

**Fairfax County Employees'
Retirement System**

**Actuarial Valuation
as of July 1, 2014**

Produced by **Cheiron**

February 2015

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February xx, 2015

Board of Trustees
Fairfax County Employees'
Retirement System
10680 Main Street, Suite 280
Fairfax, Virginia 22030-3812

**Re: *Fairfax County Employees' Retirement System
Actuarial Valuation as of July 1, 2014***

Dear Members of the Board:

At your request, we have conducted our annual actuarial valuation of the Fairfax County Employees' Retirement System as of July 1, 2014. The results of the valuation are contained in this report. The purpose of this report is to present the annual actuarial valuation of the Fairfax County Employees' Retirement System. This report is for the use of the Fairfax County Employees' Retirement System Board of Trustees and its auditors in preparing financial reports in accordance with applicable law and accounting requirements.

Your attention is called to the Foreword in which we refer to the general approach employed in the preparation of this report. We also comment on the sources and reliability of both the data and the actuarial assumptions on which our findings are based. Those comments are the basis for our certification that this report is complete to the best of our knowledge and belief. The results of this report are only applicable to the employer contribution for Fiscal Year 2016 and rely on future plan experience conforming to the underlying assumptions. To the extent that actual plan experience deviates from the underlying assumptions, the results would vary accordingly.

In preparing our report, we relied on information (some oral and some written) supplied by the Retirement System. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standards of Practice Number 23.

This report was prepared exclusively for the Fairfax County Employees' Retirement System for the purpose described herein. This report is not intended to benefit any third party, and Cheiron assumes no duty or liability to any such party.



Board of Trustees
Fairfax County Employees' Retirement System
February xx, 2015

We hereby certify that, to the best of our knowledge, this report and its contents, have been prepared in accordance with generally recognized and accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board. Furthermore, as credentialed actuaries, we meet the Qualification Standards of the American Academy of Actuaries to render the opinions contained in this report. This report does not address any contractual or legal issues. We are not attorneys and our firm does not provide any legal services or advice.

Sincerely,
Cheiron

Fiona E. Liston, FSA, EA
Principal Consulting Actuary

Christian E. Benjaminson, FSA, EA
Principal Consulting Actuary

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FOREWORD

Cheiron has performed the actuarial valuation of the Fairfax County Employees' Retirement System as of July 1, 2014. The purpose of this report is to:

- 1) **Measure and disclose**, as of the valuation date, the financial condition of the System;
- 2) **Indicate trends** in the financial progress of the System;
- 3) **Determine the contribution rate** to be paid by the employer for Fiscal Year 2016; and
- 4) **Provide specific information** and documentation required by the Governmental Accounting Standards Board (GASB).

An actuarial valuation establishes and analyzes system assets and liabilities on a consistent basis and traces the progress of both from one year to the next. It includes measurement of the system's investment performance as well as an analysis of actuarial liability gains and losses.

Section I presents a summary containing our findings and disclosing important trends experienced by the System in recent years.

Section II contains details on various asset measures, together with pertinent performance measurements.

Section III shows similar information on system liabilities, measured for actuarial, accounting, and governmental reporting purposes.

Section IV develops the employer contribution rate, determined using actuarial techniques, and compares that to the rate developed using the corridor method of funding.

Section V includes the required disclosures under GASB Statement Number 67.

The appendices to this report contain a summary of the System's membership at the valuation date, a summary of the major provisions of the System, and the actuarial methods and assumptions used in the valuations.

In preparing our report, we relied on information (some oral and some written) supplied by the System's staff. This information includes, but is not limited to, plan provisions, employee data, and financial information. We performed an informal examination of the obvious characteristics of the data for reasonableness and consistency in accordance with Actuarial Standard of Practice Number 23.

The actuarial assumptions reflect our understanding of the likely future experience of the System, and the assumptions taken individually represent our best estimate for the future experience of the System. The results of this report are dependent upon future experience conforming to these assumptions. To the extent that future experience deviates from the actuarial assumptions, the true cost of the System could vary from our results.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

FOREWORD

Finally, in preparing this report, we have conformed to generally accepted actuarial principles and practices which are consistent with the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board.

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**SECTION I
BOARD SUMMARY**

General Comments

The employer's annual contribution to this System is determined by using a corridor funding method. Under this funding approach, the employer contribution rate is based on the normal cost rate plus expense rate determined as of the implementation date of the corridor method (July 1, 2001) 5.85% of payroll plus an expense rate, currently 0.20% of payroll. This rate is adjusted for benefit and assumption changes and the normal cost is redetermined each year according to the entry age normal cost method.

The employer contribution rate will change when benefits are increased or modified or assumptions are changed. The new rate will reflect the change in normal cost rate and the change in actuarial liability amortized over 15 years. The changes in the UAL rate are summarized in Section IV. The normal cost rate and actuarial accrued liability will continue to be measured using the entry age funding method. If the corridor funded status falls outside the corridor, a credit (if above 120%) or charge (if below 90%) will be established based on a rolling 15-year amortization equal to the amount necessary to re-enter the corridor. The County is taking steps to increase the 90% corridor floor to 100%. Once this threshold is reached, the 15 year periods will become closed 15 year layers.

The employer contribution rate for FY 2016 as calculated under this method increases from 18.32% to 18.71% of payroll, on the basis of this year's valuation results. The County's FY 2015 contribution was actually based on a 93% corridor floor and for FY 2016, we have provided numbers for a 94% and 95% floor. On that basis, the contribution in FY 2015 was 20.15% and for FY 2016 it will be either 21.33% or 21.99%.

This valuation reflects a change in both liabilities and assets due to assumption changes. The liability is higher by \$159 million due to a change in the entry age normal cost method, the termination rates, and the sick leave assumption. As a partial offset to this liability impact, the smoothed value of assets includes an additional recognition of \$75 million of the remaining balance of past investment gains.

This valuation contains information reported in the June 30, 2014 Comprehensive Annual Financial Report (CAFR) of the System under the new GASB Statement No. 67. Disclosures are based on the use of updated procedures to roll forward the 2013 valuation results. The 2013 starting point is higher than the funding numbers from 2013 since the change in the assumptions and methods was included in the 2013 liabilities. The calculation of Net Pension Liability in Section V is shown as disclosed for the plan year June 30, 2014 and we also present a projection of the June 30, 2015 disclosure if all actuarial assumptions are met over the coming year.

Trends

The System outperformed the investment assumption during the fiscal year ending in 2014, causing an actuarial gain on the asset side of the System. The actual return on a market value basis was approximately 14.79%. On an actuarial value basis, the assets returned 10.89%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION I
BOARD SUMMARY**

compared with an assumed rate of return of 7.5%. The investment gain recognized for funding purposes was \$113.5 million.

The measurement of liabilities produced a gain this year in the amount of \$3.4 million. This gain was due to experience not meeting our assumptions about salary increases, retirement behavior, death, etc. Specific components of the loss include:

- The average salary increase was 4.0% for active participants who were in both the July 1, 2013 and July 1, 2014 valuations. This was less than the expected salary growth based on the actuarial assumption, which worked out to average 4.9%. This resulted in a gain of \$26.4 million. The annual payroll was provided as of December 31, 2013 and adjusted to July 1, 2014. For County employees this included the 2.29% increase as of July 1, 2014. For School employees this included annualizing the 2.00% increase as of January 1, 2014.
- The valuation assumed a 2.75% cost-of-living adjustment in 2013 for benefits in pay status. The actual CPI-based COLA was 1.6% last year, creating a liability gain of \$25.0 million.
- The 2014 valuation incorporates actual sick leave hours into both eligibility and projected benefits for active participants. The 2014 valuation is the first to include a projection of future sick leave accruals. The accrual of additional sick leave from 2013 to 2014 resulted in a loss of \$6.2 million.
- An annual component of liability loss is the delayed recognition of new hires throughout the year. This does not contribute to an increase in the System's unfunded liability because both the member and the employer make contributions from the date of hire. However, when we look only at the liability side, they are a component of the annual liability loss. This year, they account for a \$3.4 million loss.
- There was a \$46.8 million liability loss component that is made up of various other causes such as members terminating, retiring, dying or becoming disabled in a way contrary to the assumption.

The combination of liability and investment experience and County plus member contributions over the last year led to the System's funding ratio (actuarial value of assets over actuarial accrued liability) increasing from 72.9% at July 1, 2013 to 75.3% at July 1, 2014. For purposes of measuring whether the System remains within the funding corridor, an adjusted funding ratio is used. In this ratio, there is an additional asset recognized in the amount of the unfunded actuarial liability (UAL) payments being made by the County to pay for benefit increases and assumption changes. On this basis, the System's actuarial funded ratio increased from 74.2% at July 1, 2013 to 78.2% at July 1, 2014.

It is important to take a step back from the latest results and view them in the context of the System's recent history. On the next two pages, we present a series of charts which display key factors in the valuations over the last 15 years. After the historical review, we present a few

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION I
BOARD SUMMARY**

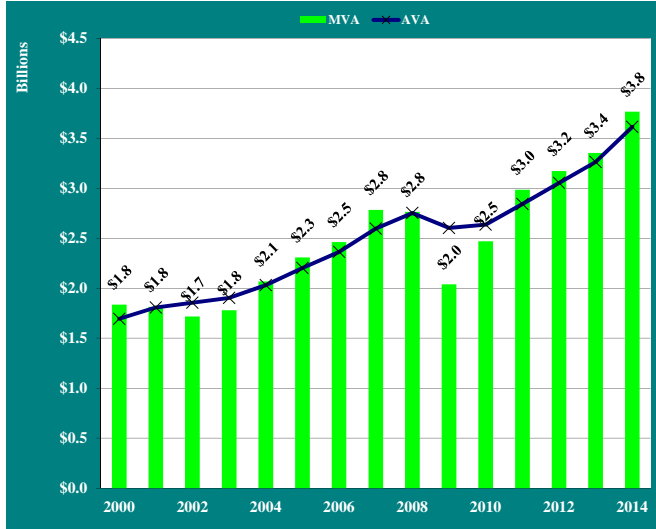
projection graphs, showing the possible condition of the System over the next 15 years under various market return scenarios.

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**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION I
BOARD SUMMARY**

Growth in Assets

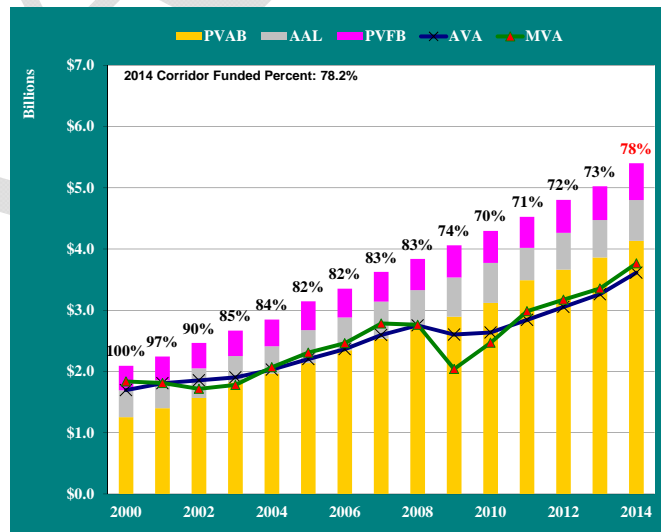


There was an increase in the market value of assets (MVA) over last year due to a return of 14.8%. The actuarial value of assets (AVA) increased due to the continued recognition of recent asset gains. For the 2014 valuation, the System recognized an additional \$75 million of stored asset gains in order to reduce the total unfunded liability based on the actuarial value of assets. The System still has \$92 million in unrecognized gains that will be phased in over the next few years.

Over the period July 1, 2000 to June 30, 2014, the System's assets returned approximately 7.2% per year measured at actuarial value, which is in line the valuation assumption of 7.5% per year.

Assets and Liabilities

The three colored bars represent the three different measures of liability mentioned in this report. The amount represented by the top of the pink bars, the present value of future benefits (PVFB), is the amount needed to provide all benefits for the current participants and their beneficiaries. If the System had assets equal to the PVFB, no contributions would, in theory, be needed for the current members. For funding purposes, the target amount is represented by the top of the gray bar. Through the 2013 valuation, we compare the actuarial value of assets to this measure of liability in developing the funded percent. Starting in 2014, the comparison uses the market value of assets. These are the percentages shown in the graph labels.

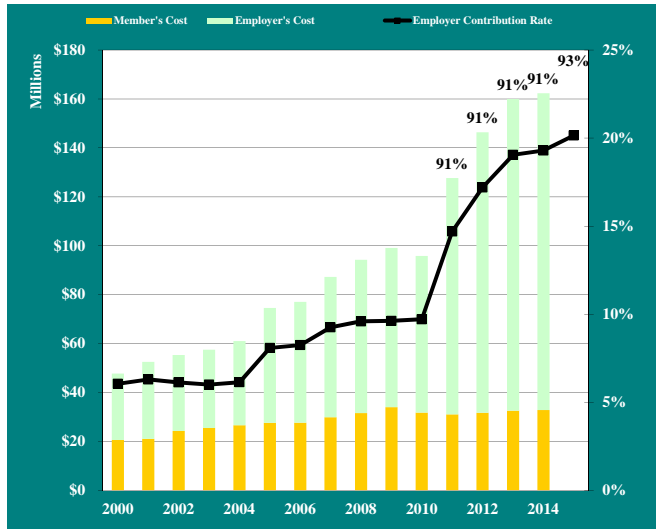


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION I
BOARD SUMMARY**

Contribution Rates

The stacked bars in this graph show the contributions made by both the County and the members (left hand scale). The black line shows the County contribution rate as a percent of payroll (right hand scale).

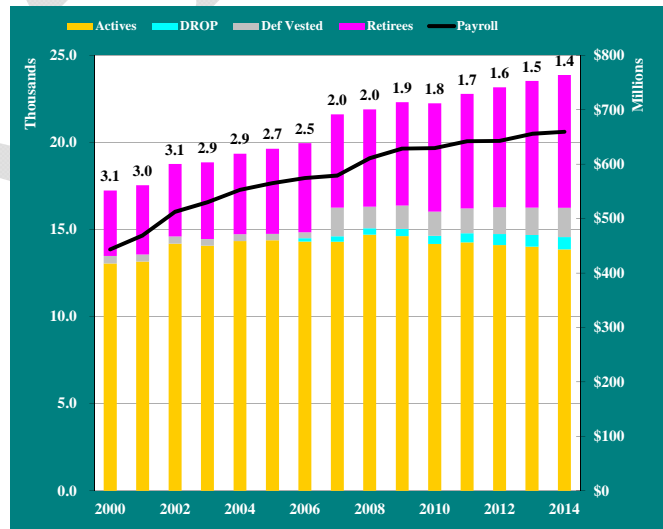


The member contribution rate is set by the County Ordinance. The County contribution rate is set by the actuarial process, as constrained by the corridor method. Note there is a lag in the rate shown. For example, the 2014 value is the rate prepared by the 2012 valuation and implemented for the period July 1, 2013 to June 30, 2014.

Participant Trends

As with many funds in this country, there has been a steady growth in the number of retired members as the System has matured. The active-to-inactive ratio has decreased from 3.1 actives to each inactive in 2000 to 1.4 actives for each inactive today. While this would be an alarming trend in a pay-as-you-go system, the pool of invested assets has been established in anticipation of this development.

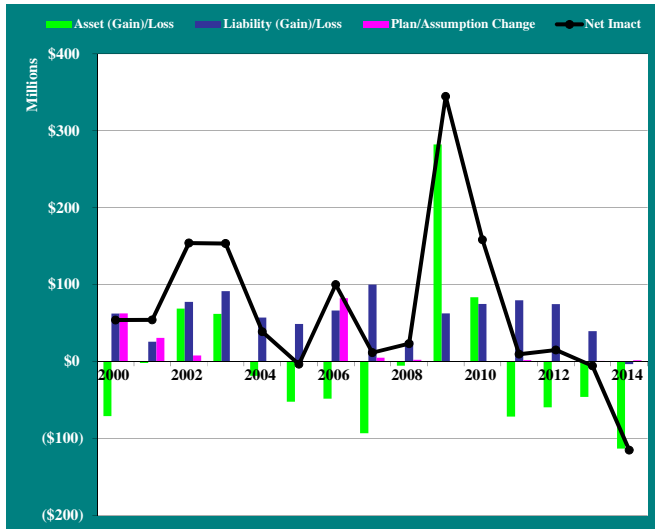
Starting in 2006, the chart also shows the number of DROP participants. Neither employer nor member contributions are made on their behalf, which leads to a slightly lower growth in effective covered payroll for this System.



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
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**SECTION I
BOARD SUMMARY**

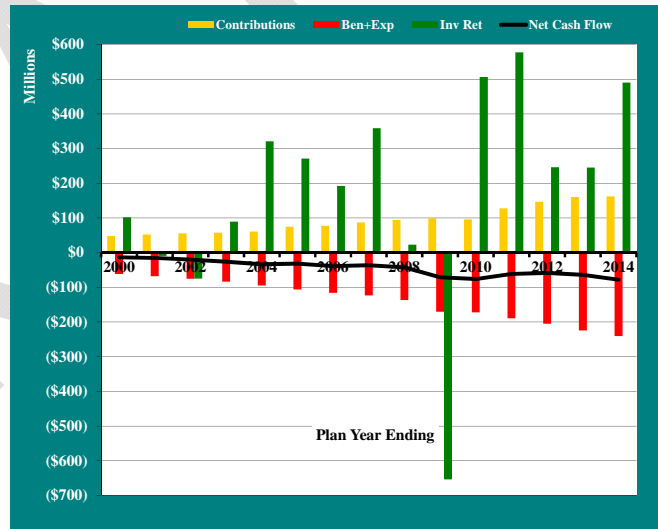
Gains and Losses



This graph shows the annual gains and losses experienced by the System, along with the change in unfunded actuarial liability (UAL) due to plan amendments and changes in assumptions. The black line shows the net impact of all such changes in a given year. Positive numbers represent increases in the UAL, while negative numbers show reductions.

Cash Flow

The graph shows the annual cash flows into and out of the System. The graph shows the magnitude of the investment returns on the market value (green bars) compared to the contributions (yellow bars). The net cash flow (line) is comparing the contributions to benefits and expenses (red bar). Negative cash flow is expected for a mature plan such as this one. The implications of a plan with negative cash flow are that the impact of market fluctuations can be more severe. This is because as assets are being depleted to pay benefits in down markets, less principal is available to be reinvested during periods of favorable returns.



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
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**SECTION I
BOARD SUMMARY**

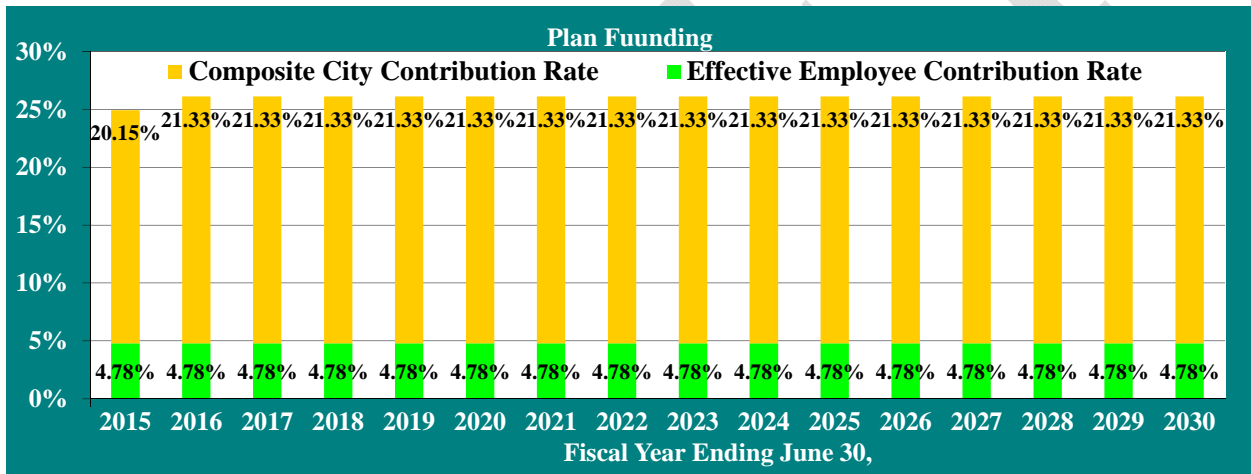
Future Outlook

Base-line Projections

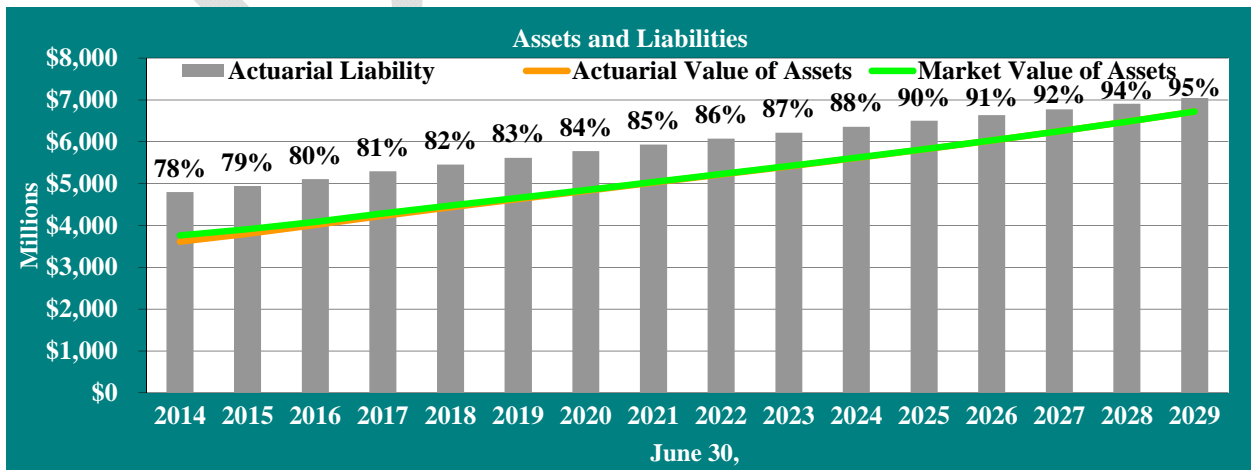
The two graphs below show the expected progress of the System over the next 15 years, assuming the System's assets earn 7.5% on their *market value*.

While the County's written policy is to contribute to 90% of the corridor, for FY 2015, the County actually plans to contribute an amount to get to 93% funding based on the corridor method. In FY 2016, the amortization target will increase to 94% and continue increasing each year until the amortization target is 100%. In addition to the increasing corridor floor, the County does not intend to reduce the contribution rate until the System is 100% funded.

The graph entitled "Plan Funding" shows the contribution rates remaining at the 21.33% level throughout the projection period.



The "Assets and Liabilities" graph shows the projected funding status over the next 15 years. The funded ratio gradually increases for the entire projection period ultimately reaching 95% funded as of 2029.



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The future funding status of this System will be influenced by the investment earnings. The prior projection assumed the System would earn 7.5% each and every year, which is extremely unlikely.

In the projections that follow, we show the risk to the System under volatile markets. Since 1980, the System has averaged a 10.4% return per year. In the following charts, we show results assuming returns over the next 15 years average 5.0%, 7.5%, and 10.0%. Different patterns of returns will produce different results from those shown here.

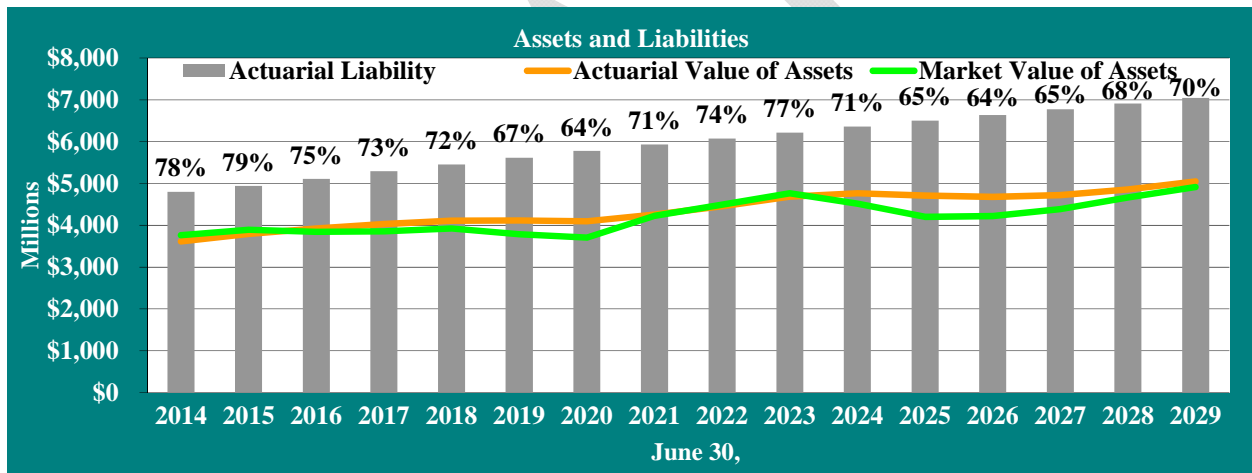
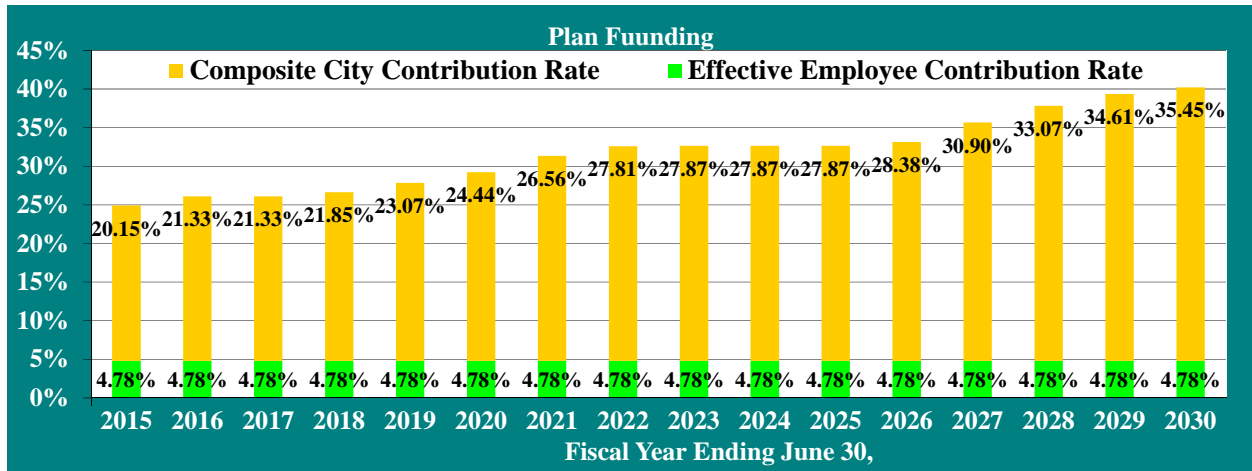
Fiscal Year Ending June 30,	Average 5.0%	Average 7.5%	Average 10.0%
2014	7.67%	2.34%	-5.85%
2015	7.05	7.17	4.54
2016	1.67	17.72	18.15
2017	2.98	30.01	32.56
2018	5.16	19.42	-8.98
2019	-0.19	5.61	12.47
2020	1.48	11.03	17.81
2021	17.59	4.30	-13.95
2022	9.50	15.60	15.19
2023	9.25	-0.44	14.83
2024	-2.11	2.05	28.45
2025	-3.75	-8.37	24.92
2026	4.20	4.65	3.95
2027	7.27	-0.59	7.37
2028	9.17	7.83	10.22
Average	5.00%	7.50%	10.00%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION I
BOARD SUMMARY**

Alternative Projection -- with average return of 5.0% in the period

Under this scenario, the corridor contribution rate drastically increases from 20% to 35% of pay. The System funding drops to 64%, even with the ramping up of contributions.

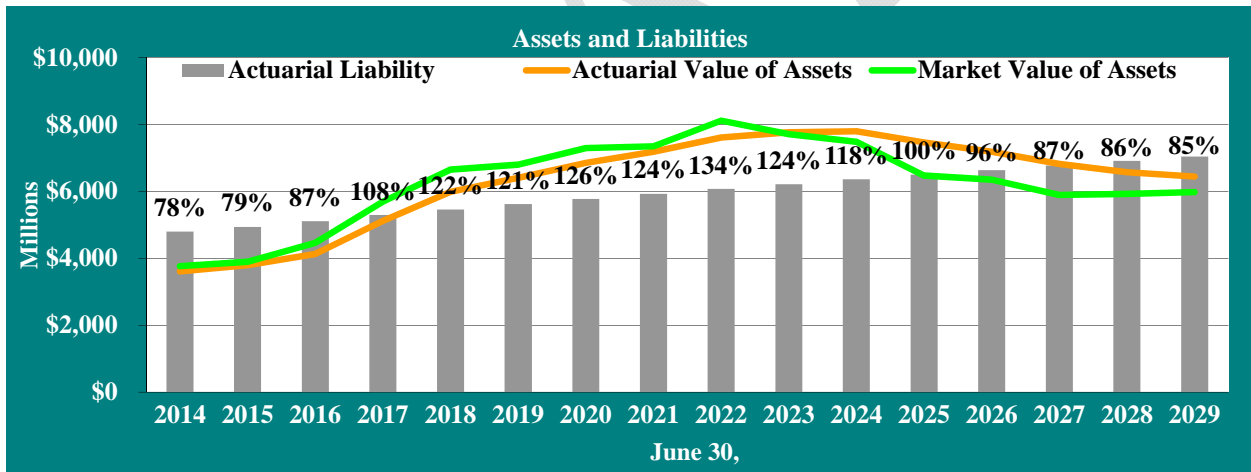
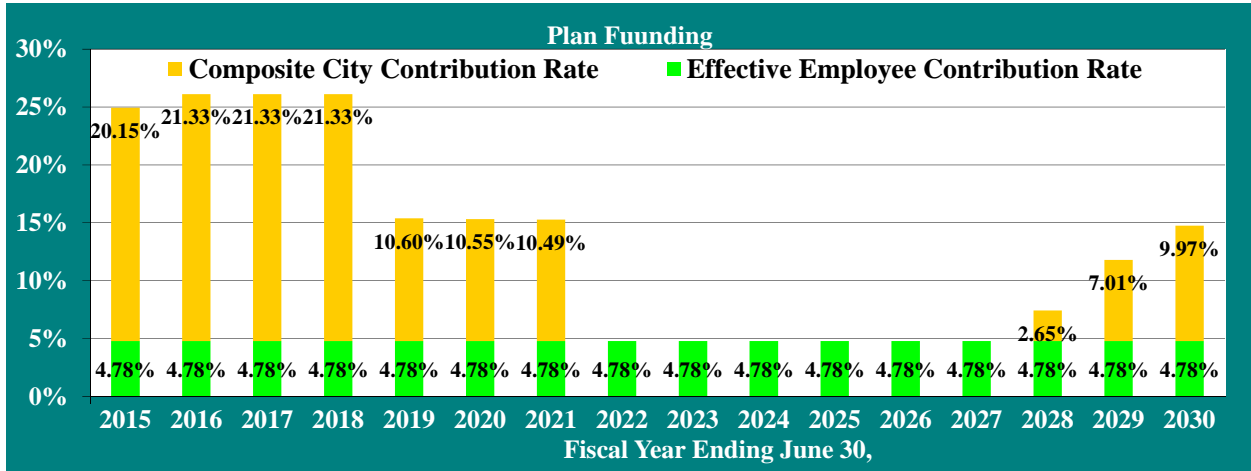


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION I
BOARD SUMMARY**

Alternative Projection – with average return of 7.5% in the period

Under this scenario, in which the System is assumed to enjoy higher than average returns in the first few years, the corridor contribution rate remains at 21.33% until the System reaches full funding in 2017. After that time, the contribution drops dramatically as returns continue to push the funded percent over the 120% top of the corridor.

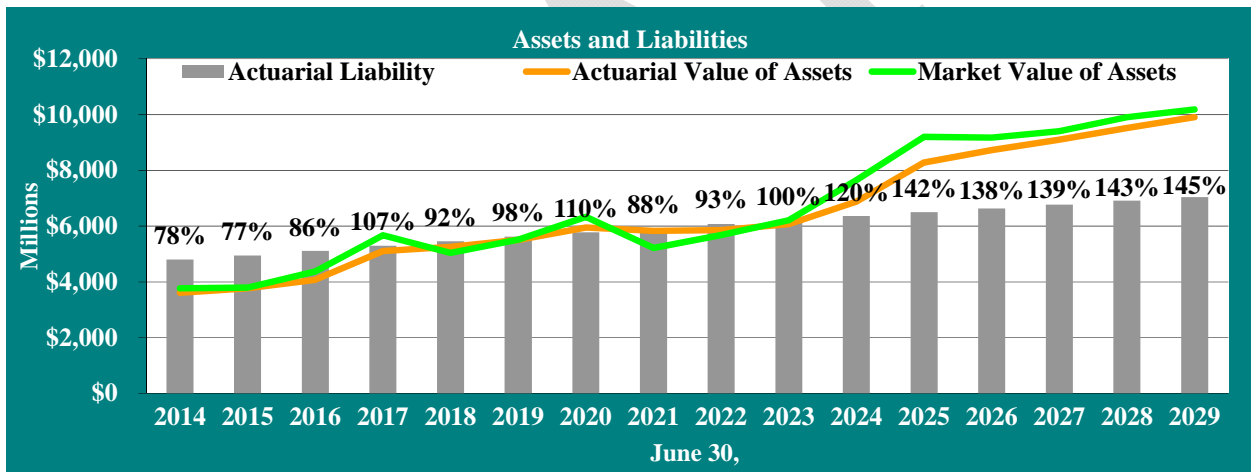
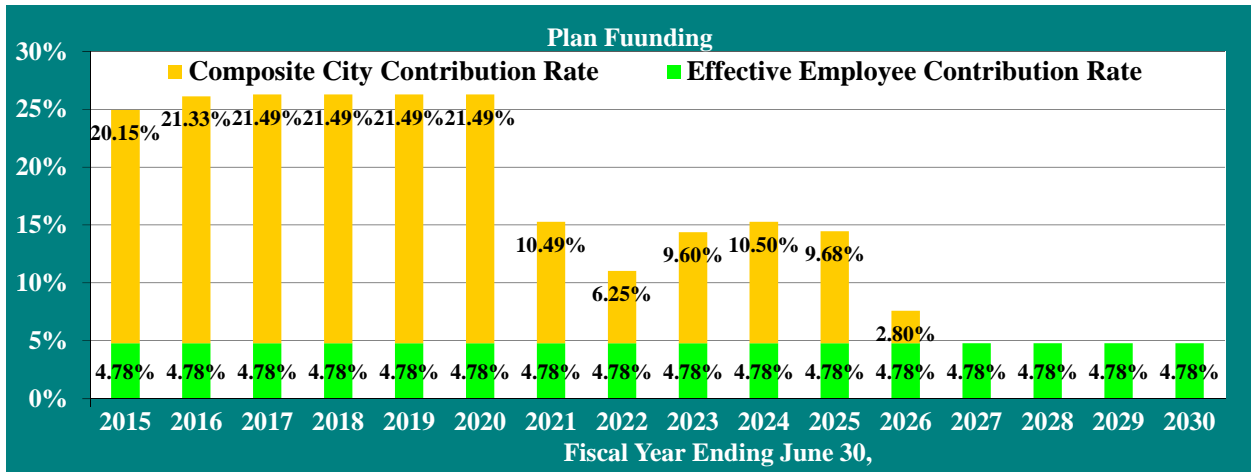


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION I
BOARD SUMMARY**

Alternative Projection -- with average return of 10.0% in the period

Under this scenario, in which the System is assumed to face lower returns in the first two years but significantly higher returns thereafter, the corridor contribution rate ticks up at first before dropping off once the System reaches 100% funding.



FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

SECTION I
BOARD SUMMARY

Table I-2			
Summary of Principal Plan Results			
Valuation as of:	7/1/2013	7/1/2014	% Chg
<u>Participant Counts</u>			
Actives (excluding DROP)	14,011	13,862	-1.1%
DROPs	670	705	5.2%
Terminated Vesteds	1,576	1,677	6.4%
In Pay Status	<u>7,263</u>	<u>7,626</u>	5.0%
Total	23,520	23,870	1.5%
Annual Salaries of Active Members	\$ 655,612,800	\$ 659,360,128	0.6%
Annual Retirement Allowances for Retired Members and Beneficiaries (Base amount only – not supplements)	\$ 173,400,323	\$ 185,919,600	7.2%
<u>Assets and Liabilities</u>			
Actuarial Accrued Liability	\$ 4,473,830,654	\$ 4,800,719,770	7.3%
Assets for Valuation Purposes	<u>3,261,923,577</u>	<u>3,614,067,515</u>	10.8%
Unfunded Actuarial Liability	\$ 1,211,907,077	\$ 1,186,652,255	-2.1%
Funding Ratio	72.9%	75.3%	
Present Value of Accrued Benefits	\$ 3,862,092,452	\$ 4,133,674,068	7.0%
Market Value of Assets	<u>3,353,932,103</u>	<u>3,766,059,665</u>	12.3%
Unfunded Accrued Liability (not less than \$0)	\$ 508,160,349	\$ 367,614,403	-27.7%
Accrued Benefit Funding Ratio	86.8%	91.1%	
<u>Contributions as a Percentage of Payroll</u>			
Corridor Method:			
Normal Cost Contribution	6.91%	8.06%	
Increase Due to Amortized Changes	1.50%	2.67%	
Administrative Expense	<u>0.20%</u>	<u>0.20%</u>	
Base Rate	8.61%	10.93%	
Amortize to 93%	20.15%	20.68%	
Amortize to 94%	20.77%	21.33%	
Amortize to 95%	21.38%	21.99%	

SECTION II
ASSETS

Pension system assets play a key role in the financial operation of the System and in the decisions the Trustees may make with respect to future deployment of those assets. The level of assets, the allocation of assets among asset classes, and the methodology used to measure assets will likely impact upon benefit levels, employer contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on system assets including:

- **Disclosure** of system assets at July 1, 2013 and July 1, 2014;
- Statement of the **changes** in market values during the year;
- Development of the **actuarial value of assets**;
- An assessment of **investment performance**; and
- A projection of the System's expected **cash flows** for the next ten years.

Disclosure

The market value of assets represents "snap-shot or cash-out" values which provide the principal basis for measuring financial performance from one year to the next. Market values, however, can fluctuate widely with corresponding swings in the marketplace. As a result, market values are usually not suitable for long-range planning.

The actuarial values are market values which have been smoothed; they are used for evaluating the System's ongoing liability to meet its obligations.

Current methods employed by this System set the actuarial value equal to the expected value plus 33 $\frac{1}{3}$ % of the difference between the expected value of assets and the actual market value, where the expected value is equal to the prior year's actuarial value, rolled forward with actual contributions, benefit payments, and administrative expenses plus interest imputed at 7.5%.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

**SECTION II
ASSETS**

Table II-1		
Statement of Assets at Market Value		
	7/1/2013	7/1/2014
<u>Assets</u>		
Equity in County's Pooled Cash,		
Contributions Receivable and Other Assets	\$ 9,969,265	\$ 9,164,486
Accrued Interest and Dividends Receivable	2,671,225	10,981,723
Receivable from Sale of Investments	100,888,110	147,544,558
US Government Obligations	95,082,751	105,724,824
Asset-Backed Securities	208,141,967	176,859,179
Other Bonds and Notes	493,803,311	617,265,299
Common and Preferred Stock	1,142,772,251	1,418,927,394
Pooled and Mutual Funds	1,118,222,065	1,317,019,458
Short-Term Investments	323,460,170	135,148,368
Cash Collateral Received Under		
Securities Lending Agreements	<u>56,267,223</u>	<u>39,803,388</u>
Total Assets	\$ 3,551,278,338	\$ 3,978,438,677
<u>Liabilities</u>		
Payable for Collateral Received Under		
Securities Lending Agreements	\$ 56,267,223	\$ 39,803,388
Payable for Purchase of Investments	134,509,317	165,763,981
Accounts Payable and Accrued Expenses	<u>6,569,695</u>	<u>6,811,643</u>
Total Liabilities	\$ 197,346,235	\$ 212,379,012
Net Assets Available for Benefits	\$ 3,353,932,103	\$ 3,766,059,665

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

**SECTION II
ASSETS**

Table II-2		
Changes in Market Values		
Value of Assets – July 1, 2013		\$ 3,353,932,103
<u>Additions</u>		
Contributions:		
Employer Contributions	\$ 129,618,309	
Employee Contributions	<u>32,758,587</u>	
Total Contributions		\$ 162,376,896
Investment Income:		
Net Appreciation (Depreciation) in Fair Value of Investments	\$ 406,152,719	
Interest	65,434,731	
Dividends	<u>31,024,328</u>	
Total Investment Income	\$ 502,611,778	
Investment Activity Expenses:		
Management Fees	\$ (11,754,030)	
Custodian Fees	(127,836)	
Consulting Expense	(71,387)	
Allocated Administrative Expenses	<u>(869,342)</u>	
Total Investment Activity Expenses	\$ (12,822,595)	
From Securities Lending Activities:		
Securities Lending Income	\$ 620,513	
Securities Lending Expenses		
Borrowers Rebates	0	
Management Fees	<u>(213,310)</u>	
Net Income from Securities Lending Activities	\$ 407,203	
Net Investment Income		\$ 490,196,386
Total Additions		<u>\$ 652,573,282</u>
<u>Deductions</u>		
Annuity Benefits	\$ (222,547,552)	
Disability Benefits	(7,828,824)	
Survivor Benefits	(4,828,235)	
Refunds and Other Expenses	(3,356,282)	
Administrative Expenses	<u>(1,884,827)</u>	
Total Deductions		<u>\$ (240,445,720)</u>
<u>Total</u>		
Net Increase (Decrease)		<u>\$ 412,127,562</u>
Value of Assets – July 1, 2014		\$ 3,766,059,665

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION II
ASSETS**

Actuarial Value of Assets

The actuarial value of assets represents a “smoothed” value developed by the actuary to reduce, or eliminate, erratic results which could develop from short-term fluctuations in the market value of assets. For this System, the actuarial value has been calculated by adding 33⅓% of the difference between market value and expected value to the expected value. The actuarial value of assets in this July 1, 2014 also recognizes an additional amount of past deferred gains in order to offset the increase in liability caused by changes in assumptions and methods. The following table illustrates the calculation of actuarial value of assets for the July 1, 2014 valuation.

Table II-3 Development of Actuarial Value of Assets as of July 1, 2014		
1.	Actuarial Value of Assets at July 1, 2013	\$ 3,261,923,577
2.	Amount in (1) with Interest to July 1, 2014	3,506,567,845
3.	Employer and Member Contributions for the Plan Year Ended June 30, 2014	162,376,896
4.	Interest on Contributions Assuming Received Uniformly Throughout the Year to July 1, 2014	6,089,134
5.	Disbursements from Trust Except Investment Expenses, July 1, 2013 Through June 30, 2014	(240,445,720)
6.	Interest on Disbursements Assuming Payments Made Uniformly Throughout the Year to July 1, 2014	(9,016,715)
7.	Expected Value of Asset at July 1, 2014 = (2) + (3) + (4) + (5) + (6)	3,425,571,440
8.	Market Value of Assets at July 1, 2014	<u>3,766,059,665</u>
9.	Excess of (8) Over (7)	\$ 340,488,225
10.	Additional Recognition of Past Deferred Gains	75,000,000
11.	Actuarial Value of Assets at July 1, 2014 = (7) + 33-1/3% of (9) + (10)	\$ 3,614,067,515

All interest adjustments are made using the 7½% per annum actuarial assumed interest rate.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION II
ASSETS**

Investment Performance

The market value of assets (MVA) returned 14.79% during 2014, which is greater than the assumed 7.50% return. A return of 10.89% on the actuarial value of assets (AVA) is primarily the result of the asset smoothing method being utilized for the calculation of the actuarial value of assets. Since only 33 $\frac{1}{3}$ % of the gain or loss from the performance of the System is recognized in a given year, in periods of very good performance, the AVA can lag significantly behind the MVA. In a period of negative returns, the AVA does not decline as rapidly as the MVA.

Year Ending June 30,	Market Value	Actuarial Value	Total Return Standard & Poor's 500 Index	Barclays Global Aggregate Index ¹
1990	8.6%	9.0%	16.4%	7.1%
1991	7.5%	9.1%	7.4%	10.2%
1992	14.4%	10.7%	13.5%	14.2%
1993	15.7%	11.7%	13.6%	13.2%
1994	5.8%	8.9%	1.3%	-1.5%
1995	13.1%	10.7%	26.1%	12.8%
1996	15.9%	25.0% ²	26.0%	4.7% ³
1997	20.1%	10.2%	34.7%	8.2%
1998	17.2%	7.7%	30.2%	10.5%
1999	8.5%	16.0%	22.8%	3.1%
2000	5.8%	12.2%	7.2%	4.6%
2001	-0.5%	7.6%	-14.8%	11.2%
2002	-4.2%	3.7%	-18.0%	8.6%
2003	5.2%	4.1%	0.3%	10.4%
2004	18.2%	8.5%	19.1%	0.3%
2005	13.2%	10.1%	6.3%	6.8%
2006	8.4%	9.7%	8.6%	-0.8%
2007	14.7%	11.5%	20.6%	6.1%
2008	0.8%	7.7%	-13.1%	7.1%
2009	-24.0%	-2.9%	-26.2%	5.5%
2010	25.3%	2.5%	14.4%	9.5%
2011	23.7%	10.3%	30.8%	3.9%
2012	8.3%	9.6%	5.4%	7.5%
2013	7.8%	9.0%	20.6%	-0.1%
2014	14.8%	10.9%	24.6%	4.4%

¹ Formerly the Lehman Global Aggregate Bond Index.

² The actuarial return in 1996 reflects the adjustment to a revised actuarial valuation method.

³ Figures shown prior to 1997 are Shearson Lehman Government/Corporate Bond Index.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION II
ASSETS**

Expected benefit payments are projected for the closed group valued at July 1, 2014. Projecting any farther than ten years using a closed group would not yield reliable predictions due to the omission of new hires.

Expected employer contributions are projected based on the current County contribution rate of 20.15% for FY 2015, and then using amortize to 93% rate for FY 2015, amortize to 94% FY 2016 and so on increasing to 100%. This projection assumes no further gains or losses, a 3% annual increase in the total covered payroll and models the anticipated impact of new hires coming in with altered plan provisions.

Table II-5		
Projection of System's Benefit Payments and County Contributions		
Year Beginning July 1,	Expected Benefit Payments ¹	Expected County Contributions
2014	\$ 297,304,000	\$ 132,861,000
2015	286,754,000	144,861,000
2016	282,021,000	149,207,000
2017	320,114,000	153,683,000
2018	337,684,000	158,293,000
2019	355,079,000	163,042,000
2020	372,770,000	167,933,000
2021	394,900,000	172,971,000
2022	412,631,000	178,160,000
2023	428,163,000	183,505,000

¹ Assumes assets in the inactive and suspense account are paid out in first year.

SECTION III LIABILITIES

In this section, we present detailed information on system liabilities including:

- **Disclosure** of system liabilities at July 1, 2013 and July 1, 2014;
- Statement of **changes** in these liabilities during the year; and
- A **projection** of future liabilities.

Disclosure

Several types of liabilities are calculated and presented in this report. Each type is distinguished by the people ultimately using the figures and the purpose for which they are using them.

- **Present Value of Benefits:** Used for analyzing the financial outlook of the System, this represents the amount of money needed today to fully pay off all future benefits and expenses of the System, assuming participants continue to accrue benefits.
- **Actuarial Accrued Liability:** Used for funding calculations and GASB disclosures, this liability is calculated taking the present value of benefits above and subtracting the present value of future member contributions and future employer normal costs under an acceptable actuarial funding method. This method is referred to as the **Entry Age Normal** funding method.
- **Present Value of Accrued Liabilities:** Used for communicating the current level of liabilities, this liability represents the total amount of money needed today to fully pay off the current accrued obligations of the System, assuming no future accruals of benefits. These liabilities are also required for accounting purposes (FASB ASC Topic 960) and used to assess whether the plan can meet its current benefit commitments.

The following table discloses each of these liabilities for the current and prior valuations. With respect to each disclosure, a subtraction of the appropriate value of system assets yields, for each respective type, a **net surplus** or an **unfunded liability**.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

**SECTION III
LIABILITIES**

Table III-1		
Liabilities/Net (Surplus)/Unfunded		
	July 1, 2013	July 1, 2014
Present Value of Future Benefits		
Active Participant Benefits (excluding DROP)	\$ 2,436,873,897	\$ 2,630,746,552
DROP Participant Benefits	426,986,578	463,895,209
Retiree Benefits	2,091,943,532	2,231,839,621
Terminated Vested and Inactive Members	<u>68,077,870</u>	<u>73,454,154</u>
Present Value of Benefits (PVB)	\$ 5,023,881,877	\$ 5,399,935,536
Market Value of Assets (MVA)	\$ 3,353,932,103	\$ 3,766,059,665
Future Employee Contributions	222,907,824	220,640,696
Future County Contributions	<u>1,447,041,950</u>	<u>1,413,235,175</u>
Total Resources	\$ 5,023,881,877	\$ 5,399,935,536
Actuarial Accrued Liability		
Present Value of Benefits (PVB)	\$ 5,023,881,877	\$ 5,399,935,536
Present Value of Future Normal Costs (PVFNC)		
County Portion	327,143,399	378,575,070
Employee Portion	<u>222,907,824</u>	<u>220,640,696</u>
Actuarial Accrued Liability	\$ 4,473,830,654	\$ 4,800,719,770
(AAL = PVB – PVFNC)		
Actuarial Value of Assets (AVA)	<u>3,261,923,577</u>	<u>3,614,067,515</u>
Net (Surplus)/Unfunded (AAL – AVA)	\$ 1,211,907,077	\$ 1,186,652,255
Present Value of Accrued Benefits		
Present Value of Benefits (PVB)	\$ 5,023,881,877	\$ 5,399,935,536
Present Value of Future Benefit Accruals (PVFBA)	<u>1,161,789,425</u>	<u>1,266,261,468</u>
Present Value of Accrued Benefits	\$ 3,862,092,452	\$ 4,133,674,068
(PVAB = PVB – PVFBA)		
Market Value of Assets (MVA)	<u>3,353,932,103</u>	<u>3,766,059,665</u>
Net Unfunded, not less than \$0 (PVAB – MVA)	\$ 508,160,349	\$ 367,614,403

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION III
LIABILITIES**

Changes in Liabilities

Each of the liabilities disclosed in the prior table are expected to change at each valuation. The components of that change, depending upon which liability is analyzed, can include:

- New hires since the last valuation
- Benefits accrued since the last valuation
- Plan amendments increasing benefits
- Passage of time which adds interest to the prior liability
- Benefits paid to retirees since the last valuation
- Participants retiring, terminating, or dying at rates different than expected
- A change in actuarial or investment assumptions
- A change in the actuarial funding method

Unfunded liabilities will change because of all of the above and also due to changes in system assets resulting from:

- Employer contributions less than the full actuarial contribution
- Investment earnings different than expected
- A change in the method used to measure system assets

In each valuation, we report on those elements of change which are of particular significance, potentially affecting the long-term financial outlook of the System. Below we present key changes in liabilities since the last valuation.

Table III-2			
	Present Value of Benefits	Actuarial Accrued Liability	Present Value of Accrued Benefits
Liabilities 7/1/2013	\$ 5,023,881,877	\$ 4,473,830,654	\$ 3,862,092,452
Liabilities 7/1/2014	<u>5,399,935,536</u>	<u>4,800,719,770</u>	<u>4,133,674,068</u>
Liability Increase (Decrease)	\$ 376,053,659	\$ 326,889,116	\$ 271,581,616
Change Due to:			
Plan Amendment and Ad Hoc COLAs	\$ 1,462,698	\$ 1,462,698	\$ 1,462,698
Actuarial (Gain)/Loss	<i>Not Calculated</i>	(3,445,687)	<i>Not Calculated</i>
Method and Assumption Changes	206,100,782	158,796,031	87,504,083
Benefits Accumulated and Other Sources	168,490,179	170,076,074	182,614,835

**SECTION IV
CONTRIBUTIONS**

In the process of evaluating the financial condition of any pension system, the actuary analyzes the assets and liabilities to determine what level (if any) of contributions is needed to properly maintain the funding status of the system. Typically, the actuarial process will use a funding technique that will result in a pattern of contributions that is both stable and predictable.

For this System, the funding method employed is the **Entry Age Actuarial Cost Method**. Under this method, there are three components to the total contribution: the **normal cost rate**, the **unfunded actuarial liability rate** (UAL rate), and the **administrative expense rate**. The normal cost rate is determined in the following steps. First, an individual normal cost rate is determined by taking the value, as of entry age into the system, of each member's projected future benefits. This value is then divided by the value, also at entry age, of the member's expected future salary. Second, the normal cost rate is multiplied by current salary and added together to obtain the total System normal cost. This is divided by total salary to convert it to the total System normal cost rate. Finally, the total normal cost rate is reduced by the average member contribution rate to produce the County's normal cost rate.

Budgeted Rate (Based on Corridor Method)

The employer's total contribution rate is equal to the normal cost rate plus rate changes due to amendments passed or assumption changes adopted since July 1, 2001 plus the expense rate, as long as the System's actuarial funded status remains within a corridor of 90% to 120%. The normal cost rate and actuarial accrued liability will continue to be measured using the entry age funding method. If the funded status falls outside the corridor, a credit (if above 120%) or charge (if below 90%) will be established based on a 15-year amortization equal to the amount necessary to re-enter the corridor.

Table IV-1	
Changes Since 2001	Impact on UAL Rate
2002 ad-hoc COLA	+ 0.13%
2005 Assumption Changes	+ 1.23%
2006 DROP Implementation	+ 0.10%
2006 DPSC Conversion	- 0.04%
2007 Reduce Disability Offset to 40%	+ 0.03%
2008 Reduce Disability Offset to 30%	+ 0.02%
2010 Assumption Changes	+ 0.02%
2013 Reduce Disability Offset to 25%	+ 0.01%
2014 Reduce Disability Offset to 15%	+ 0.02%
2014 Assumption Changes	<u>+ 1.15%</u>
Total Increase	+ 2.67%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION IV
CONTRIBUTIONS**

The table below presents and compares the budgeted rate for the System for this valuation and the prior one. In both cases, the amortization follows the corridor amortization to 90%.

Table IV-2		
Actuarially Determined Rate (for Corridor Contribution)		
Valuation Date	July 1, 2013	July 1, 2014
Fiscal Year	2015	2016
Normal Cost Rate	6.91%	8.06%
UAL Rate	1.50%	2.67%
Amortization of Amount Outside Corridor	9.71%	7.78%
Expense Rate	<u>0.20%</u>	<u>0.20%</u>
Total County Rate	18.32%	18.71%
Total Rate with Alternative Amortization Targets of		
93%	20.15%	20.68%
94%	20.77%	21.33%
95%	21.38%	21.99%

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FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

**SECTION IV
CONTRIBUTIONS**

Table IV-3 Development of Corridor Contribution Rate		
	July 1, 2013 (for FY 2015)	July 1, 2014 (for FY 2016)
1. Present Value of Future Benefits		
a. Active Employees	\$ 2,436,873,897	\$ 2,630,746,552
b. DROP	426,986,578	463,895,209
c. Retired Members	2,091,943,532	2,231,839,621
d. Vested Terminated and Inactive Members	<u>68,077,870</u>	<u>73,454,154</u>
e. Total Present Value	\$ 5,023,881,877	\$ 5,399,935,536
2. Present Value of Future Normal Costs		
a. County Portion	\$ 327,143,399	\$ 378,575,070
b. Employee Portion	<u>222,907,824</u>	<u>220,640,696</u>
c. Total Present Value	\$ 550,051,223	\$ 599,215,766
3. Actuarial Accrued Liability (1) – (2)	\$ 4,473,830,654	\$ 4,800,719,770
4. Actuarial Value of Assets for Corridor Purposes		
a. Actuarial Assets	\$ 3,261,923,577	\$ 3,614,067,515
b. Outstanding Balance of Plan and Assumption Changes	<u>59,257,479</u>	<u>137,644,302</u>
c. Adjusted Assets (a) + (b)	\$ 3,321,181,056	\$ 3,751,711,817
5. Funding Ratio for Corridor Test	74.2%	78.1%
6. Liability to be Amortized if outside Corridor		
a. 90% x (3) - (4)(c)	\$ 705,266,533	\$ 568,935,976
b. (4)(c) - 120% x (3)	0	0
7. Active Member Payroll	\$ 655,612,800	\$ 659,360,128
8. Unfunded Liability Amortization Factor	11.0918	11.0918
9. Amortization as a % of Payroll (6)/(7)/(8)	9.70%	7.79%
10. County Contribution Results (Corridor)		
a. Normal Cost Rate	6.91%	8.06%
b. Administrative Expense Rate	0.20%	0.20%
c. Plan Change Amortizations	1.50%	2.67%
d. Amortization Outside Corridor (9)	<u>9.70%</u>	<u>7.79%</u>
e. Total County Contribution Rate June 30 ¹	18.31%	18.72%

¹Alternative rate calculations developed by amortizing to 94% for FY 2016 is a County Rate of 21.33%.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**SECTION V
ACCOUNTING STATEMENT INFORMATION**

ASC Topic 960 of the Financial Accounting Standards Board (FASB) requires the System to disclose certain information regarding its funded status. Statement Number 25 of the Governmental Accounting Standards Board (GASB) establishes standards for disclosure of pension information by public employee retirement systems (PERS) and governmental employers in notes to financial statements and supplementary information.

The FASB ASC Topic 960 disclosures provide a quasi “snap shot” view of how the System’s assets compare to its liabilities if contributions stopped and accrued benefit claims had to be satisfied. However, due to potential legal requirements and the possibility that alternative interest rates would have to be used to determine the liabilities, these values may not be a good indication of the amount of money it would take to buy the benefits for all members if the System were to terminate.

FASB ASC Topic 960 specifies that a comparison of the present value of accrued (accumulated) benefits with the market value of the assets as of the valuation date must be provided. GASB Statement No. 25 requires the actuarial accrued liability be compared with the actuarial value of assets for funding purposes. The relevant amounts as of July 1, 2013 and July 1, 2014 are exhibited in Table V-1, which also includes a reconciliation of liabilities determined as of the prior valuation, July 1, 2013, to the liabilities as of July 1, 2014.

This valuation contains information reported in the June 30, 2014 Comprehensive Annual Financial Report (CAFR) of the System under the new GASB Statement No. 67. Disclosures are based on the use of update procedures to roll forward the 2013 valuation results. The 2013 starting point is higher than the funding numbers from 2013 since the change in the assumed investment return was included in the 2013 liabilities. The calculation of Net Pension Liability in Table V-2 shows the amounts disclosed for the plan year June 30, 2014 as well as a projection of the anticipated June 30, 2015 disclosure if all actuarial assumptions are met over the coming year.

Tables V-3 through V-5 are exhibits to be used with the System’s CAFR report. Table V-3 is the Notes to Required Supplementary Information, Table V-4 is a history of gains and losses in Accrued Liability, and Table V-5 is the Solvency Test which shows the portion of Accrued Liability covered by Assets.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-1		
Accounting Statement Information		
	July 1, 2013	July 1, 2014
A. FASB ASC Topic 960 Basis		
1. Present Value of Benefits Accrued and Vested to Date		
a. Members Currently Receiving Payments	\$ 2,091,943,532	\$ 2,231,839,621
b. Vested Terminated and Inactive Members	68,077,870	73,454,154
c. DROP	426,986,578	463,895,209
d. Active Members	<u>1,234,336,733</u>	<u>759,791,083</u>
e. Total PVVB	\$ 3,821,344,713	\$ 3,528,980,067
2. Present Value of Non-Vested Accrued Benefits for Active Members	<u>40,747,739</u>	<u>604,694,001</u>
3. Total Present Value of Accrued Benefits	\$ 3,862,092,452	\$ 4,133,674,068
4. Assets at Market Value	<u>3,353,932,103</u>	<u>3,766,059,665</u>
5. Unfunded Present Value of Accrued Benefits, But Not Less Than Zero	\$ 508,160,349	\$ 367,614,403
6. Ratio of Assets to Value of Benefits (4) / (3)	86.8%	91.1%
B. Statement of Changes in Present Value of Accrued Benefits		
Actuarial Present Value of Accrued Benefits as of July 1, 2013		\$ 3,862,092,452
Increase (Decrease) During Year Attributable to:		
Passage of Time		\$ 280,820,603
Benefit Paid – FY 2014		(238,560,893)
Plan Amendment		1,462,698
Assumption Changes		87,504,083
Benefits Accrued, Other Gains/Losses		<u>140,355,125</u>
Net Increase (Decrease)		\$ 271,581,616
Actuarial Present Value of Accrued Benefits as of July 1, 2014		\$ 4,133,674,068

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

SECTION V
ACCOUNTING STATEMENT INFORMATION

	June 30, 2014	Estimated* June 30, 2015
Table V-2		
GASB No. 67 Disclosures		
<u>Total Pension Liability</u>		
Service Cost	\$ 84,074,831	\$ 84,153,689
Interest	340,919,519	352,741,889
Changes in benefit terms	0	1,462,698
Differences between expected and actual experience	0	(8,616,589)
Changes in assumptions	0	0
Benefit payments, including refunds or member contributions	(238,560,893)	(297,304,000)
Net change in Total Pension Liability	\$ 186,433,457	\$ 132,437,687
Total Pension Liability – beginning	\$ 4,621,440,204	\$ 4,807,873,661
Total Pension Liability – ending (a)	\$ 4,807,873,661	\$ 4,940,311,348
<u>Plan Fiduciary Net Position</u>		
Contributions – Employer	\$ 129,618,309	\$ 132,861,000
Contributions – Member	32,758,587	31,050,000
Net investment income	490,196,386	277,490,000
Benefit payments, including refunds of member contributions	(238,560,893)	(297,304,000)
Administrative Expenses	(1,884,827)	(1,320,000)
Net change in Plan Fiduciary Net Position	\$ 412,127,562	\$ 142,777,000
Plan Fiduciary Net Position – beginning	\$ 3,353,932,103	\$ 3,766,059,665
Plan Fiduciary Net Position – ending (b)	\$ 3,766,059,665	\$ 3,908,836,665
Plan Net Pension Liability (Asset) – ending [(a) – (b)]	\$ 1,041,813,996	\$ 1,031,474,683

*These numbers will change to reflect the actual Plan Fiduciary Net Position and benefit payments. Estimates are provided here for planning purposes only.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-3
Note to Required Supplementary Information

The information presented in the required supplementary schedules was determined as part of the actuarial valuation at the date indicated. Additional information as of the latest actuarial valuation follows.

Valuation date	July 1, 2014
Actuarial cost method	Entry age
Amortization method	Level percent open
Remaining amortization period	15 years
Asset valuation method	3-year smoothed market
Actuarial assumptions:	
Investment rate of return*	7.5%
Projected salary increases*	4.0% - 10.0%
Cost-of-living adjustments	2.75%
*Includes inflation at	3.0%

The actuarial assumptions used have been recommended by the actuary and adopted by the System's Board of Trustees based on the most recent review of the System's experience, completed in 2011.

The rate of employer contributions to the System is composed of the normal cost, amortization of the unfunded actuarial accrued liability and an allowance for administrative expenses. The normal cost is a level percent of payroll cost which, along with the member contributions, will pay for projected benefits at retirement for the average plan participant. The actuarial accrued liability is that portion of the present value of projected benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and the funds accumulated as of the same date is the unfunded actuarial accrued liability. The allowance for administrative expenses is based upon the System's actual administrative expenses.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

SECTION V
ACCOUNTING STATEMENT INFORMATION

Table V-4
Analysis of Financial Experience
Gains and Losses in Accrued Liability During Years Ended June 30
Resulting from Differences Between Assumed Experience and Actual Experience

Type of Activity	Gain (or Loss) for Year ending June 30,					
	2009	2010	2011	2012	2013	2014
Investment Income	\$ (282,116,118)	\$ (83,485,934)	\$ 71,698,746	\$ 59,620,255	\$ 46,004,262	\$ 113,443,149
Combined Liability Experience	<u>(62,427,360)</u>	<u>(74,720,305)</u>	<u>(79,444,131)</u>	<u>(74,547,089)</u>	<u>(39,401,877)</u>	<u>3,445,687</u>
Gain (or Loss) During Year from Financial Experience	\$ (344,543,478)	\$ (158,206,239)	\$ (7,745,385)	\$ (14,926,834)	\$ 6,602,385	\$ 116,888,836
Non-Recurring Items	<u>0</u>	<u>0</u>	<u>(1,602,061)</u>	<u>0</u>	<u>(727,193)</u>	<u>(1,462,698)</u>
Composite Gain (or Loss) During Year	\$ (344,543,478)	\$ (158,206,239)	\$ (9,347,446)	\$ (14,926,834)	\$ 5,875,192	\$ 115,426,138

Table V-5
Solvency Test
Aggregate Accrued Liabilities For

Valuation Date July 1,	(1) Active Member Contributions	(2) Retirees Vested Terms, Beneficiaries & DROP	(3) Active Members (Employer Financed Portion)	Reported Assets	Portion of Accrued Liabilities by Reported Assets		
					(1)	(2)	(3)
2009	\$ 312,357,412	\$ 1,813,482,907	\$ 1,410,033,226	\$ 2,603,283,631	100%	100%	34%
2010	329,166,585	1,985,373,546	1,456,519,392	2,636,051,959	100%	100%	22%
2011	339,170,151	2,177,027,867	1,502,726,115	2,841,466,151	100%	100%	22%
2012	332,723,684	2,411,862,623	1,519,589,131	3,053,412,085	100%	100%	20%
2013	355,254,873	2,587,007,980	1,531,567,801	3,539,067,517	100%	100%	39%
2014	363,335,228	2,769,188,984	1,668,195,558	3,614,067,515	100%	100%	29%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

The data for this valuation was provided electronically by the Fairfax County Retirement System staff. Cheiron did not perform a formal audit on the data. However, we did perform checks of the data for reasonable and consistency in accordance with Actuarial Standards of Practice Number 23 Data Quality. The active data was collected as of January 1, 2014 and the inactive data was collected as of July 1, 2014.

Active pay information is adjusted to project the pay expected to be earned from July 1, 2014 through June 30, 2015. The annual payroll was provided as of December 31, 2013 and adjusted to July 1, 2014. For County employees this included the 2.29% increase as of July 1, 2014. For School employees this included annualizing the 2.00% increase as of January 1, 2014.

For inactive participants given with a Joint and Survivor form of benefit and no continuation percentage provided, a survivor percentage of 100% is assumed.

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**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

Summary of Membership Data as of July 1, 2014

		Active Members*		
		Count	Average Age	Average Salary
School	Plan A	2,521	50.38	\$ 30,054
	Plan B	2,743	51.55	35,143
	Plan C	368	42.64	15,693
	Plan D	237	43.88	15,284
	Total	5,869	50.18	\$ 30,936
County	Plan A	2,795	47.10	\$ 60,554
	Plan B	4,610	46.33	60,187
	Plan C	157	36.68	46,155
	Plan D	431	38.77	55,315
	Total	7,993	46.00	\$ 59,777
Total Systems	Plan A	5,316	48.66	\$ 46,090
	Plan B	7,353	48.28	50,845
	Plan C	525	40.86	24,803
	Plan D	668	40.58	41,112
	Total	13,862	47.77	\$ 47,566

* Excludes DROP participants.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

	Inactive Members		
	School	County	Total
Service Retirement			
Count	2,731	4,026	6,757
Annual Basic Benefit	\$ 46,481,496	\$ 126,000,597	\$ 172,482,093
Annual Supplements	7,366,684	23,077,449	30,444,134
Service - Connected Disability			
Count	73	76	149
Annual Basic Benefit ¹	\$ 1,579,602	\$ 2,184,162	\$ 3,763,764
Ordinary Disability			
Count	222	152	374
Annual Basic Benefit	\$ 2,013,133	\$ 2,329,274	\$ 4,342,407
Beneficiaries			
Count	25	321	346
Annual Basic Benefit	\$ 257,118	\$ 5,074,219	\$ 5,331,336
DROP			
Count	168	537	705
Annual Basic Benefit	\$ 4,409,684	\$ 19,848,155	\$ 24,257,840
Annual Supplements	2,020,602	8,493,233	10,513,835
Vested Former Members			
Count			1,677
Annual Basic Benefit ²			\$ 11,766,407

¹ Benefits are net of offsets for Workers' Compensation and Social Security.

² Benefits are payable at age 65.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

APPENDIX A
MEMBERSHIP INFORMATION

Membership Statistics						
The number of retired members, beneficiaries, and disabled members can be analyzed as follows:						
	<u>July 1, 2013</u>		<u>July 1, 2014</u>		<u>% Change</u>	
	Count	Average Monthly Benefit	Count	Average Monthly Benefit	Count	Average Monthly Benefit
Inactive Members						
Service Retirement						
Basic Benefit	6,392	\$ 2,090	6,757	\$ 2,127	5.7%	1.8%
Supplement	1,832	1,260	1,860	1,364	1.5%	8.3%
Service-Connected Disability	153	2,008	149	2,105	-2.6%	4.8%
Ordinary Disability	390	941	374	968	-4.1%	2.8%
Beneficiaries	<u>328</u>	<u>1,276</u>	<u>346</u>	<u>1,284</u>	<u>5.5%</u>	<u>0.7%</u>
Total/Average (Basic Benefit)	7,263	\$ 1,990	7,626	\$ 2,032	5.0%	2.1%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

Data Reconciliation from July 1, 2013 to July 1, 2014								
	Active	DROP	Terminated Vested	Retired	Service- Connected Disability	Ordinary Disability	Beneficiary	Total
Participant count as of July 1, 2013	14,011	670	1,576	6,392	153	390	328	23,520
New Hires / Re-hires	1,279		(7)					1,272
Terminated Vested	(176)		176					0
DROP	(247)	247						0
Retired	(246)	(209)	(45)	500				0
Deceased with beneficiary	(1)	(1)		(27)	(1)	(1)	31	0
Deceased without beneficiary		(2)		(112)	(6)	(24)	(13)	(157)
Benefits Expired								0
Ordinary Disability	(6)		(1)			7		0
Service-Connected Disability	(1)				1			0
Terminated Not Vested	(751)							(751)
Corrections			(22)	4	2	2		(14)
Change	(149)	35	101	365	(4)	(16)	18	350
Participant count as of July 1, 2014	13,862	705	1,677	6,757	149	374	346	23,870

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

Distribution of Active Participants - - County Plan A

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	7	17	0	0	0	0	0	0	24
25 to 29	4	117	50	0	0	0	0	0	171
30 to 34	5	107	143	27	2	0	0	0	284
35 to 39	1	59	120	75	20	0	0	0	275
40 to 44	1	73	80	76	75	30	4	0	339
45 to 49	4	39	69	64	82	120	93	1	472
50 to 54	2	64	75	77	81	107	101	22	529
55 to 59	5	47	60	66	70	73	55	24	400
60 to 64	4	25	49	45	29	26	20	8	206
65 & up	3	14	21	13	13	10	15	6	95
Total	36	562	667	443	372	366	288	61	2,795

TOTAL SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 126,921	\$ 587,756	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 714,677
25 to 29	89,361	4,767,121	2,141,694	0	0	0	0	0	6,998,176
30 to 34	145,957	5,220,472	7,141,024	1,406,960	101,929	0	0	0	14,016,342
35 to 39	16,373	2,806,132	6,422,238	4,103,606	1,255,339	0	0	0	14,603,688
40 to 44	22,739	3,523,085	4,146,704	4,565,068	5,259,035	2,174,005	252,107	0	19,942,743
45 to 49	88,269	1,472,903	3,543,665	3,949,875	5,634,522	9,416,948	7,336,965	65,326	31,508,473
50 to 54	40,258	2,601,784	3,764,134	4,494,699	5,536,113	8,118,871	9,325,227	1,913,421	35,794,507
55 to 59	80,271	2,198,499	3,008,317	4,119,900	4,960,551	5,766,400	4,786,294	2,565,445	27,485,677
60 to 64	69,203	942,134	2,428,159	2,349,622	1,863,300	2,019,766	1,824,499	1,353,308	12,849,991
65 & up	32,477	578,967	744,096	736,810	800,506	659,463	1,201,832	580,503	5,334,654
Total	\$ 711,829	\$ 24,698,853	\$ 33,340,031	\$ 25,726,540	\$ 25,411,295	\$ 28,155,453	\$ 24,726,924	\$ 6,478,003	\$ 169,248,928

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**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

Distribution of Active Participants - - County Plan B

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	0	43	2	0	0	0	0	0	45
25 to 29	8	266	85	0	0	0	0	0	359
30 to 34	9	234	231	53	0	0	0	0	527
35 to 39	7	152	202	103	14	0	0	0	478
40 to 44	5	152	197	135	62	19	7	0	577
45 to 49	15	137	205	157	68	69	53	5	709
50 to 54	8	154	225	161	87	70	67	5	777
55 to 59	9	137	174	154	93	41	29	11	648
60 to 64	2	53	114	97	58	20	5	4	353
65 & up	1	20	44	35	17	9	9	2	137
Total	64	1,348	1,479	895	399	228	170	27	4,610

TOTAL SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 0	\$ 1,731,201	\$ 59,533	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,790,734
25 to 29	167,365	12,432,417	3,831,662	0	0	0	0	0	16,431,444
30 to 34	240,094	11,874,550	11,809,937	2,690,358	0	0	0	0	26,614,939
35 to 39	213,616	8,795,171	11,790,267	6,157,520	808,635	0	0	0	27,765,209
40 to 44	140,253	7,890,928	12,669,488	8,677,280	4,487,037	1,415,709	491,793	0	35,772,488
45 to 49	348,468	6,859,522	11,931,791	10,476,437	5,295,590	5,598,347	4,103,632	360,558	44,974,345
50 to 54	219,985	8,274,423	13,303,141	10,889,031	6,506,548	5,525,828	5,371,968	378,500	50,469,424
55 to 59	249,834	7,650,870	10,983,795	10,088,503	7,227,823	3,032,620	2,674,979	906,737	42,815,161
60 to 64	45,256	2,869,146	6,929,166	6,635,656	4,085,890	1,484,315	490,601	302,991	22,843,021
65 & up	5,376	804,427	2,319,193	2,289,196	1,151,849	634,774	653,948	127,816	7,986,579
Total	\$ 1,630,247	\$ 69,182,655	\$ 85,627,973	\$ 57,903,981	\$ 29,563,372	\$ 17,691,593	\$ 13,786,921	\$ 2,076,602	\$ 277,463,344

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

Distribution of Active Participants - - County Plan C

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	22	1	0	0	0	0	0	0	23
25 to 29	37	0	0	0	0	0	0	0	37
30 to 34	27	0	0	0	0	0	0	0	27
35 to 39	14	0	0	0	0	0	0	0	14
40 to 44	17	0	0	0	0	0	0	0	17
45 to 49	14	0	0	0	0	0	0	0	14
50 to 54	8	0	0	0	0	0	0	0	8
55 to 59	10	0	0	0	0	0	0	0	10
60 to 64	5	0	0	0	0	0	0	0	5
65 & up	2	0	0	0	0	0	0	0	2
Total	156	1	0	0	0	0	0	0	157

TOTAL SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 930,944	\$ 36,377	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 967,321
25 to 29	1,629,753	0	0	0	0	0	0	0	1,629,753
30 to 34	1,313,620	0	0	0	0	0	0	0	1,313,620
35 to 39	685,822	0	0	0	0	0	0	0	685,822
40 to 44	697,031	0	0	0	0	0	0	0	697,031
45 to 49	645,781	0	0	0	0	0	0	0	645,781
50 to 54	565,383	0	0	0	0	0	0	0	565,383
55 to 59	405,249	0	0	0	0	0	0	0	405,249
60 to 64	265,901	0	0	0	0	0	0	0	265,901
65 & up	70,469	0	0	0	0	0	0	0	70,469
Total	\$ 7,209,953	\$ 36,377	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 7,246,330

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

Distribution of Active Participants - - County Plan D

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	31	0	0	0	0	0	0	0	31
25 to 29	98	0	0	0	0	0	0	0	98
30 to 34	63	0	0	0	0	0	0	0	63
35 to 39	56	0	0	0	0	0	0	0	56
40 to 44	49	1	0	0	0	0	0	0	50
45 to 49	46	0	1	0	0	0	0	0	47
50 to 54	39	0	0	0	0	0	0	0	39
55 to 59	31	0	0	0	0	0	0	0	31
60 to 64	14	0	0	1	0	0	0	0	15
65 & up	1	0	0	0	0	0	0	0	1
Total	428	1	1	1	0	0	0	0	431

TOTAL SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 1,274,433	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,274,433
25 to 29	4,963,144	0	0	0	0	0	0	0	4,963,144
30 to 34	3,423,486	0	0	0	0	0	0	0	3,423,486
35 to 39	3,470,973	0	0	0	0	0	0	0	3,470,973
40 to 44	2,933,776	62,582	0	0	0	0	0	0	2,996,358
45 to 49	2,560,042	0	29,832	0	0	0	0	0	2,589,874
50 to 54	2,191,470	0	0	0	0	0	0	0	2,191,470
55 to 59	1,803,019	0	0	0	0	0	0	0	1,803,019
60 to 64	914,009	0	0	88,646	0	0	0	0	1,002,655
65 & up	125,145	0	0	0	0	0	0	0	125,145
Total	\$ 23,659,497	\$ 62,582	\$ 29,832	\$ 88,646	\$ 0	\$ 0	\$ 0	\$ 0	\$ 23,840,557

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

Distribution of Active Participants - - School Plan A

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	6	9	1	0	0	0	0	0	16
25 to 29	13	22	9	0	0	0	0	0	44
30 to 34	36	62	27	4	0	0	0	0	129
35 to 39	42	119	51	17	1	0	0	0	230
40 to 44	33	170	95	37	14	0	1	0	350
45 to 49	31	183	87	51	17	11	16	3	399
50 to 54	23	182	142	67	23	16	18	8	479
55 to 59	23	160	124	60	35	14	6	6	428
60 to 64	14	93	110	40	13	5	6	2	283
65 & up	8	61	52	25	8	3	3	3	163
Total	229	1,061	698	301	111	49	50	22	2,521

TOTAL SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 92,252	\$ 235,540	\$ 32,417	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 360,209
25 to 29	280,839	623,406	340,545	0	0	0	0	0	1,244,790
30 to 34	971,219	1,572,851	956,978	190,620	0	0	0	0	3,691,668
35 to 39	982,544	3,396,424	1,697,991	751,046	53,051	0	0	0	6,881,056
40 to 44	660,564	4,304,587	3,227,903	1,641,485	782,726	0	73,012	0	10,690,277
45 to 49	560,088	4,563,919	2,566,022	1,946,075	828,007	612,380	1,056,655	175,188	12,308,334
50 to 54	323,621	3,906,033	4,603,583	2,716,361	1,032,730	861,075	1,080,934	514,486	15,038,823
55 to 59	376,589	3,592,381	3,605,436	2,206,389	1,559,699	915,608	320,869	412,322	12,989,293
60 to 64	251,301	1,908,375	3,120,579	1,462,882	576,067	285,988	428,669	116,673	8,150,534
65 & up	183,317	1,276,486	1,401,895	821,139	356,383	113,271	122,595	135,507	4,410,593
Total	\$ 4,682,334	\$ 25,380,002	\$ 21,553,349	\$ 11,735,997	\$ 5,188,663	\$ 2,788,322	\$ 3,082,734	\$ 1,354,176	\$ 75,765,577

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

Distribution of Active Participants - - School Plan B

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	4	9	0	0	0	0	0	0	13
25 to 29	2	30	15	0	0	0	0	0	47
30 to 34	12	29	34	9	1	0	0	0	85
35 to 39	14	61	59	27	9	1	0	0	171
40 to 44	30	108	83	74	22	12	4	0	333
45 to 49	28	151	119	75	49	37	25	7	491
50 to 54	26	164	131	117	80	40	14	5	577
55 to 59	15	118	143	121	68	22	9	5	501
60 to 64	9	87	117	73	36	12	4	3	341
65 & up	2	41	68	46	14	6	6	1	184
Total	142	798	769	542	279	130	62	21	2,743

TOTAL SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 80,210	\$ 301,645	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 381,855
25 to 29	53,930	813,791	575,636	0	0	0	0	0	1,443,357
30 to 34	282,209	871,107	1,373,801	429,601	65,590	0	0	0	3,022,308
35 to 39	314,306	1,716,131	2,215,954	1,217,163	501,073	43,693	0	0	6,008,320
40 to 44	516,461	2,786,178	2,927,722	3,323,737	1,169,791	920,720	273,156	0	11,917,765
45 to 49	466,757	3,417,707	3,898,145	3,380,365	2,538,473	2,323,935	1,873,289	560,155	18,458,826
50 to 54	361,680	3,250,736	3,874,937	5,122,031	4,324,834	2,484,210	949,262	358,490	20,726,180
55 to 59	340,492	2,574,766	4,648,382	5,033,026	3,362,210	1,324,126	535,959	310,514	18,129,475
60 to 64	151,550	1,764,622	3,362,448	2,605,548	1,687,880	711,833	234,900	201,128	10,719,909
65 & up	30,463	813,649	1,907,691	1,551,124	586,839	317,196	329,679	53,333	5,589,974
Total	\$ 2,598,058	\$ 18,310,332	\$ 24,784,716	\$ 22,662,595	\$ 14,236,690	\$ 8,125,713	\$ 4,196,245	\$ 1,483,620	\$ 96,397,969

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

Distribution of Active Participants - - School Plan C

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	17	0	0	0	0	0	0	0	17
25 to 29	34	0	0	0	0	0	0	0	34
30 to 34	63	0	0	0	0	0	0	0	63
35 to 39	40	0	0	0	0	0	0	0	40
40 to 44	54	0	0	0	0	0	0	0	54
45 to 49	61	0	0	0	0	0	0	0	61
50 to 54	43	0	0	0	0	0	0	0	43
55 to 59	30	0	0	0	0	0	0	0	30
60 to 64	20	0	0	0	0	0	0	0	20
65 & up	6	0	0	0	0	0	0	0	6
Total	368	0	0	0	0	0	0	0	368

TOTAL SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 282,823	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 282,823
25 to 29	494,938	0	0	0	0	0	0	0	494,938
30 to 34	1,034,413	0	0	0	0	0	0	0	1,034,413
35 to 39	616,825	0	0	0	0	0	0	0	616,825
40 to 44	810,914	0	0	0	0	0	0	0	810,914
45 to 49	822,745	0	0	0	0	0	0	0	822,745
50 to 54	730,716	0	0	0	0	0	0	0	730,716
55 to 59	560,777	0	0	0	0	0	0	0	560,777
60 to 64	309,817	0	0	0	0	0	0	0	309,817
65 & up	111,186	0	0	0	0	0	0	0	111,186
Total	\$ 5,775,154	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 5,775,154

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

Distribution of Active Participants - - School Plan D

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	22	0	0	0	0	0	0	0	22
25 to 29	12	0	0	0	0	0	0	0	12
30 to 34	22	0	0	0	0	0	0	0	22
35 to 39	19	0	0	0	0	0	0	0	19
40 to 44	39	0	0	0	0	0	0	0	39
45 to 49	51	0	0	0	0	0	0	0	51
50 to 54	35	0	0	0	0	0	0	0	35
55 to 59	22	0	0	0	0	0	0	0	22
60 to 64	12	0	0	0	0	0	0	0	12
65 & up	3	0	0	0	0	0	0	0	3
Total	237	0	0	0	0	0	0	0	237

TOTAL SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 334,231	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 334,231
25 to 29	260,953	0	0	0	0	0	0	0	260,953
30 to 34	338,400	0	0	0	0	0	0	0	338,400
35 to 39	334,899	0	0	0	0	0	0	0	334,899
40 to 44	616,573	0	0	0	0	0	0	0	616,573
45 to 49	703,346	0	0	0	0	0	0	0	703,346
50 to 54	545,046	0	0	0	0	0	0	0	545,046
55 to 59	298,658	0	0	0	0	0	0	0	298,658
60 to 64	154,838	0	0	0	0	0	0	0	154,838
65 & up	35,326	0	0	0	0	0	0	0	35,326
Total	\$ 3,622,270	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 3,622,270

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX A
MEMBERSHIP INFORMATION**

Distribution of Active Participants - - Total

COUNTS BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	109	79	3	0	0	0	0	0	191
25 to 29	208	435	159	0	0	0	0	0	802
30 to 34	237	432	435	93	3	0	0	0	1,200
35 to 39	193	391	432	222	44	1	0	0	1,283
40 to 44	228	504	455	322	173	61	16	0	1,759
45 to 49	250	510	481	347	216	237	187	16	2,244
50 to 54	184	564	573	422	271	233	200	40	2,487
55 to 59	145	462	501	401	266	150	99	46	2,070
60 to 64	80	258	390	256	136	63	35	17	1,235
65 & up	26	136	185	119	52	28	33	12	591
Total	1,660	3,771	3,614	2,182	1,161	773	570	131	13,862

TOTAL SALARY BY AGE/SERVICE

Age	Service								Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 & Up	
Under 25	\$ 3,121,814	\$ 2,892,519	\$ 91,950	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 6,106,283
25 to 29	7,940,283	18,636,735	6,889,537	0	0	0	0	0	33,466,555
30 to 34	7,749,398	19,538,980	21,281,740	4,717,539	167,519	0	0	0	53,455,176
35 to 39	6,635,358	16,713,858	22,126,450	12,229,335	2,618,098	43,693	0	0	60,366,792
40 to 44	6,398,311	18,567,360	22,971,817	18,207,570	11,698,589	4,510,434	1,090,068	0	83,444,149
45 to 49	6,195,496	16,314,051	21,969,455	19,752,752	14,296,592	17,951,610	14,370,541	1,161,227	112,011,724
50 to 54	4,978,159	18,032,976	25,545,795	23,222,122	17,400,225	16,989,984	16,727,391	3,164,897	126,061,549
55 to 59	4,114,889	16,016,516	22,245,930	21,447,818	17,110,283	11,038,754	8,318,101	4,195,018	104,487,309
60 to 64	2,161,875	7,484,277	15,840,352	13,142,354	8,213,137	4,501,902	2,978,669	1,974,100	56,296,666
65 & up	593,759	3,473,529	6,372,875	5,398,269	2,895,577	1,724,704	2,308,054	897,159	23,663,926
Total	\$ 49,889,342	\$ 137,670,801	\$ 165,335,901	\$ 118,117,759	\$ 74,400,020	\$ 56,761,081	\$ 45,792,824	\$ 11,392,401	\$ 659,360,129

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FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

A. Long-Term Assumptions Used to Determine System Costs and Liabilities

1. Demographic Assumptions

a. Healthy Mortality

Annual Deaths Per 10,000 Members RP 2000 Mortality Projected to 2015*		
Age	Male	Female
20	3	2
25	3	2
30	4	2
35	7	4
40	10	6
45	12	9
50	16	13
55	27	24
60	53	47
65	103	90
70	177	155
75	306	249
80	554	413
85	997	708
90	1,727	1,259
95	2,596	1,888
100	3,394	2,339
105	3,979	2,931

* 5% of deaths are assumed to be service-connected.

b. Disabled Mortality

Annual Deaths Per 1,000 Disabled Members RP 2000 Mortality Projected to 2015 with Ages Set Forward Five Years		
Age	Male	Female
45	16	13
50	27	24
55	53	47
60	103	90
65	177	155
70	306	249
75	554	413
80	997	708

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

c. Termination of Employment (Prior to Normal Retirement Eligibility)

Annual Termination Rates Per 1,000 Members – Male			
Years of Employment with County			
Age	0-2	3-4	5+
20	283	174	80
25	270	150	80
30	210	122	65
35	130	103	50
40	125	89	35
45	125	74	20
50	125	59	20
55	125	50	20

Annual Termination Rates Per 1,000 Members – Female			
Years of Employment with County			
Age	0-3	3-5	5+
20	333	150	150
25	320	150	150
30	260	150	150
35	180	138	100
40	175	125	50
45	168	113	50
50	160	100	50
55	153	100	50

It is assumed that members who terminate before the earlier of age 45 or with age plus service equal to 60 elect to receive a refund of contributions instead of vested benefits.

Termination rates are gradually phased out as a member approaches Rule of 80 (or Rule of 85 for Plans C and D) retirement. Within two years of reaching Rule of 80 (85), members are not expected to terminate from the System and three years prior to Rule of 80 (85) eligibility, the decrement rate is reduced to only 20% of the rate shown above. Likewise, the final decrement is rate 40% of the rate above for four years prior to Rule of 80 (85), 60% for five years and 80% for six years.

d. Disability

Annual Disabilities Per 10,000 Members*		
Age	Male	Female
25	3	2
30	3	2
35	3	3

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

40	6	4
45	15	12
50	28	22
55	43	34
60	53	43

* 30% of disabilities are assumed to be service-connected. Of these, 5% are assumed to receive Social Security benefits and 31% are assumed to receive Workers' Compensation benefits.

e. Retirement

Annual Retirements Per 1,000 Eligible Members* (Male and Female)	
Age	Normal
50	500
51	400
52	300
53	300
54	300
55	350
56	350
57	350
58	400
59	400
60	500
61	550
62	450
63	450
64	600
65	400
66	300
67	200
68	200
69	200
70	200

* To further account for unused sick leave, we are assuming that members can retire on Rule of 79 (instead Rule of 80).

f. Deferred Retirement Option Program (DROP)

50% of retirees are assumed to enter DROP instead of immediate retirement. DROP participants are assumed to remain in DROP for three years and receive interest at 5% per annum on their DROP deferrals.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2014**

**APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS**

g. Merit/Seniority Salary Increase (in Addition to Across-the-Board Increase)

Service	Merit/Seniority Increase
0	7.00%
5	2.00
10	1.80
15	1.70
20	1.20
25	1.00
30	1.00

h. Family Composition

For purposes of valuing the pre-retirement death benefit, an assumption is made that 80% of employees are married at death while active and that the female spouse is three years younger than the male spouse.

i. Sick Leave Credit

Unused sick leave balances as reported for each active member is used as of the valuation date. Future sick leave accruals assumed to occur at the lesser of 172 hours per year or ½ the rate of current balance to credited service.

2. Economic Assumptions

- a. Rate of Investment Return: 7.50%
- b. Rate of General Wage Increase: 3.00%*
- c. Rate of Increase in Cost of Living: 2.75%**
- d. Rate of Increase in Total Payroll (For Amortization): 3.00%
- e. Administrative Expenses as a Percentage of Payroll: 0.20%

* General Wage Increase assumption applies for projecting contributions and developing Social Security benefits.

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

3. Changes since Last Valuation

Termination rates have been updated to reflect more recent experience.

A sick leave accrual assumption has been added to project sick leave as part of future benefit and service accruals.

APPENDIX B
ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

1. Funding Method

The Entry Age Normal Cost method is used to determine costs. Under this method, the employer contribution has three components: the normal cost, the payment toward the unfunded actuarial liability, and the expense rate.

The normal cost is a level percent of pay cost which, along with the member contributions, will pay for projected benefits at retirement for each plan participant.

The actuarial liability is that portion of the present value of projected benefits that will not be paid by future employer normal costs or member contributions. The difference between this liability and funds accumulated as of the same date is referred to as the unfunded actuarial liability.

The expense rate is added to cover the System's administrative expenses.

Under the Corridor Funding Method, the employer's total contribution rate is equal to the normal cost rate plus the UAL amortization rates for changes due to assumption changes or amendments passed since July 1, 2001 plus the expense rate as long as the System's actuarial funded status remains within a corridor of 90% to 120%. If the funded status falls outside the corridor, a credit (if above 120%) or charge (if below 90%) will be established based on a 15-year amortization equal to the amount necessary to re-enter the corridor.

2. Actuarial Value of Assets

For purposes of determining the County contribution to the System, we use an actuarial value of assets. The asset adjustment method dampens the volatility in asset values that could occur because of fluctuations in market conditions. Use of an asset smoothing method is consistent with the long-term nature of the actuarial valuation process.

In determining the actuarial value of assets, we calculate an expected actuarial value based on cash flow for the year and imputed returns at the actuarial assumption. This expected value is compared to the market value, and one-third of the difference is added to the preliminary actuarial value to arrive at the final actuarial value.

In 2014, there was an additional recognition of \$75 million of the remaining balance of past investment gains.

3. Changes since Last Valuation

Moved from the entrant variation of the Entry-Age Normal funding method to the individual method.

There was an additional recognition of \$75 million of the past investment gains.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

1. Membership

The plan covers full-time and certain part-time County and School Board employees who are not covered by the Fairfax County Police Officers Retirement System, the Uniformed Retirement System, or the VRS. In order to join, the eligible employee must agree to make the required contributions.

Members hired prior to January 1, 2013 could elect to join Plan A or Plan B. Members hired on or after January 1, 2013 may elect to join Plan C or Plan D.

2. Member Contributions

Plans A and C: 4% of compensation up to Social Security wage base and 5-1/3% of compensation in excess of wage base.

Plans B and D: 5-1/3% of compensation.

Interest is credited at the rate of 5% per year.

Member contributions are made through an “employer pick-up” arrangement which results in deferral of the taxes on these contributions.

3. Credited Service

All service as a member plus certain purchased prior service is credited. For members who have at least five years of service, credit is allowed at the rate of one month for 172 hours of accrued unused sick leave. For those hired on or after January 1, 2013, the amount of unused sick leave that may be used is capped at 2,080 hours.

4. Average Final Compensation

Base pay and roll call pay are credited, including the “pay” at the rate of final salary during the unused sick leave period. Average Final Compensation is the average over the high 36 consecutive months (or shorter period of total service).

5. Social Security Wage Base

The amount of wages subject to Social Security (FICA) taxes (\$113,700 in 2014).

6. Social Security Breakpoint

The Social Security breakpoint is the 35-year average of Social Security wage bases ending with the year the employee attains Social Security Retirement Age.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

7. Normal Retirement

Eligibility

For those hired before January 1, 2013:

- (i) Age 65 with five years of service, or
- (ii) Age 50 with age plus service greater than or equal to 80.

For those hired on or after January 1, 2013:

- (i) Age 65 with five years of service, or
- (ii) Age 55 with age plus service greater than or equal to 85.

Benefit

Plan A and C Benefits: The sum of 1.8% of average final compensation up to the Social Security breakpoint plus 2% of average final compensation in excess of the breakpoint, all multiplied by credited service, and increased by 3%.

Plan B and D Benefits: 2% of average final compensation multiplied by credited service, increased by 3%.

All Plans: Pre-Social Security Retirement Age (SSRA) supplement of 1% of average final compensation up to the Social Security breakpoint times credited service, and increased by 3%. This benefit is payable from normal retirement age until the participant reached his/her SSRA (age 65, 66, or 67).

8. Early Retirement

Eligibility

- (i) Age 50 with 25 years of service, or
- (ii) Ten years of service with age plus service greater than or equal to 75.

Benefit

Normal retirement benefit calculated using average final compensation and service at early retirement, actuarially reduced.

No pre-SSRA supplement benefit is payable.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

9. DROP (Deferred Retirement Option Program)

Eligibility

All members are eligible for DROP participation upon attaining eligibility for normal service retirement. Members can only participate in DROP once, and their election is irrevocable.

Benefit

The benefit scheduled to begin at normal retirement will be credited to a separate DROP account within the Retirement System, accumulating with interest while the member continues to work for a period of 36 months. Upon completion of the three-year period, DROP participation ends and participants must terminate employment. At that time, the participant will receive payment of the accumulated DROP benefits and begin receiving his or her monthly retirement benefit (in the same amount as determined at commencement of DROP participation, plus annual cost-of-living increases).

For those hired on or after January 1, 2013, the amount credited to the DROP account will exclude the Pre-Social Security Supplement described in item 7.

The DROP account will be credited with interest at an annual rate of 5%, compounded monthly.

Death or Disability during DROP

Non Service-Connected: The effective date of the death or disability will be treated as the end of the DROP participation.

Service-Connected Disability: The member may elect either (1) to receive the service-connected disability benefits to which he or she would otherwise be entitled (forfeiture of DROP balance) or (2) the normal retirement benefit plus the DROP account balance.

Service-Connected Death: The beneficiary will receive payment of the accumulated DROP benefits and the regular service-connect benefit.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

10. Service-Connected Disability

Eligibility

No age or service requirement.

Benefit

66-2/3% of average final compensation less 15% of any primary Social Security benefit to which the member is entitled and less 100% of Virginia Workers' Compensation benefit.

11. Ordinary Disability

Eligibility

Five years of credited service.

Benefit

2% of average final compensation times years of credited service, increased by 3%; maximum is 60% of average final compensation; minimum is \$300 per year, increased by 3%.

12. Service - Connected Death

Eligibility

No age or service requirement.

Benefit

Lump sum payment of \$10,000 plus ordinary death benefit.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

13. Ordinary Death

Eligibility

Less than 15 years of service.

Benefit

Return of employee contributions with interest, payable in lump sum.

Eligibility

15 or more years of service.

Benefit

Spouse Allowance: In lieu of the refund of contributions, the spouse of the deceased member may elect an allowance of 50% of the normal retirement benefit, based on average final compensation and service as of the date of the member's death. The allowance is payable for the life of the spouse but ceases upon the spouse's remarriage, if such remarriage occurs prior to the spouse's attainment of age 60.

14. Vesting

Eligibility

Five years of service.

Benefit

Normal retirement benefit based on average final compensation and service at date of termination. Benefit is payable in full at age 65 or actuarially reduced and payable at early retirement age.

A member may withdraw his contributions with interest at termination, in which case no vested benefit is payable.

15. Withdrawal

Eligibility

Not eligible for other benefits.

Benefit

Contributions with interest.

APPENDIX C
SUMMARY OF PLAN PROVISIONS

16. Form of Payment

The normal form of payment is a life annuity with a guarantee that at least the amount of member contributions with interest will be paid to the retiree or beneficiaries.

A member may elect an actuarially equivalent “pop-up” Joint and Survivor benefit with choice of 50%, 66 $\frac{2}{3}$ %, 75%, or 100% continuation to the spouse.

17. Cost-of-Living Adjustment

Each July 1, benefits are increased by the lesser of 4% or the increase in the cost-of-living index. The increase is prorated for those who have not been retired for a full year.

Cost-of-living adjustments do not apply to the pre-SSRA supplement or to deferred vested benefits prior to benefit commencement.

In addition to automatic adjustments, benefits may be further increased on an ad hoc basis, if actuarial experience has been favorable.

18. Changes since Last Valuation

The service-connected disability offset was reduced from 25% to 15% of any primary Social Security benefit.