%	32-33	4.27%	57-58	4.37%	82-83	4.41%
8-9	3.45%	33-34	4.28%	58-59	4.37%	83-84	4.41%
9-10	3.61%	34-35	4.28%	59-60	4.37%	84-85	4.41%
10-11	3.75%	35-36	4.29%	60-61	4.37%	85-86	4.41%
11-12	3.87%	36-37	4.30%	61-62	4.38%	86-87	4.41%
12-13	3.96%	37-38	4.30%	62-63	4.38%	87-88	4.41%
13-14	4.04%	38-39	4.31%	63-64	4.38%	88-89	4.41%
14-15	4.10%	39-40	4.31%	64-65	4.38%	89-90	4.41%
15-16	4.15%	40-41	4.31%	65-66	4.38%	90-91	4.41%
16-17	4.19%	41-42	4.32%	66-67	4.38%	91-92	4.41%
17-18	4.22%	42-43	4.32%	67-68	4.39%	92-93	4.41%
18-19	4.25%	43-44	4.33%	68-69	4.39%	93-94	4.41%
19-20	4.26%	44-45	4.33%	69-70	4.39%	94-95	4.42%
20-21	4.27%	45-46	4.33%	70-71	4.39%	95-96	4.42%
21-22	4.27%	46-47	4.34%	71-72	4.39%	96-97	4.42%
22-23	4.27%	47-48	4.34%	72-73	4.39%	97-98	4.42%
23-24	4.26%	48-49	4.34%	73-74	4.39%	98-99	4.42%
24-25	4.25%	49-50	4.35%	74-75	4.40%	99-100	4.42%

7. Benefit Payments and Funding Projections

Benefit Payment Projections (open group)

Fiscal Year Ending in	Judges' Expected Net Benefit Payments[34]
2016	$ 11,844,084
2017	12,563,732
2018	12,956,056
2019	13,254,054
2020	13,828,022
2021	14,362,414
2022	14,397,229
2023	14,685,987
2024	14,860,956
2025	14,995,211
2026	15,024,602
2027	14,978,900
2028	15,049,905
2029	15,107,952
2030	15,315,607
2031	15,422,394
2032	15,630,685
2033	15,724,312
2034	15,884,928
2035	15,909,781
2036	15,953,743
2037	16,049,708
2038	15,993,484
2039	15,898,686
2040	15,770,211

[34] Net Benefit Payments are net of retiree contributions to provide for survivor benefits.

7. Benefit Payment and Funding Projections (cont.)

Benefit Payment Projections (closed group)[35]

Fiscal Year Ending in	Judges' Expected Net Benefit Payments	Fiscal Year Ending in	Judges' Expected Net Benefit Payments
2016	$ 11,844,084	2053	$ 4,552,628
2017	12,563,732	2054	4,124,520
2018	12,956,056	2055	3,724,616
2019	13,254,054	2056	3,352,378
2020	13,828,022	2057	3,004,065
2021	14,362,414	2058	2,677,860
2022	14,397,229	2059	2,373,886
2023	14,685,987	2060	2,091,312
2024	14,860,956	2061	1,828,341
2025	14,995,211	2062	1,586,673
2026	15,024,602	2063	1,365,903
2027	14,955,023	2064	1,164,488
2028	14,976,423	2065	981,810
2029	14,967,929	2066	819,264
2030	15,062,605	2067	675,696
2031	15,001,469	2068	549,880
2032	14,803,914	2069	441,227
2033	14,470,354	2070	349,749
2034	14,251,071	2071	274,277
2035	13,881,066	2072	212,722
2036	13,468,084	2073	162,747
2037	13,075,372	2074	122,955
2038	12,646,945	2075	91,380
2039	12,090,665	2076	66,928
2040	11,522,031	2077	48,216
2041	11,154,177	2078	34,123
2042	10,545,969	2079	23,710
2043	10,040,726	2080	16,156
2044	9,422,607	2081	10,791
2045	8,814,564	2082	7,070
2046	8,217,140	2083	4,553
2047	7,633,943	2084	2,883
2048	7,068,375	2085	1,798
2049	6,521,783	2086	1,113
2050	5,994,090	2087	681
2051	5,487,679	2088	410
2052	5,006,809	2089	247

[35] Present Value of Benefits for Judges is calculated based on closed group benefit projections.

7. Benefit Payment and Funding Projections (cont.)

Benefit Payment Projections (closed group)

Fiscal Year Ending in	Police Officers, Firefighters and Teachers' Expected Benefit Payments	Fiscal Year Ending in	Police Officers, Firefighters and Teachers' Expected Benefit Payments
2016	$ 546,555,904	2053	$ 81,769,484
2017	549,658,779	2054	72,695,877
2018	551,431,594	2055	64,328,602
2019	551,843,743	2056	56,625,602
2020	551,004,358	2057	49,550,756
2021	548,519,713	2058	43,075,104
2022	544,588,548	2059	37,175,469
2023	538,962,518	2060	31,830,391
2024	531,904,114	2061	27,022,966
2025	523,434,381	2062	22,735,525
2026	513,590,724	2063	18,945,965
2027	502,270,346	2064	15,631,104
2028	489,691,826	2065	12,763,997
2029	476,000,052	2066	10,312,955
2030	461,210,217	2067	8,243,696
2031	445,427,791	2068	6,518,947
2032	428,818,482	2069	5,100,560
2033	411,397,206	2070	3,950,075
2034	393,291,358	2071	3,028,273
2035	374,586,903	2072	2,298,672
2036	355,406,758	2073	1,729,049
2037	335,869,050	2074	1,289,605
2038	316,126,084	2075	953,754
2039	296,333,877	2076	699,877
2040	276,647,321	2077	510,266
2041	257,224,439	2078	369,865
2042	238,219,087	2079	266,641
2043	219,767,160	2080	191,400
2044	201,993,206	2081	136,993
2045	185,001,780	2082	97,857
2046	168,877,736	2083	69,832
2047	153,674,490	2084	49,805
2048	139,414,401	2085	35,602
2049	126,101,089	2086	25,438
2050	113,719,623	2087	18,081
2051	102,234,475	2088	12,815
2052	91,599,235	2089	9,017

7. Benefit Payments and Funding Projections (cont.)

District Benefit Payments to Police Officers, Firefighters and Teachers

Fiscal Year Ending in	Benefits Paid by District ($ millions)[36]
1998-1999	$ 2.3
2000	3.9
2001	4.6
2002	6.7
2003	10.9
2004	16.2
2005	21.7
2006	28.6
2007	38.4
2008	47.1
2009	58.1
2010	65.5
2011	73.3
2012	86.0
2013	99.8
2014	112.6
2015	126.4

[36] Prior to January 2008, the amount of District Benefit Payments were estimates provided by the D.C. Retirement Board Actuary.

7. Benefit Payment and Funding Projections (cont.)

15-Year Fund Projections

D.C. Federal Pension Fund (closed group)

Fiscal Year Ending In	Expected Return	BOY Assets	Federal Contribution (with Expense Reimbursement)	Benefit Payments	Expenses	Investment Return	EOY Assets
2016	1.52%	$3,959,281,704	$464,200,000	($546,555,904)	($18,600,000)	$ 55,885,897	$ 3,914,211,697
2017	1.86%	3,914,211,697	443,900,000	(549,658,779)	(18,500,000)	67,530,795	3,857,483,713
2018	2.38%	3,857,483,713	452,600,000	(551,431,594)	(18,400,000)	85,082,913	3,825,335,032
2019	2.92%	3,825,335,032	477,400,000	(551,843,743)	(18,200,000)	103,507,618	3,836,198,907
2020	3.43%	3,836,198,907	496,300,000	(551,004,358)	(18,600,000)	121,675,548	3,884,570,097
2021	3.93%	3,884,570,097	522,200,000	(548,519,713)	(19,000,000)	141,482,436	3,980,732,820
2022	4.29%	3,980,732,820	482,700,000	(544,588,548)	(19,400,000)	158,707,715	4,058,151,987
2023	4.59%	4,058,151,987	482,600,000	(538,962,518)	(19,800,000)	173,523,007	4,155,512,476
2024	4.74%	4,155,512,476	492,900,000	(531,904,114)	(20,200,000)	183,939,122	4,280,247,484
2025	4.90%	4,280,247,484	486,500,000	(523,434,381)	(20,600,000)	196,451,353	4,419,164,456
2026	5.00%	4,419,164,456	500,200,000	(513,590,724)	(21,000,000)	207,612,674	4,592,386,406
2027	4.92%	4,592,386,406	460,800,000	(502,270,346)	(21,400,000)	212,965,103	4,742,481,163
2028	4.88%	4,742,481,163	109,000,000	(489,691,826)	(21,800,000)	218,778,236	4,558,767,573
2029	4.92%	4,558,767,573	106,100,000	(476,000,052)	(22,200,000)	211,847,253	4,378,514,774
2030	4.77%	4,378,514,774	65,900,000	(461,210,217)	(22,700,000)	197,464,810	4,157,969,367

7. Benefit Payment and Funding Projections (cont.)

15-Year Fund Projections (cont.)

Judicial Retirement Fund (open group)

Fiscal Year Ending In	Expected Return	BOY Assets	Employee Contributions	Federal Contribution (with Expense Reimbursement)	Net Benefit Payments	Expenses	Investment Return	EOY Assets
2016	1.52%	$150,389,400	$596,443	$14,200,000	($11,844,084)	($1,100,000)	$2,192,077	$154,433,836
2017	1.86%	154,433,836	606,583	14,588,400	(12,563,732)	(1,100,000)	2,751,459	158,716,546
2018	2.38%	158,716,546	616,894	14,778,303	(12,956,056)	(1,100,000)	3,619,902	163,675,590
2019	2.92%	163,675,590	627,382	14,769,734	(13,254,054)	(1,100,000)	4,584,697	169,303,348
2020	3.43%	169,303,348	638,047	14,262,719	(13,828,022)	(1,100,000)	5,555,760	174,831,853
2021	3.93%	174,831,853	648,894	14,857,286	(14,362,414)	(1,100,000)	6,578,439	181,454,057
2022	4.29%	181,454,057	659,925	14,453,460	(14,397,229)	(1,200,000)	7,465,471	188,435,684
2023	4.59%	188,435,684	671,144	14,951,268	(14,685,987)	(1,200,000)	8,303,723	196,475,833
2024	4.74%	196,475,833	682,553	14,250,740	(14,860,956)	(1,200,000)	8,951,051	204,299,221
2025	4.90%	204,299,221	694,157	11,251,902	(14,995,211)	(1,200,000)	9,633,243	209,683,312
2026	5.00%	209,683,312	705,957	11,354,785	(15,024,602)	(1,300,000)	10,094,634	215,514,086
2027	4.92%	215,514,086	717,959	10,859,416	(14,978,900)	(1,300,000)	10,215,792	221,028,352
2028	4.88%	221,028,352	730,164	8,865,826	(15,049,905)	(1,300,000)	10,396,772	224,671,209
2029	4.92%	224,671,209	742,577	8,774,045	(15,107,952)	(1,300,000)	10,658,977	228,438,856
2030	4.77%	228,438,856	755,201	9,784,104	(15,315,607)	(1,400,000)	10,523,921	232,786,475

8. Glossary

Actuarial Accrued Liability (AAL): The difference between the Actuarial Present Value of Future Benefits and the Actuarial Present Value of Future Normal Costs.

Actuarial Asset Valuation Method: The method of determining the value of the assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets or a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the actuarially required contribution (ARC).

Actuarial Cost Method: A procedure for allocating the Actuarial Present Value of Future Benefits and the Actuarial Present Value of Future Normal Costs and the Actuarial Accrued Liability.

Actuarial Present Value of Future Benefits (APVFB): The Actuarial Present Value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits, and inactive, non-retired members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Aggregate Cost Method: An actuarial cost method that spreads the cost of all future benefits in excess of plan assets as a level percentage of future salary or service. The actuarial accrued liability is set to the value of assets in this method.

Aggregate Entry Age Normal Cost Method: The Aggregate Entry Age Normal Cost method, as used in SFFAS 5 and SFFAS 33, determines a normal cost rate based on new entrants and applies that normal cost rate to all employees. The accrued liability is determined as the present value of benefits less the present value of future normal costs.

Annual Required Contributions of the Employer(s) (ARC): The employer's periodic required contributions to a pension or post retirement benefits plan, calculated in accordance with the plan benefits, actuarial assumptions and methods and in accordance with GASB 27.

Cost-of-Living Adjustment (COLA): An annual increase in the amount of a retired participant's benefit intended to adjust the benefit for inflation.

Covered Group: Plan members included in an actuarial valuation.

8. Glossary (cont.)

Deferred Retirement Option Program (DROP): A program allowing a participant eligible to retire to continue working for a fixed period of time, while accumulating the benefit payments he would have received if he had retired on his entry to DROP.

Demographic Assumption: Assumptions regarding the future population of pension participants, including retirement, termination, disability and mortality assumptions.

Economic Assumptions: Assumptions regarding future economic factors, including COLA, salary improvement, change in average wages, changes in Social Security benefits and investment returns.

Employer's Contributions: Contributions made in relation to the annual required contributions of the employer (ARC).

Individual Entry Age Normal (EAN) Cost Method: An actuarial cost method that spreads the cost for each individual's expected benefits over their career, either as a level percentage of pay or service. The actuarial accrued liability is the accumulated value of all past normal cost for each individual (which is the present value of the benefit for inactive participants), and the unfunded accrued liability (surplus) is the excess of the AAL over the value of assets.

Expenses: Plan expenses paid by the plan are divided into administrative and investment related expenses.

Funded Ratio: The actuarial value of assets expressed as a percentage of the plan's actuarial accrued liability.

Investment Return Assumption or Investment Rate of Return (Discount Rate): The rate used to adjust a series of future payments to reflect the time value of money. This valuation uses a yield curve or the equivalent single rate.

Level Dollar Amortization Method: Amortization payments are calculated so that they are a constant dollar amount over a given number of years.

Normal Cost or Normal Actuarial Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method.

8. Glossary (cont.)

Pay-as-you-go (PAYG):	A method of financing a benefits plan under which the contributions to the plan are generally made at about the same time and in about the same amount as benefit payments and expenses becoming due.
Plan Liabilities:	Obligations payable by the plan at the reporting date, including, primarily, benefits and refunds due and payable to plan members and beneficiaries, and accrued investment and administrative expenses. Plan liabilities do not include actuarial accrued liabilities for benefits that are not due and payable at the reporting date.
Plan Members:	The individuals covered by the terms of a benefit plan. The plan membership generally includes employees in active service, terminated employees who have accumulated benefits but are not yet receiving them, and retired employees and beneficiaries currently receiving benefits.
Post-employment:	The period between termination of employment and retirement as well as the period after retirement.
Projected Unit Credit Cost Method	An actuarial cost method that spreads the employee's benefit over their career, as a level percentage of service. The normal cost is the present value of the portion of the benefit assigned to the current year. The actuarial accrued liability is the accumulated value of all past normal cost, and the unfunded accrued liability (surplus) is the excess of the AAL over the value of assets.
Salary Improvement:	An actuarial assumption regarding the increase in employees' salaries, reflecting cost-of-living, merit and longevity increases.
SFFAS 5	Statement of Federal Financial Accounting Standard No. 5 is the accounting standard that governs accounting for pension plans sponsored by the Federal Government or agencies of the Federal Government.
SFFAS 33	Statement of Federal Financial Accounting Standard No. 33 updated SFFAS 5, requiring revisions to the discount rates used as well as recognition of gains and losses.
Total Normal Cost	The portion of the present value of the projected benefits allocated to the valuation year is called the normal cost. The Total Normal Cost includes the portion funded by employee contributions and may include plan expenses.

APPENDIX

Actuarial Certification

This actuarial valuation sets forth our calculation of an estimate of the liabilities of the United States Department of the Treasury for the District of Columbia Pension Plans, together with a comparison of these liabilities with the value of the plan assets, as submitted by the Department of the Treasury. This calculation and comparison with assets is applicable for the valuation date only. The future is uncertain, and the Plan may become better funded or more poorly funded in the future. This valuation does not provide any guarantee that the Plan will be able to provide the promised benefits in the future.

This is a deterministic valuation in that it is based on a single set of assumptions. This set of assumptions is one possible basis for our calculations. Other assumptions may be equally valid. The future is uncertain and the Plan's actual experience will differ from those assumptions; these differences may be significant or material because these results are very sensitive to the assumptions made and, in some cases, to the interaction between the assumptions. We may consider that some factors are not material to the valuation of the Plan and may not provide a specific assumption for those factors. We may have used other assumptions in the past. We will likely consider changes in assumptions at a future date. We note that we were provided the economic assumptions, including those related to discounting of future payments and increases in the amount of benefits and salary due to inflation.

Different assumptions or scenarios within the range of possibilities may also be reasonable and results based on those assumptions would be different. As a result of the uncertainty inherent in a forward looking projection over a very long period of time, no one projection is uniquely "correct" and many alternative projections of the future could also be regarded as reasonable. Two different actuaries could, quite reasonably, arrive at different results based on the same data and different views of the future. A "sensitivity analysis" shows the degree to which results would be different if you substitute alternative assumptions within the range of possibilities for those utilized in this report. We have not been engaged to perform such a sensitivity analysis and thus the results of such an analysis are not included in this report. At the United States Department of the Treasury's request, Bolton Partners, Inc. is available to perform such a sensitivity analysis.

Demographic assumptions used are based on the last experience study, as adopted by the Department of the Treasury. The Department of the Treasury is responsible for selecting the Plan's economic assumptions. The policies, methods, and assumptions used in this valuation are those that have been so prescribed and are described in Sections 5 and 6. The Department of the Treasury is solely responsible for communicating to Bolton Partners, Inc. any changes required thereto.

A change in assumptions does not indicate that the prior assumptions were invalid. At the time the prior assumptions were chosen, they represented the best estimate of the future experience of the Plan. If we change assumptions in the future, it would be to align the assumptions with our then-current best estimate.

Actuarial Certification (cont.)

The Department of the Treasury could reasonably ask how the valuation would change if we used a different assumption set or if Plan experience exhibited variations from our assumptions. This report does not contain such an analysis. This type of analysis would be a separate assignment.

The cost of the Plan is determined by the benefits promised by the Plan, the Plan's participant population, the investment experience of the Plan and many other factors. An actuarial valuation is a budgeting tool for the Department of the Treasury. It does not affect the cost of the Plan. Different funding methods provide for different timing of contributions to the Plan. As the experience of the Plan evolves, it is normal for the level of contributions to the Plan to change. If a contribution is not made for a particular year, either by deliberate choice or because of an error in a calculation, that contribution can be made in later years. We will not be responsible for contributions that are made at a future time rather than an earlier time. The Plan's sponsor is responsible for funding the cost of the Plan.

We make every effort to ensure that our calculations are accurately performed. These calculations are complex. Despite our best efforts, we may make a mistake. We reserve the right to correct any potential errors by amending the results of this report or by including the corrections in a future valuation report.

Because modeling all aspects of a situation is not possible or practical, we may use summary information, estimates, or simplifications of calculations to facilitate the modeling of future events in an efficient and cost-effective manner. We may also exclude factors or data that are immaterial in our judgment. Use of such simplifying techniques does not, in our judgment, affect the reasonableness of valuation results for the Plan.

This report is based on the Plan's provisions, census data, and asset data submitted by the Department of the Treasury. Census data as of June 1, 2015 has been used for this October 1, 2015 valuation in order to expedite completion of the valuation. We did receive August 1, 2015 census data updates for the Judges' Plan only, so the census data for judges is as of August 1, 2015. In addition, we received information (in an email dated September 4, 2015) regarding corrections expected to be made to the benefit payment amounts for about 47 retirees. While these current benefit amounts have not yet been changed, we reflected the revised amounts in this valuation. No other significant events are known to have occurred during the period June 1, 2015 through October 1, 2015 which would have materially altered the census data or the valuation results presented in this report. We have relied on this information for purposes of preparing this report, but have not performed an audit. The accuracy of the results presented in this report is dependent upon the accuracy and completeness of the underlying information. The Department of the Treasury is solely responsible for the validity and completeness of this information.

We have discussed in the report all assumptions, estimates and methodologies used in our calculations. We have valued all benefits, except those specifically noted as having not been valued. We believe that these methods and assumptions (including the estimates used) are appropriate for the purpose of the report and reasonable when considered within that purpose.

The Department of the Treasury is solely responsible for selecting the Plan's investment policies, asset allocations and individual investments. Bolton Partners, Inc.'s actuaries have not provided any investment advice to the Department of the Treasury.

Actuarial Certification (cont.)

The information in this report was prepared for the internal use of the Department of the Treasury and its auditors in connection with our actuarial valuations of the Plan. It is neither intended nor necessarily suitable for other purposes. Bolton Partners, Inc. is not responsible for the consequences of any other use.

The only purposes of this report are to:

- Provide the Department of the Treasury contribution rates for the fiscal year beginning October 1, 2015.
- Present Bolton Partners, Inc.'s actuarial estimates of the Plan's liabilities for the Department of the Treasury to incorporate, as the Department of the Treasury deems appropriate, in its financial statements.

This report may not be used for any other purpose; Bolton Partners, Inc. is not responsible for the consequences of any unauthorized use.

The calculation of actuarial liabilities for valuation purposes is based on a current estimate of future benefit payments. The calculation includes a computation of the "present value" of those estimated future benefit payments using an assumed discount rate; the higher the discount rate assumption, the lower the estimated liability will be. For purposes of estimating the liabilities (future and accrued) in this report, the Department of the Treasury selected an investment return and discount rate assumption based on historical averaged of interest rates. Using a higher discount rate assumption, such as a rate based on other types of investments (which may not be allowed by federal regulation), could substantially decrease the estimated present value of future and accrued liabilities.

Because valuations are a snapshot in time and are based on estimates and assumptions that are not precise and will differ from actual experience, contribution calculations are inherently imprecise. There is no uniquely "correct" level of contributions for the coming plan year.

This report provides certain financial calculations for use by the auditor. These values have been computed in accordance with generally accepted actuarial principles and practices and fairly reflect the actuarial position of the Plan. The various actuarial assumptions and methods which have been used are, in our opinion, appropriate for the purposes of this report.

Actuarial Certification (cont.)

The report is conditioned on the assumption of an ongoing plan and is not meant to present the actuarial position of the Plan in the case of plan termination. Future actuarial measurements may differ significantly from the current measurements 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 (such as the end of an amortization period or additional cost or contribution requirements based on the Plan's funded status), and changes in plan provisions or applicable law.

The Department of Treasury should notify Bolton Partners, Inc. promptly after receipt of this report if the Department of the Treasury disagrees with anything contained in the report or is aware of any information that would affect the results of the report that has not been communicated to Bolton Partners, Inc. or incorporated therein. The report will be deemed final and acceptable to the Department of the Treasury unless the Department of the Treasury promptly provides such notice to Bolton Partners, Inc.

The undersigned credentialed actuaries meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. They are currently compliant with the Continuing Professional Development Requirement of the Society of Actuaries. We are not aware of any direct or material indirect financial interest or relationship, including investments or other services that could create a conflict of interest that would impair the objectivity of our work.

We are available to answer any questions on the material in this report to provide explanations or further details as appropriate.

Bolton Partners, Inc.

Colin England

Colin England, FSA, EA

Thomas Lowman, FSA, EA