

**Fairfax County Employees'
Retirement System
Actuarial Valuation
as of July 1, 2015**

Produced by Cheiron

January 2016

TABLE OF CONTENTS

<i>Section</i>	<i>Page</i>
Letter of Transmittal	i
Foreword.....	iii
Section I Board Summary	1
Section II Assets	12
Section III Liabilities	18
Section IV Contributions.....	21
Section V Accounting Statement Information.....	24
 <i>Appendices</i>	
Appendix A Membership Information	27
Appendix B Actuarial Assumptions and Methods	39
Appendix C Summary of Plan Provisions.....	45

January 21, 2016

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, 2015***

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, 2015. 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 2017 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. Other users of this report are not intended users as defined in the Actuarial Standards of Practice, and Cheiron assumes no duty or liability to such other users.

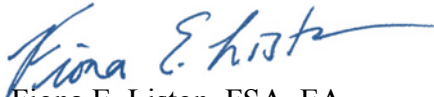
Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the assumptions; changes in assumptions; and changes in plan provisions or applicable law.

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

Board of Trustees
Fairfax County Employees' Retirement System
January 21, 2016
Page ii

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



Coralie A. Milligan, FSA, EA
Associate Actuary

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

FOREWORD

Cheiron has performed the actuarial valuation of the Fairfax County Employees' Retirement System as of July 1, 2015. 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 2017; and
- 4) **Provide specific information** and documentation required for the System's financial reporting.

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 items to be included in the System's Comprehensive Annual Financial Report (CAFR).

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 Standards 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.

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.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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 base rate consists of the normal cost rate plus expense rate plus certain amortization UAL bases. The UAL base rates are summarized in Section IV. The normal cost rate and actuarial accrued liability will 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 2017 as calculated under this method decreased from 18.71% to 18.23% of payroll when using the 90% corridor floor. The County's FY 2016 contribution was actually based on a 95% corridor floor and for FY 2017, we have also provided numbers for a 96% and 97% floor. On that basis, the contribution in FY 2016 was 21.99% and for FY 2017 it will be in the range of 21.57% to 22.90%.

This valuation contains information reported in the June 30, 2015 Comprehensive Annual Financial Report (CAFR) of the System. Additional information regarding GASB Statement Number 67 can be found in a separate report.

Trends

The System underperformed the investment assumption during the fiscal year ending in 2015, causing an actuarial loss on the asset side of the System. The actual return on a market value basis was approximately 0.44%. On an actuarial value basis, the assets returned 6.57% compared with an assumed rate of return of 7.5%. The investment loss recognized for funding purposes was \$33.1 million.

The measurement of liabilities produced a significant gain this year in the amount of \$73.2 million. This gain was due to experience compared to our assumptions about salary increases, retirement behavior, COLA, death, etc. Specific components of the gain include:

- The average salary increase was 3.6% for active participants who were in both the July 1, 2014 and July 1, 2015 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 \$42.3 million. The annual payroll was provided as of December 31, 2014 and adjusted to July 1, 2015. For County employees this included a 1.1% increase as of July 1, 2015. For School employees it was a 0.62% increase as of July 1, 2015.
- The valuation assumed a 2.75% cost-of-living adjustment in 2014 for benefits in pay status. The actual CPI-based COLA was 0.2% last year, creating a liability gain of \$49.2 million.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION I - BOARD SUMMARY

- The 2014 valuation incorporated a projection of future accrual of sick leave hours. The accrual of sick leave from 2014 to 2015 was higher than anticipated, producing a loss of \$2.0 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 \$4.3 million loss.
- There was a \$12.0 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.

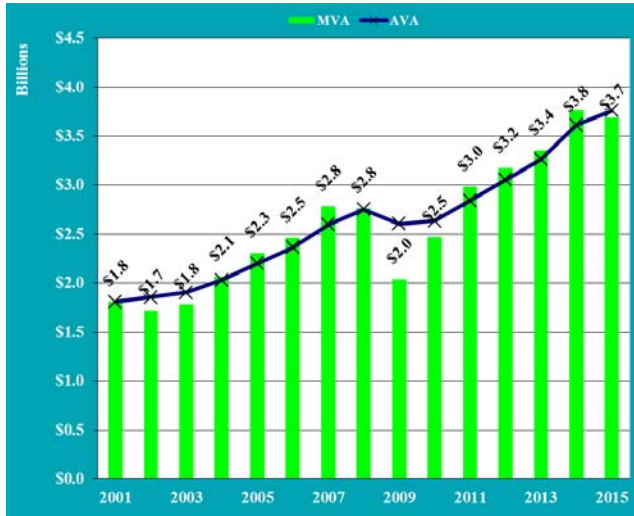
The combination of liability and investment experience and County plus member contributions over the last year led to the System's funding ratio (actuarial value of assets over actuarial accrued liability) increasing from 75.3% at July 1, 2014 to 76.6% at July 1, 2015. For purposes of measuring whether 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 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 78.2% at July 1, 2014 to 79.2% at July 1, 2015.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION I - BOARD SUMMARY

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

Growth in Assets

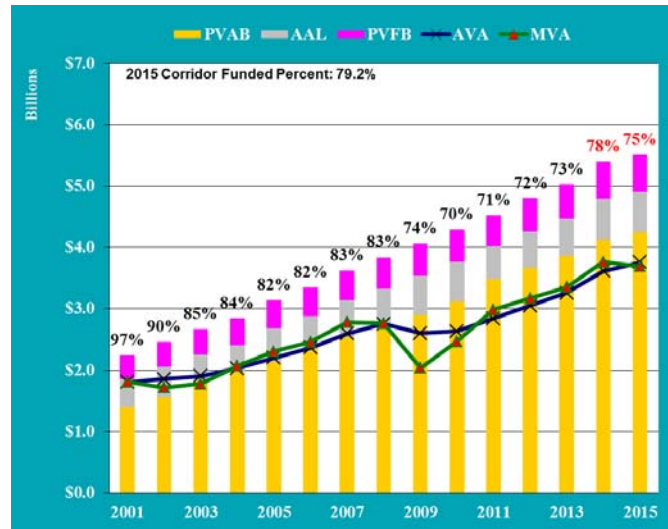


There was a decrease in the market value of assets (MVA) over last year due to a return of 0.4%. The actuarial value of assets (AVA) increased due to the continued recognition of past asset gains. The System recognized only a third of the asset loss this year and there remains \$66 million in unrecognized losses that will be phased in over the next few years.

Over the period July 1, 2001 to June 30, 2015, the System's assets returned approximately 7.29% per year measured at actuarial value, compared to 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. 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 (black #s). Starting in 2014, the comparison uses the market value of assets (red #s). These are the percentages shown in the graph labels.

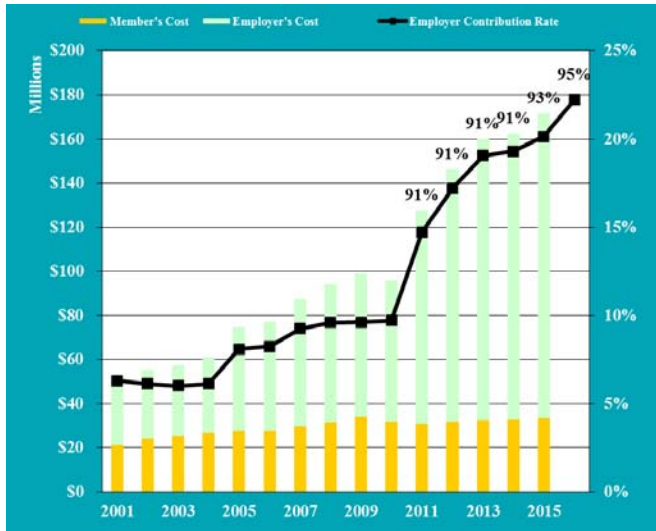


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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).

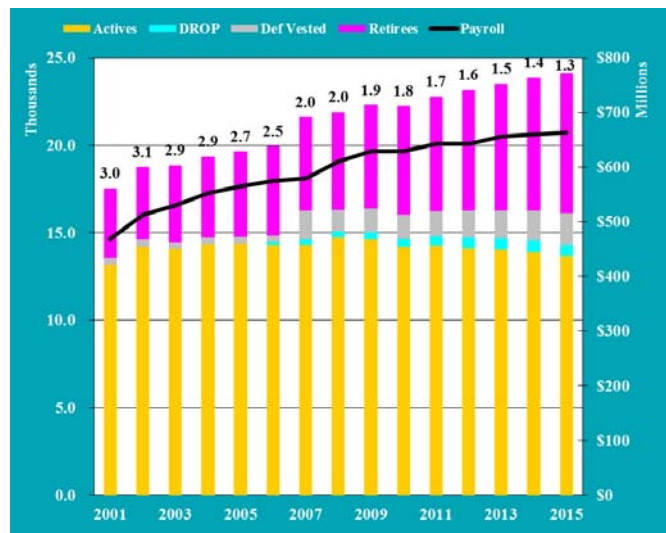


The member contribution rate is set by the County Ordinance. The County contribution rate is set by the actuarial process, as constrained by the corridor method. Note there is a lag in the rate shown. For example, the 2015 value is the rate prepared by the 2013 valuation and implemented for the period July 1, 2014 to June 30, 2015. Starting with FY 2011, the County contribution has been based on a corridor floor greater than 90%. The data labels show the change in this metric.

Participant Trends

As with many systems 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 3.0 actives to each inactive in 2001 to 1.3 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.

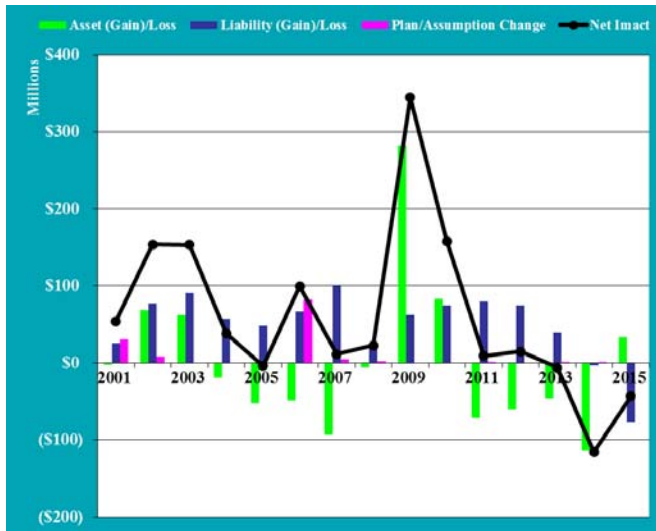
Starting in 2006, the chart also shows the number of DROP participants. Neither employer nor member contributions are made on their behalf, which leads to a slightly lower growth in effective covered payroll for this System.



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION I - BOARD SUMMARY

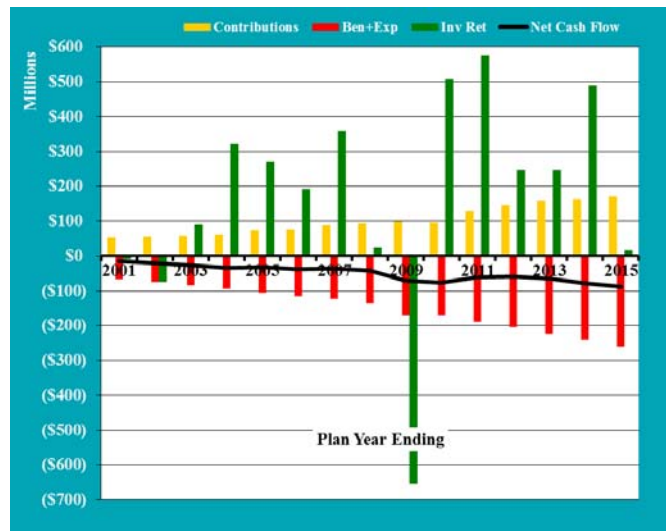
Gains and Losses



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 system such as this one. The implications of a system 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
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION I - BOARD SUMMARY

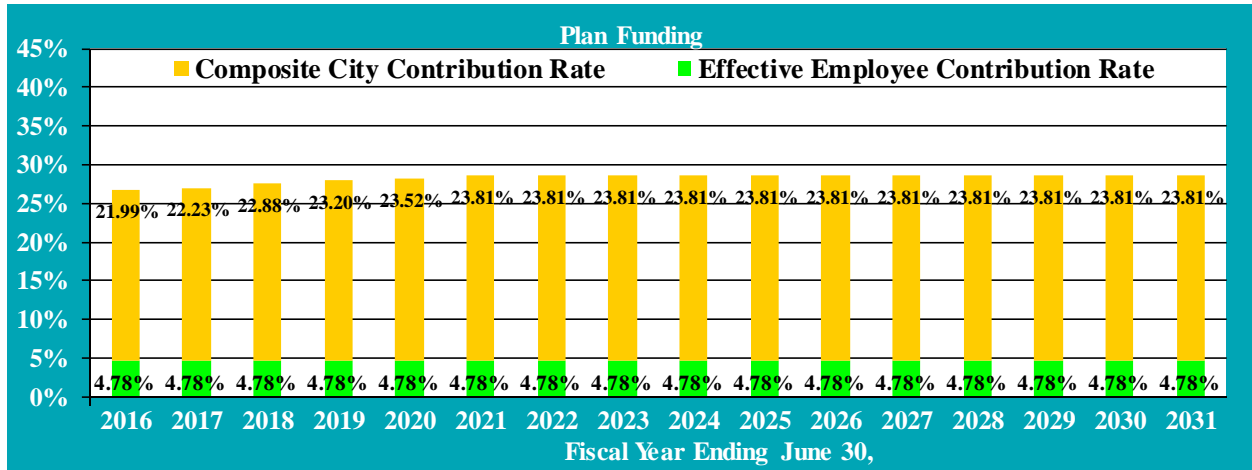
Future Outlook

Base-line Projections

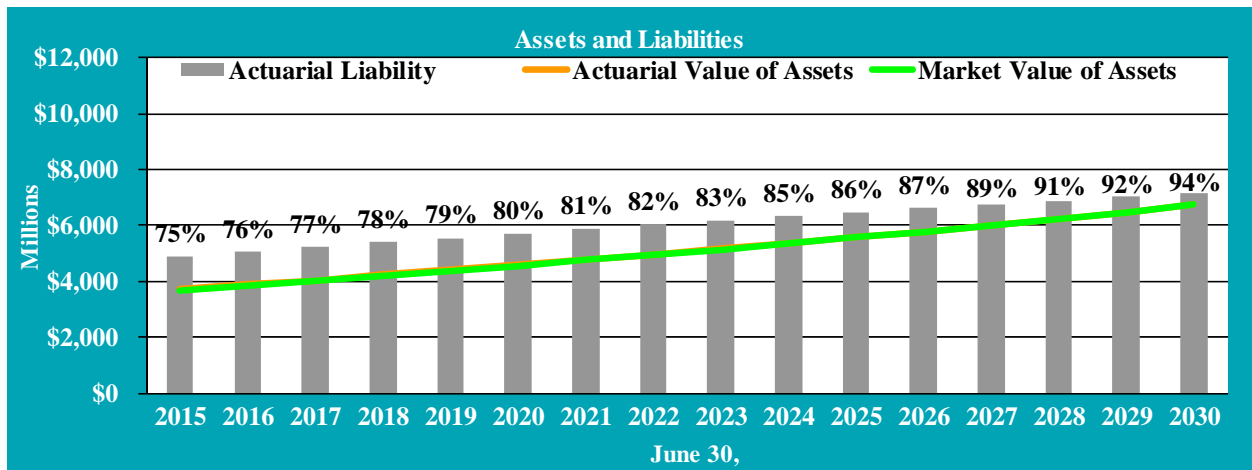
The two graphs below show the expected progress of the System over the next 15 years, assuming the System's assets earn 7.5% on their *market value*.

The floor of the County's corridor contribution calculation was increased to 95% for FY 2016. In FY 2017, the amortization target could range from 95% to 97% and continue increasing 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" illustrates the FY 2017 floor at 96% with 1% annual increases thereafter.



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 94% funded as of 2030.



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION I - BOARD SUMMARY

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 10.40% 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.

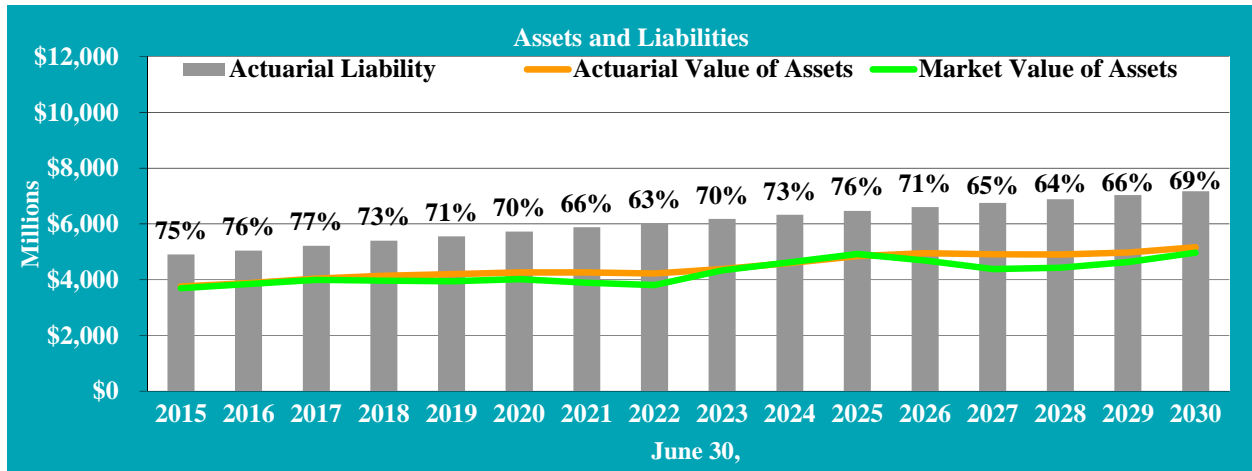
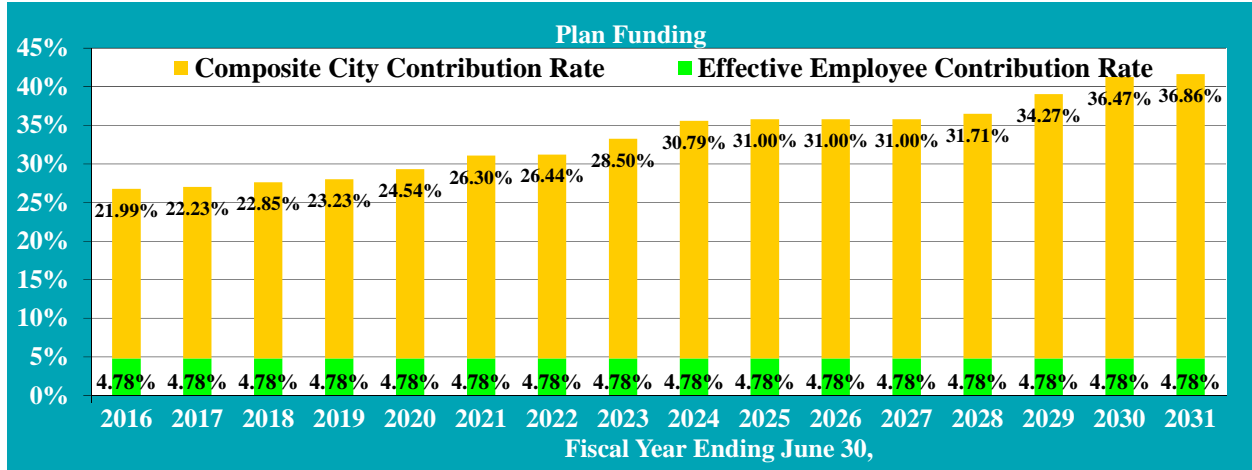
Table I-1			
Fiscal Year Ending June 30,	Average 5.0%	Average 7.5%	Average 10.0%
2015	7.67%	2.34%	-5.85%
2016	7.05	7.17	4.54
2017	1.67	17.72	18.15
2018	2.98	30.01	32.56
2019	5.16	19.42	-8.98
2020	-0.19	5.61	12.47
2021	1.48	11.03	17.81
2022	17.59	4.30	-13.95
2023	9.50	15.60	15.19
2024	9.25	-0.44	14.83
2025	-2.11	2.05	28.45
2026	-3.75	-8.37	24.92
2027	4.20	4.65	3.95
2028	7.27	-0.59	7.37
2029	9.17	7.83	10.22
Average	5.00%	7.50%	10.00%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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 22% to near 37% of pay. The System funding drops to as low as 63%, even with the ramping up of contributions.

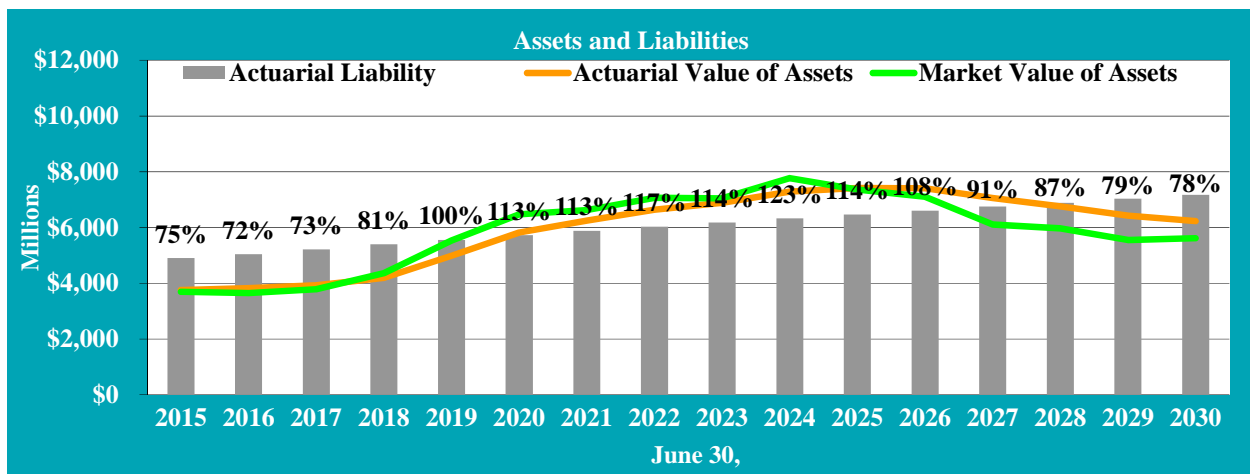
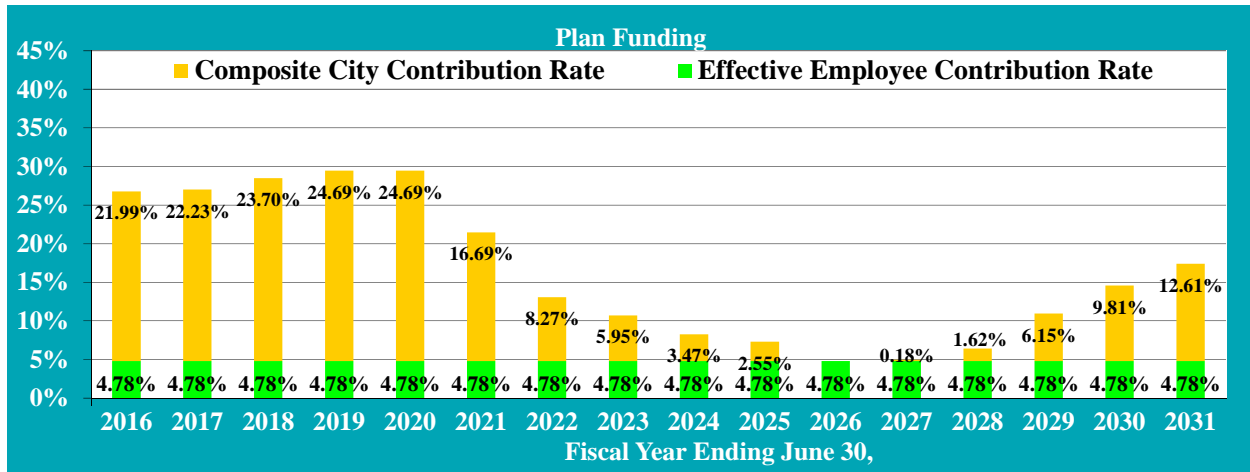


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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 increases over the next few years as the corridor floor is increased to 100%. After that time, the contribution drops dramatically as returns continue to push the funded percent over the 120% top of the corridor.

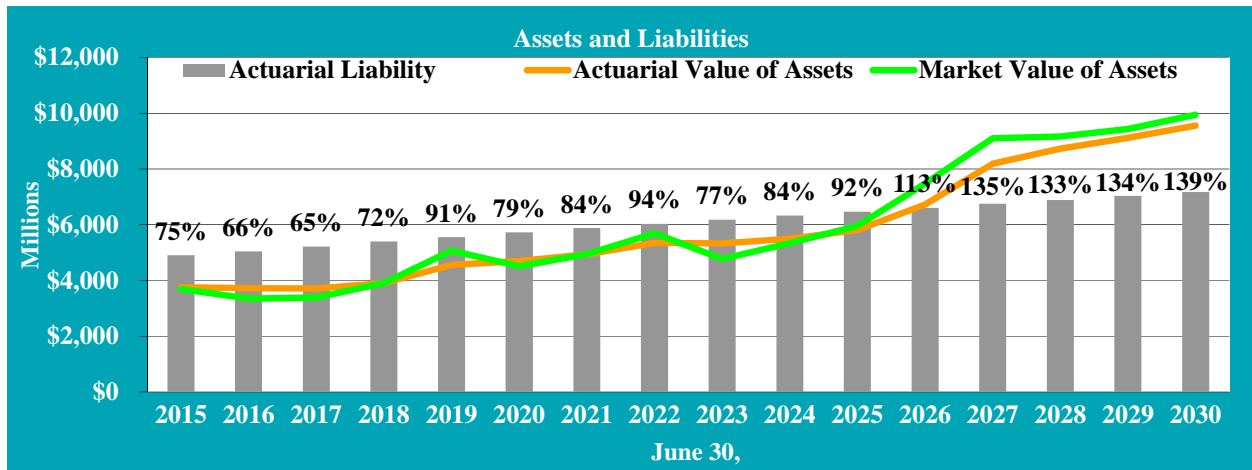
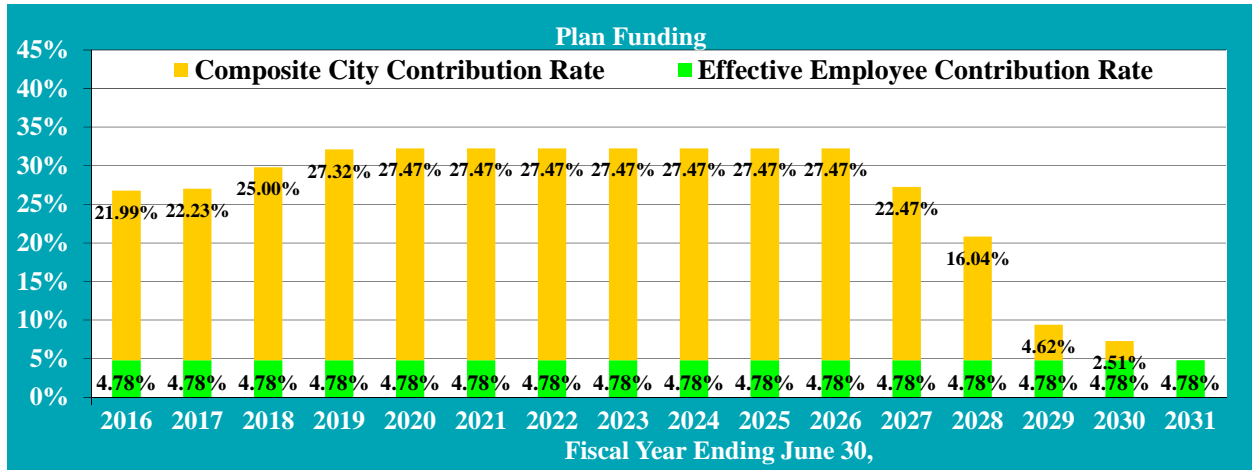


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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 increases during the phase-up period, holds at 27.47% and then drops off once the System reaches 100% funding.



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION I - BOARD SUMMARY

**Table I-2
Summary of Principal Plan Results**

Valuation as of:	7/1/2014	7/1/2015	% Chg.
<u>Participant Counts</u>			
Actives (excluding DROP)	13,862	13,669	-1.4%
DROPs	705	644	-8.7%
Terminated Vesteds	1,677	1,810	7.9%
In Pay Status	<u>7,626</u>	<u>8,021</u>	5.2%
Total	23,870	24,144	1.1%
Annual Salaries of Active Members	\$ 659,360,128	\$ 663,896,916	0.7%
Annual Retirement Allowances for Retired Members and Beneficiaries (Base amount only – not supplements)	\$ 185,919,600	\$ 198,006,052	6.5%
<u>Assets and Liabilities</u>			
Actuarial Accrued Liability (AL)	\$ 4,800,719,770	\$ 4,906,531,692	2.2%
Assets for Valuation Purposes (AVA)	<u>3,614,067,515</u>	<u>3,759,611,811</u>	4.0%
Unfunded Actuarial Liability	\$ 1,186,652,255	\$ 1,146,919,881	-3.3%
Actuarial Value Funding Ratio (AVA/AL)	75.3%	76.6%	
Market Value Funding Ratio (MVA/AL)	78.4%	75.3%	
Present Value of Accrued Benefits	\$ 4,133,674,068	\$ 4,245,707,514	2.7%
Market Value of Assets	<u>3,766,059,665</u>	<u>3,693,357,619</u>	-1.9%
Unfunded Accrued Liability (not less than \$0)	\$ 367,614,403	\$ 552,349,895	50.3%
Accrued Benefit Funding Ratio	91.1%	87.0%	
<u>Contributions as a Percentage of Payroll</u>			
Corridor Method:			
Normal Cost Contribution	8.06%	8.17%	
Increase Due to Amortized Changes	2.67%	2.67%	
Administrative Expense	<u>0.20%</u>	<u>0.20%</u>	
Base Rate	10.93%	11.04%	
Amortize to 95%	21.99%*	21.57%	
Amortize to 96%		22.23%	
Amortize to 97%		22.90%	

* The contribution rate currently being paid by the County in FY 2016 is 21.99%, which is based on the Amortize to 95% amount shown above.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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 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, 2014 and July 1, 2015;
- 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, 2015**

SECTION II - ASSETS

Table II-1		
Statement of Assets at Market Value		
	7/1/2014	7/1/2015
<u>Assets</u>		
Equity in County's Pooled Cash,		
Contributions Receivable and Other Assets	\$ 9,164,486	\$ 12,388,986
Accrued Interest and Dividends Receivable	10,981,723	12,922,379
Receivable from Sale of Investments	147,544,558	135,188,685
US Government Obligations	105,724,824	111,393,309
Asset-Backed Securities	176,859,179	203,674,859
Other Bonds and Notes	617,265,299	442,394,323
Common and Preferred Stock	1,418,927,394	1,162,158,227
Pooled and Mutual Funds	1,317,019,458	1,599,534,009
Short-Term Investments	135,148,368	189,194,158
Cash Collateral Received Under		
Securities Lending Agreements	39,803,388	259,247,449
Total Assets	\$ 3,978,438,677	\$ 4,128,096,384
<u>Liabilities</u>		
Payable for Collateral Received Under		
Securities Lending Agreements	\$ 39,803,388	\$ 259,247,449
Payable for Purchase of Investments	165,763,981	168,142,424
Accounts Payable and Accrued Expenses	6,811,643	7,348,892
Total Liabilities	\$ 212,379,012	\$ 434,738,765
Net Assets Available for Benefits	\$ 3,766,059,665	\$ 3,693,357,619

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION II - ASSETS

**Table II-2
Changes in Market Values**

Value of Assets – July 1, 2014		\$ 3,766,059,665
<u>Additions</u>		
Contributions:		
Employer Contributions	\$ 138,493,099	
Employee Contributions	33,193,593	
Total Contributions		\$ 171,686,692
Investment Income:		
Net Appreciation (Depreciation) in Fair Value of Investments	\$ (11,955,714)	
Interest	9,171,776	
Dividends	31,662,015	
Total Investment Income	\$ 28,878,077	
Investment Activity Expenses:		
Management Fees	\$ (12,057,166)	
Custodian Fees	(127,835)	
Consulting Expense	(77,729)	
Allocated Administrative Expenses	(886,615)	
Total Investment Activity Expenses	\$ (13,149,345)	
From Securities Lending Activities:		
Securities Lending Income	\$ 914,305	
Securities Lending Expenses		
Borrowers Rebates	0	
Management Fees	(300,580)	
Net Income from Securities Lending Activities	\$ 613,725	
Net Investment Income		<u>\$ 16,342,457</u>
Total Additions		\$ 188,029,149
<u>Deductions</u>		
Annuity Benefits	\$ (241,694,202)	
Disability Benefits	(7,942,996)	
Survivor Benefits	(5,238,597)	
Refunds and Other Expenses	(3,958,786)	
Administrative Expenses	(1,896,614)	
Total Deductions		<u>\$ (260,731,195)</u>
<u>Total</u>		
Net Increase (Decrease)		<u>\$ (72,702,046)</u>
Value of Assets – July 1, 2015		\$ 3,693,357,619

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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 following table illustrates the calculation of actuarial value of assets for the July 1, 2015 valuation.

Table II-3 Development of Actuarial Value of Assets as of July 1, 2015		
1.	Actuarial Value of Assets at July 1, 2014	\$ 3,614,067,515
2.	Amount in (1) with Interest to July 1, 2015	3,885,122,579
3.	Employer and Member Contributions for the Plan Year Ended June 30, 2015	171,686,692
4.	Interest on Contributions Assuming Received Uniformly Throughout the Year to July 1, 2015	6,438,251
5.	Disbursements from Trust Except Investment Expenses, July 1, 2014 Through June 30, 2015	(260,731,195)
6.	Interest on Disbursements Assuming Payments Made Uniformly Throughout the Year to July 1, 2015	(9,777,420)
7.	Expected Value of Asset at July 1, 2015 = (2) + (3) + (4) + (5) + (6)	3,792,738,907
8.	Market Value of Assets at July 1, 2015	<u>3,693,357,619</u>
9.	Excess of (8) Over (7)	\$ (99,381,288)
10.	Actuarial Value of Assets at July 1, 2015 = (7) + 33-1/3% of (9)	\$ 3,759,611,811

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, 2015**

SECTION II - ASSETS

Investment Performance

The market value of assets (MVA) returned 0.44% during 2015, which is less than the assumed 7.50% return. A return of 6.57% 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 33⅓% 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.

Table II-4 Annual Rates of Return				
Year Ending June 30,	Market Value	Actuarial Value	Total Return Standard & Poor's 500 Index	Barclays Global Aggregate Index¹
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%	4.3%	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%
2015	0.4%	6.6%	7.4%	1.8%

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, 2015**

SECTION II - ASSETS

Expected benefit payments are projected for the closed group valued at July 1, 2015. 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 21.99% for FY 2016, and then using the amortize to 96% rate for FY 2017, amortize to 97% FY 2017 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	Expected	Expected	
July 1,	Benefit Payments	County Contributions	
2015	\$ 274,606,000	\$ 152,148,000	
2016	295,404,000	158,437,000	
2017	318,955,000	167,915,000	
2018	328,538,000	175,432,000	
2019	344,221,000	183,162,000	
2020	361,210,000	190,954,000	
2021	382,515,000	196,683,000	
2022	400,226,000	202,583,000	
2023	415,459,000	208,661,000	
2024	430,075,000	214,920,000	

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION III - LIABILITIES

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

- **Disclosure** of system liabilities at July 1, 2014 and July 1, 2015;
- 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 and all assumptions are met.
- **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 and that all assumptions are met, including the 7.5% investment return. 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.

None of the liability figures disclosed in this report is meant to be a measure of the System's settlement liability.

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, 2015**

SECTION III - LIABILITIES

Table III-1		
Liabilities/Net (Surplus)/Unfunded		
	July 1, 2014	July 1, 2015
Present Value of Future Benefits		
Active Participant Benefits (excluding DROP)	\$ 2,630,746,552	\$ 2,629,571,995
DROP Participant Benefits	463,895,209	434,190,108
Retiree Benefits	2,231,839,621	2,368,491,190
Terminated Vested and Inactive Members	<u>73,454,154</u>	<u>82,225,383</u>
Present Value of Benefits (PVB)	\$ 5,399,935,536	\$ 5,514,478,676
Market Value of Assets (MVA)	\$ 3,766,059,665	\$ 3,693,357,619
Future Employee Contributions	220,640,696	222,163,564
Future County Contributions	<u>1,413,235,175</u>	<u>1,598,957,493</u>
Total Resources	\$ 5,399,935,536	\$ 5,514,478,676
Actuarial Accrued Liability		
Present Value of Benefits (PVB)	\$ 5,399,935,536	\$ 5,514,478,676
Present Value of Future Normal Costs (PVFNC)		
County Portion	378,575,070	385,783,420
Employee Portion	<u>220,640,696</u>	<u>222,163,564</u>
Actuarial Accrued Liability (AAL = PVB – PVFNC)	\$ 4,800,719,770	\$ 4,906,531,692
Actuarial Value of Assets (AVA)	<u>3,614,067,515</u>	<u>3,759,611,811</u>
Net (Surplus)/Unfunded (AAL – AVA)	\$ 1,186,652,255	\$ 1,146,919,881
Present Value of Accrued Benefits		
Present Value of Benefits (PVB)	\$ 5,399,935,536	\$ 5,514,478,676
Present Value of Future Benefit Accruals (PVFBA)	<u>1,266,261,468</u>	<u>1,268,771,162</u>
Present Value of Accrued Benefits (PVAB = PVB – PVFBA)	\$ 4,133,674,068	\$ 4,245,707,514
Market Value of Assets (MVA)	<u>3,766,059,665</u>	<u>3,693,357,619</u>
Net Unfunded, not less than \$0 (PVAB – MVA)	\$ 367,614,403	\$ 552,349,895

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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 7/1/2014	\$ 5,399,935,536	\$ 4,800,719,770	\$ 4,133,674,068
Liabilities 7/1/2015	<u>5,514,478,676</u>	<u>4,906,531,692</u>	<u>4,245,707,514</u>
Liability Increase (Decrease)	\$ 114,543,140	\$ 105,811,922	\$ 112,033,446
Change Due to:			
Plan Amendment and Ad Hoc COLAs	\$ 0	\$ 0	\$ 0
Actuarial (Gain)/Loss	<i>Not Calculated</i>	(73,129,057)	<i>Not Calculated</i>
Method and Assumption Changes	0	0	0
Benefits Accumulated and Other Sources	114,543,140	178,940,979	112,033,446

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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, 2015**

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, 2014	July 1, 2015
Fiscal Year	2016	2017
Normal Cost Rate	8.06%	8.17%
UAL Rate	2.67%	2.67%
Amortization of Amount Outside Corridor (to 90%)	7.78%	7.19%
Expense Rate	<u>0.20%</u>	<u>0.20%</u>
Total County Rate	18.71%	18.23%
Total Rate with Alternative Amortization Targets of		
95%	21.99% *	21.57%
96%		22.23%
97%		22.90%

* The actual contribution rate being paid by the County in FY 2016 is 21.99%, which is based on the amortize to 95% amount shown above.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION IV - CONTRIBUTIONS

**Table IV-3
Development of Corridor Contribution Rate**

	July 1, 2014 (for FY 2016)	July 1, 2015 (for FY 2017)
1. Present Value of Future Benefits		
a. Active Employees	\$ 2,630,746,552	\$ 2,629,571,995
b. DROP	463,895,209	434,190,108
c. Retired Members	2,231,839,621	2,368,491,190
d. Vested Terminated and Inactive Members	<u>73,454,154</u>	<u>82,225,383</u>
e. Total Present Value	\$ 5,399,935,536	\$ 5,514,478,676
2. Present Value of Future Normal Costs		
a. County Portion	\$ 378,575,070	\$ 385,783,420
b. Employee Portion	<u>220,640,696</u>	<u>222,163,564</u>
c. Total Present Value	\$ 599,215,766	\$ 607,946,984
3. Actuarial Accrued Liability (1) – (2)	\$ 4,800,719,770	\$ 4,906,531,692
4. Actuarial Value of Assets for Corridor Purposes		
a. Actuarial Assets	\$ 3,614,067,515	\$ 3,759,611,811
b. Outstanding Balance of Plan and Assumption Changes	<u>137,644,302</u>	<u>126,502,796</u>
c. Adjusted Assets (a) + (b)	\$ 3,751,711,817	\$ 3,886,114,607
5. Funding Ratio for Corridor Test	78.1%	79.2%
6. Liability to be Amortized if outside Corridor		
a. 90% x (3) - (4)(c)	\$ 568,935,976	\$ 529,763,916
b. (4)(c) - 120% x (3)	0	0
7. Active Member Payroll	\$ 659,360,128	\$ 663,896,916
8. Unfunded Liability Amortization Factor	11.0918	11.0918
9. Amortization as a % of Payroll (6)/(7)/(8)	7.78%	7.19%
10. County Contribution Results (Corridor)		
a. Normal Cost Rate	8.06%	8.17%
b. Administrative Expense Rate	0.20%	0.20%
c. Plan Change Amortizations	2.67%	2.67%
d. Amortization Outside Corridor (9)	<u>7.79%</u>	<u>7.19%</u>
e. Total County Contribution Rate June 30 ¹	18.72%	18.23%

¹ Alternative rate calculations developed by amortizing to 95% for FY 2016 is 21.99% and amortizing to 96% for FY 2017 is 22.23%.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION V - ACCOUNTING STATEMENT INFORMATION

ASC Topic 960 of the Financial Accounting Standards Board (FASB) describes certain disclosures regarding a plan's funded status.

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. The relevant amounts as of July 1, 2014 and July 1, 2015 are exhibited in Table V-1, which also includes a reconciliation of liabilities determined as of the prior valuation, July 1, 2014, to the liabilities as of July 1, 2015.

Table V-2 is a history of gains and losses in Accrued Liability and Table V-3 is the Solvency Test which shows the portion of Accrued Liability covered by Assets. See our report dated October 8, 2015 for the required disclosures under GASB Statement Number 67.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION V - ACCOUNTING STATEMENT INFORMATION

**Table V-1
Accounting Statement Information**

	July 1, 2014	July 1, 2015
A. FASB ASC Topic 960 Basis		
1. Present Value of Benefits Accrued and Vested to Date		
a. Members Currently Receiving Payments	\$ 2,231,839,621	\$ 2,368,491,190
b. Vested Terminated and Inactive Members	73,454,154	82,225,383
c. DROP	463,895,209	434,190,108
d. Active Members	<u>759,791,083</u>	<u>779,435,620</u>
e. Total PVVB	\$ 3,528,980,067	\$ 3,664,342,301
2. Present Value of Non-Vested Accrued Benefits for Active Members	<u>604,694,001</u>	<u>581,365,213</u>
3. Total Present Value of Accrued Benefits	\$ 4,133,674,068	\$ 4,245,707,514
4. Assets at Market Value	<u>3,766,059,665</u>	<u>3,693,357,619</u>
5. Unfunded Present Value of Accrued Benefits, But Not Less Than Zero	\$ 367,614,403	\$ 552,349,895
6. Ratio of Assets to Value of Benefits (4) / (3)	91.1%	87.0%
B. Statement of Changes in Present Value of Accrued Benefits		
Actuarial Present Value of Accrued Benefits as of July 1, 2014		\$ 4,133,674,068
Increase (Decrease) During Year Attributable to:		
Passage of Time		\$ 300,319,258
Benefit Paid – FY 2015		(258,834,581)
Plan Amendment		0
Assumption Changes		0
Benefits Accrued, Other Gains/Losses		<u>70,548,769</u>
Net Increase (Decrease)		\$ 112,033,446
Actuarial Present Value of Accrued Benefits as of July 1, 2015		\$ 4,245,707,514

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

SECTION V - ACCOUNTING STATEMENT INFORMATION

**Table V-2
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	<i>Gain (or Loss) for Year ending June 30,</i>					
	2010	2011	2012	2013	2014	2015
Investment Income	\$ (83,485,934)	\$ 71,698,746	\$ 59,620,255	\$ 46,004,262	\$113,443,149	\$ (33,127,096)
Combined Liability Experience	<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>	<u>73,129,057</u>
Gain (or Loss) During Year from Financial Experience	\$ (158,206,239)	\$ (7,745,385)	\$ (14,926,834)	\$ 6,602,385	\$116,888,836	\$ 40,001,961
Non-Recurring Items	<u>0</u>	<u>(1,602,061)</u>	<u>0</u>	<u>(727,193)</u>	<u>(1,462,698)</u>	<u>0</u>
Composite Gain (or Loss) During Year	\$ (158,206,239)	\$ (9,347,446)	\$ (14,926,834)	\$ 5,875,192	\$115,426,138	\$ 40,001,961

**Table V-3
Solvency Test
Aggregate Accrued Liabilities For**

Valuation Date	(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)
July 1, 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	3,261,923,577	100%	100%	21%
2014	363,335,228	2,769,188,984	1,668,195,558	3,614,067,515	100%	100%	29%
2015	372,037,954	2,884,906,681	1,649,587,057	3,759,611,811	100%	100%	30%

*Reported Assets are the actuarial value of assets in this demonstration.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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, 2015, and the inactive data was collected as of July 1, 2015.

Active pay information is adjusted to project the pay expected to be earned from July 1, 2015 through June 30, 2016. The annual payroll was provided as of December 31, 2014 and adjusted to July 1, 2014. For County employees this included a 1.1% increase as of July 1, 2015. For School employees this included a 0.62% increase as of July 1, 2015.

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

Summary of Membership Data as of July 1, 2015

		Active Members*		
		Count	Average Age	Average Salary
School	Plan A	2,251	51.45	\$ 31,289
	Plan B	2,491	52.21	36,550
	Plan C	599	42.94	18,117
	Plan D	<u>351</u>	<u>44.45</u>	<u>21,180</u>
	Total	5,692	50.46	\$ 31,582
County	Plan A	2,535	47.89	\$ 61,380
	Plan B	4,251	47.21	61,947
	Plan C	306	36.93	48,836
	Plan D	<u>885</u>	<u>38.55</u>	<u>56,787</u>
	Total	7,977	46.07	\$ 60,691
Total Systems	Plan A	4,786	49.56	\$ 47,227
	Plan B	6,742	49.06	52,563
	Plan C	905	40.91	28,504
	Plan D	<u>1,236</u>	<u>40.23</u>	<u>46,675</u>
	Total	13,669	47.90	\$ 48,570

*Excludes DROP participants.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

APPENDIX A - MEMBERSHIP INFORMATION

	Inactive Members		
	School	County	Total
Service Retirement			
Count	2,867	4,272	7,139
Annual Basic Benefit	\$ 49,151,268	\$ 134,855,559	\$ 184,006,827
Annual Supplements	8,061,960	24,528,564	32,590,523
Service - Connected Disability			
Count	75	74	149
Annual Basic Benefit ¹	\$ 1,653,827	\$ 2,187,083	\$ 3,840,910
Ordinary Disability			
Count	215	153	368
Annual Basic Benefit	\$ 1,985,924	\$ 2,376,195	\$ 4,362,119
Beneficiaries			
Count	24	341	365
Annual Basic Benefit	\$ 254,185	\$ 5,542,011	\$ 5,796,196
DROP			
Count	148	496	644
Annual Basic Benefit	\$ 3,682,822	\$ 18,709,589	\$ 22,392,411
Annual Supplements	1,845,527	7,984,422	9,829,949
Vested Former Members			
Count			1,810
Annual Basic Benefit ²			\$ 12,646,586

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

²Benefits are payable at age 65.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

APPENDIX A - MEMBERSHIP INFORMATION

Membership Statistics

The number of retired members, beneficiaries, and disabled members can be analyzed as follows:

	<u>July 1, 2014</u>		<u>July 1, 2015</u>		<u>% Change</u>	
	Count	Average Monthly Benefit	Count	Average Monthly Benefit	Count	Average Monthly Benefit
Inactive Members						
Service Retirement						
Basic Benefit	6,757	\$ 2,127	7,139	\$ 2,148	5.7%	1.0%
Supplement	1,860	1,364	1,938	1,401	4.2%	2.7%
Service-Connected Disability	149	2,105	149	2,148	0.0%	2.0%
Ordinary Disability	374	968	368	988	-1.6%	2.1%
Beneficiaries	<u>346</u>	<u>1,284</u>	<u>365</u>	<u>1,323</u>	<u>5.5%</u>	<u>3.1%</u>
Total/Average (Basic Benefit)	7,626	\$ 2,032	8,021	\$ 2,057	5.2%	1.3%

Data Reconciliation from July 1, 2014 to July 1, 2015

	Active	DROP	Terminated Vested	Retired	Service-Connected Disability	Ordinary Disability	Beneficiary	Total
Participant count as of July 1, 2014	13,862	705	1,677	6,757	149	374	346	23,870
New Hires / Re-hires	1,280		(14)					1,266
Terminated Vested	(137)		137					0
DROP	(247)	247						0
Retired	(228)	(303)	(31)	562				0
Deceased with beneficiary	0	(1)		(38)	(1)	(1)	41	0
Deceased without beneficiary		(4)		(148)	(2)	(18)	(22)	(194)
Benefits Expired								0
Ordinary Disability	(10)		(3)			13		0
Service-Connected Disability	(2)				2			0
Terminated Not Vested	(849)							(849)
Corrections			44	6	1			51
Change	(193)	(61)	133	382	0	(6)	19	274
Participant count as of July 1, 2015	13,669	644	1,810	7,139	149	368	365	24,144

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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	0	10	0	0	0	0	0	0	10
25 to 29	0	87	30	2	0	0	0	0	119
30 to 34	0	81	122	26	0	0	0	0	229
35 to 39	0	45	115	83	21	0	0	0	264
40 to 44	1	52	74	67	69	23	7	0	293
45 to 49	0	41	70	60	83	96	97	6	453
50 to 54	0	49	69	66	94	74	127	21	500
55 to 59	2	43	55	55	63	64	59	23	364
60 to 64	1	25	45	56	28	25	22	13	215
65 & up	2	12	22	13	10	9	16	4	88
Total	6	445	602	428	368	291	328	67	2,535

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	\$ 296,900	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 296,900
25 to 29	0	3,501,189	1,308,478	109,696	0	0	0	0	4,919,363
30 to 34	0	3,800,650	5,978,361	1,261,882	0	0	0	0	11,040,893
35 to 39	0	2,247,423	6,234,201	4,851,426	1,214,595	0	0	0	14,547,645
40 to 44	20,481	2,569,221	3,930,759	3,976,391	4,749,616	1,872,854	479,947	0	17,599,269
45 to 49	0	1,647,015	3,551,233	3,521,862	5,693,490	7,585,442	7,474,084	529,954	30,003,080
50 to 54	0	1,969,827	3,455,209	3,860,591	6,294,250	5,992,306	10,906,397	1,730,669	34,209,249
55 to 59	14,353	1,839,337	2,808,522	3,148,221	4,451,836	4,838,982	4,928,096	2,296,890	24,326,237
60 to 64	14,810	953,046	2,221,774	2,954,503	1,763,467	1,936,348	2,082,818	1,828,637	13,755,403
65 & up	13,962	365,963	992,143	665,644	617,459	576,540	1,302,959	366,016	4,900,686
Total	\$ 63,606	\$ 19,190,571	\$ 30,480,680	\$ 24,350,216	\$ 24,784,713	\$ 22,802,472	\$ 27,174,301	\$ 6,752,166	\$ 155,598,725

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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	11	0	0	0	0	0	0	11
25 to 29	0	199	65	0	0	0	0	0	264
30 to 34	0	207	205	55	0	0	0	0	467
35 to 39	0	125	169	111	22	0	0	0	427
40 to 44	1	123	177	128	85	11	6	0	531
45 to 49	1	134	203	143	82	58	49	6	676
50 to 54	0	119	201	179	101	68	68	10	746
55 to 59	0	122	177	155	86	53	32	10	635
60 to 64	1	58	110	107	67	9	12	5	369
65 & up	0	17	37	32	22	8	8	1	125
Total	3	1,115	1,344	910	465	207	175	32	4,251

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	\$ 456,131	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 456,131
25 to 29	0	9,345,394	2,928,176	0	0	0	0	0	12,273,570
30 to 34	0	10,903,764	10,428,981	2,896,616	0	0	0	0	24,229,361
35 to 39	0	7,073,500	9,715,298	6,383,044	1,406,256	0	0	0	24,578,098
40 to 44	74,136	6,554,388	11,079,655	8,417,551	6,018,598	763,582	451,836	0	33,359,746
45 to 49	13,835	6,615,213	12,865,736	9,514,638	6,070,795	4,853,017	3,749,939	497,984	44,181,157
50 to 54	0	6,109,784	12,324,977	11,910,721	7,921,655	5,499,637	5,327,462	867,878	49,962,114
55 to 59	0	6,644,499	11,144,414	10,135,557	6,279,284	4,172,576	2,984,297	926,611	42,287,238
60 to 64	66,022	3,145,827	7,060,595	6,998,738	4,968,904	612,951	1,124,967	396,111	24,374,115
65 & up	0	712,220	2,004,710	2,186,307	1,493,045	606,836	570,197	59,736	7,633,051
Total	\$ 153,993	\$ 57,560,720	\$ 79,552,542	\$ 58,443,172	\$ 34,158,537	\$ 16,508,599	\$ 14,208,698	\$ 2,748,320	\$ 263,334,581

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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	20	9	0	0	0	0	0	0	29
25 to 29	53	31	0	0	0	0	0	0	84
30 to 34	41	19	0	0	0	0	0	0	60
35 to 39	19	9	0	0	0	0	0	0	28
40 to 44	17	9	0	0	0	0	0	0	26
45 to 49	15	12	0	0	0	0	0	0	27
50 to 54	20	6	0	0	0	0	0	0	26
55 to 59	9	6	0	0	0	0	0	0	15
60 to 64	5	3	0	0	0	0	0	0	8
65 & up	2	1	0	0	0	0	0	0	3
Total	201	105	0	0	0	0	0	0	306

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	\$ 773,736	\$ 379,191	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,152,927
25 to 29	2,355,270	1,505,137	0	0	0	0	0	0	3,860,407
30 to 34	2,008,611	1,001,763	0	0	0	0	0	0	3,010,374
35 to 39	833,824	440,389	0	0	0	0	0	0	1,274,213
40 to 44	904,594	430,266	0	0	0	0	0	0	1,334,860
45 to 49	815,155	711,727	0	0	0	0	0	0	1,526,882
50 to 54	1,029,139	453,909	0	0	0	0	0	0	1,483,048
55 to 59	387,730	369,567	0	0	0	0	0	0	757,297
60 to 64	252,547	217,952	0	0	0	0	0	0	470,499
65 & up	25,220	47,969	0	0	0	0	0	0	73,189
Total	\$ 9,385,826	\$ 5,557,870	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 14,943,696

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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	53	22	0	0	0	0	0	0	75
25 to 29	100	85	0	0	0	0	0	0	185
30 to 34	108	51	0	0	0	0	0	0	159
35 to 39	56	55	0	0	0	0	0	0	111
40 to 44	52	35	0	0	0	0	0	0	87
45 to 49	49	41	1	0	0	0	0	0	91
50 to 54	48	41	0	0	0	0	0	0	89
55 to 59	31	24	0	1	0	0	0	0	56
60 to 64	16	10	0	0	1	0	0	0	27
65 & up	1	4	0	0	0	0	0	0	5
Total	514	368	1	1	1	0	0	0	885

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	\$ 2,274,866	\$ 900,238	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 3,175,104
25 to 29	4,805,217	4,274,937	0	0	0	0	0	0	9,080,154
30 to 34	5,866,523	2,784,852	0	0	0	0	0	0	8,651,375
35 to 39	3,160,350	3,639,081	0	0	0	0	0	0	6,799,431
40 to 44	2,944,677	2,215,593	0	0	0	0	0	0	5,160,270
45 to 49	2,667,454	2,541,023	29,839	0	0	0	0	0	5,238,316
50 to 54	3,226,001	2,644,006	0	0	0	0	0	0	5,870,007
55 to 59	2,088,017	1,467,454	0	178,442	0	0	0	0	3,733,913
60 to 64	1,214,946	785,326	0	0	88,667	0	0	0	2,088,939
65 & up	100,301	358,910	0	0	0	0	0	0	459,211
Total	\$ 28,348,352	\$ 21,611,420	\$ 29,839	\$ 178,442	\$ 88,667	\$ 0	\$ 0	\$ 0	\$ 50,256,720

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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	0	4	0	0	0	0	0	0	4
25 to 29	1	22	6	1	0	0	0	0	30
30 to 34	12	45	30	3	0	0	0	0	90
35 to 39	10	97	48	23	3	0	0	0	181
40 to 44	3	137	80	44	17	0	0	0	281
45 to 49	4	162	105	41	27	8	15	3	365
50 to 54	7	166	140	63	33	12	18	6	445
55 to 59	5	142	147	62	36	13	8	4	417
60 to 64	4	78	102	51	17	8	4	1	265
65 & up	2	64	72	20	7	2	3	3	173
Total	48	917	730	308	140	43	48	17	2,251

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	\$ 97,273	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 97,273
25 to 29	16,934	637,974	239,189	30,760	0	0	0	0	924,857
30 to 34	351,481	1,173,171	1,085,105	114,057	0	0	0	0	2,723,814
35 to 39	221,898	2,774,214	1,558,048	1,098,440	141,623	0	0	0	5,794,223
40 to 44	25,666	3,538,244	2,692,490	1,769,268	932,475	0	0	0	8,958,143
45 to 49	104,029	3,992,356	3,185,837	1,657,735	1,285,445	455,010	1,005,790	180,124	11,866,326
50 to 54	118,660	3,570,082	4,339,121	2,575,090	1,573,277	630,804	1,069,261	416,230	14,292,525
55 to 59	121,363	3,088,098	4,464,731	2,366,621	1,611,687	761,463	511,821	308,198	13,233,982
60 to 64	50,433	1,604,904	2,829,173	1,900,698	752,819	416,240	256,873	49,064	7,860,204
65 & up	49,505	1,238,573	2,019,832	661,896	312,834	83,453	150,494	163,691	4,680,278
Total	\$ 1,059,969	\$ 21,714,889	\$ 22,413,526	\$ 12,174,565	\$ 6,610,160	\$ 2,346,970	\$ 2,994,239	\$ 1,117,307	\$ 70,431,625

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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	0	11	0	0	0	0	0	0	11
25 to 29	0	17	15	0	0	0	0	0	32
30 to 34	2	21	30	13	1	0	0	0	67
35 to 39	4	54	44	33	10	1	0	0	146
40 to 44	7	85	73	53	34	12	0	0	264
45 to 49	8	125	123	73	39	30	28	2	428
50 to 54	12	153	129	106	82	46	16	8	552
55 to 59	2	99	137	133	72	26	6	5	480
60 to 64	4	90	107	81	31	11	7	4	335
65 & up	0	32	68	49	17	4	5	1	176
Total	39	687	726	541	286	130	62	20	2,491

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	\$ 366,299	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 366,299
25 to 29	0	467,593	592,034	0	0	0	0	0	1,059,627
30 to 34	36,189	649,020	1,215,429	607,650	66,972	0	0	0	2,575,260
35 to 39	85,445	1,620,606	1,779,971	1,501,263	574,553	41,608	0	0	5,603,446
40 to 44	92,763	2,203,509	2,739,843	2,431,345	1,812,446	910,848	0	0	10,190,754
45 to 49	101,978	2,776,725	4,092,906	3,137,409	2,118,334	1,863,047	2,124,079	170,837	16,385,315
50 to 54	134,763	2,971,696	3,779,777	4,862,728	4,455,543	2,886,121	1,100,486	575,377	20,766,491
55 to 59	15,421	2,115,367	4,266,044	5,472,068	3,559,273	1,457,725	401,429	263,111	17,550,438
60 to 64	31,113	1,767,614	3,166,185	3,139,101	1,390,022	674,345	450,532	315,954	10,934,866
65 & up	0	613,155	1,898,382	1,768,833	763,944	235,434	278,648	54,306	5,612,702
Total	\$ 497,672	\$ 15,551,584	\$ 23,530,571	\$ 22,920,397	\$ 14,741,087	\$ 8,069,128	\$ 4,355,174	\$ 1,379,585	\$ 91,045,198

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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	37	3	0	0	0	0	0	0	40
25 to 29	44	7	0	0	0	0	0	0	51
30 to 34	65	7	0	0	0	0	0	0	72
35 to 39	66	2	0	0	0	0	0	0	68
40 to 44	89	7	0	0	0	0	0	0	96
45 to 49	87	16	0	0	0	0	0	0	103
50 to 54	60	16	0	0	0	0	0	0	76
55 to 59	49	8	0	0	0	0	0	0	57
60 to 64	21	5	0	0	0	0	0	0	26
65 & up	9	1	0	0	0	0	0	0	10
Total	527	72	0	0	0	0	0	0	599

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	\$ 473,556	\$ 98,487	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 572,043
25 to 29	796,642	208,280	0	0	0	0	0	0	1,004,922
30 to 34	1,100,790	198,061	0	0	0	0	0	0	1,298,851
35 to 39	1,088,720	51,197	0	0	0	0	0	0	1,139,917
40 to 44	1,462,517	204,705	0	0	0	0	0	0	1,667,222
45 to 49	1,230,427	497,092	0	0	0	0	0	0	1,727,519
50 to 54	952,827	538,319	0	0	0	0	0	0	1,491,146
55 to 59	888,799	300,768	0	0	0	0	0	0	1,189,567
60 to 64	402,009	156,351	0	0	0	0	0	0	558,360
65 & up	182,010	20,784	0	0	0	0	0	0	202,794
Total	\$ 8,578,297	\$ 2,274,044	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 10,852,341

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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	19	7	0	0	0	0	0	0	26
25 to 29	18	6	0	0	0	0	0	0	24
30 to 34	14	7	0	0	0	0	0	0	21
35 to 39	26	6	0	0	0	0	0	0	32
40 to 44	45	15	0	0	0	0	0	0	60
45 to 49	49	23	0	0	0	0	0	0	72
50 to 54	38	23	0	0	0	0	0	0	61
55 to 59	24	8	0	0	0	0	0	0	32
60 to 64	13	5	0	0	0	0	0	0	18
65 & up	5	0	0	0	0	0	0	0	5
Total	251	100	0	0	0	0	0	0	351

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	\$ 303,350	\$ 187,231	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 490,581
25 to 29	306,038	211,501	0	0	0	0	0	0	517,539
30 to 34	211,848	259,957	0	0	0	0	0	0	471,805
35 to 39	447,077	230,064	0	0	0	0	0	0	677,141
40 to 44	682,524	516,563	0	0	0	0	0	0	1,199,087
45 to 49	752,505	718,258	0	0	0	0	0	0	1,470,763
50 to 54	626,657	821,454	0	0	0	0	0	0	1,448,111
55 to 59	432,721	242,649	0	0	0	0	0	0	675,370
60 to 64	241,322	141,193	0	0	0	0	0	0	382,515
65 & up	101,126	0	0	0	0	0	0	0	101,126
Total	\$ 4,105,168	\$ 3,328,870	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 7,434,038

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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	129	77	0	0	0	0	0	0	206
25 to 29	216	454	116	3	0	0	0	0	789
30 to 34	242	438	387	97	1	0	0	0	1,165
35 to 39	181	393	376	250	56	1	0	0	1,257
40 to 44	215	463	404	292	205	46	13	0	1,638
45 to 49	213	554	502	317	231	192	189	17	2,215
50 to 54	185	573	539	414	310	200	229	45	2,495
55 to 59	122	452	516	406	257	156	105	42	2,056
60 to 64	65	274	364	295	144	53	45	23	1,263
65 & up	21	131	199	114	56	23	32	9	585
Total	1,589	3,809	3,403	2,188	1,260	671	613	136	13,669

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	\$ 3,825,508	\$ 2,781,750	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 6,607,258
25 to 29	8,280,101	20,152,005	5,067,877	140,456	0	0	0	0	33,640,439
30 to 34	9,575,442	20,771,238	18,707,876	4,880,205	66,972	0	0	0	54,001,733
35 to 39	5,837,314	18,076,474	19,287,518	13,834,173	3,337,027	41,608	0	0	60,414,114
40 to 44	6,207,358	18,232,489	20,442,747	16,594,555	13,513,135	3,547,284	931,783	0	79,469,351
45 to 49	5,685,383	19,499,409	23,725,551	17,831,644	15,168,064	14,756,516	14,353,892	1,378,899	112,399,358
50 to 54	6,088,047	19,079,077	23,899,084	23,209,130	20,244,725	15,008,868	18,403,606	3,590,154	129,522,691
55 to 59	3,948,404	16,067,739	22,683,711	21,300,909	15,902,080	11,230,746	8,825,643	3,794,810	103,754,042
60 to 64	2,273,202	8,772,213	15,277,727	14,993,040	8,963,879	3,639,884	3,915,190	2,589,766	60,424,901
65 & up	472,124	3,357,574	6,915,067	5,282,680	3,187,282	1,502,263	2,302,298	643,749	23,663,037
Total	\$ 52,192,883	\$ 146,789,968	\$ 156,007,158	\$ 118,066,792	\$ 80,383,164	\$ 49,727,169	\$ 48,732,412	\$ 11,997,378	\$ 663,896,924

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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.

Mortality table was set in conjunction with the 2010 experience study to include a static projection to 2015. The System is embarking on a new experience study in 2015 which will determine whether the margin for future mortality improvements remains and to propose revised tables.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

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

Mortality table was set in conjunction with the 2010 experience study to include a static projection to 2015 with ages set forward five years. The System is embarking on a new experience study in 2015 which will determine whether the margin for future mortality improvements remains and to propose revised tables.

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

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

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
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.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

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, 2015**

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 are assumed to accrue at 50% of each participant's annual average, but capped at 124 hours per year.

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. Rationale for Assumptions

The actuarial assumptions were adopted by the Board of Trustees upon the recommendation of the actuary, based on an experience study performed in 2011. The results of this study were presented in a report dated May 2011 and are incorporated into this report by reference.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

4. Changes since Last Valuation

None

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.

The 90% corridor floor is being increased to 100% by 2020. As of the 2014 valuation, the floor had reached 95%. Amortization is currently performed using an open 15-year period (with the exception of prior changes identified in Section IV). Once the corridor floor reaches 100% the 15-year period will be closed. Continued use of an open amortization period would result in the System's UAL never being fully exhausted.

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.

3. Changes since Last Valuation

None

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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 (\$118,500 in 2015).

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.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015

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.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015

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.

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.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015

APPENDIX C - SUMMARY OF PLAN PROVISIONS

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.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JULY 1, 2015**

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 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

None



Classic Values, Innovative Advice