

**Fairfax County Employees'  
Retirement System**

**Actuarial Valuation  
as of July 1, 2013**

**Produced by **Cheiron****

**March 2014**

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March 24, 2014

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, 2013***

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, 2013. 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 2015 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.

The assumptions and methods used in determining the assets, liabilities, and the annual required contributions of the employer as defined by the Government Accounting Standards Board (GASB) meet the parameters set by GASB Statement Number 25, *Financial Reporting for Defined Benefit Pension Plans and Note Disclosures for Defined Contribution Plans*.

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  
March 24, 2014

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

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**FOREWORD**

Cheiron has performed the actuarial valuation of the Fairfax County Employees' Retirement System as of July 1, 2013. 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 2015; 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 25.

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.

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, 2013

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 but otherwise will remain the same as long as the System's actuarial funded ratio remains within a corridor of 90% to 120%.

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 both normal cost and 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 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. Once the funded status is within the corridor, the contribution rate will return to the normal cost rate plus expense rate and any remaining amortization for benefit or assumption changes.

The valuation as of July 1, 2013 shows that the actuarial funded ratio of this System (including a credit for the amortization of prior benefit increases and assumption changes) remains outside of the corridor.

The employer contribution rate for FY 2015 as calculated under this method decreases from 18.70% to 18.32% of payroll, on the basis of this year's valuation results. The County's FY 2014 contribution was actually based on amortizing to reach 91% funded, rather than amortizing just to re-enter the corridor and in FY 2015 they are likely to contribute an amount to amortize to 93% funded. On that basis, the contribution in FY 2014 was 19.30% and for FY 2015 it will be 20.15%.

The calculated contribution rate for Governmental Accounting Standards Board (GASB) purposes is based on a rolling 15-year amortization of the actuarial unfunded liability.

**Trends**

The System outperformed the investment assumption during the fiscal year ending in 2013, causing an actuarial gain on the asset side of the System. The actual return on a market value basis was approximately 7.81%. On an actuarial value basis, the assets returned 9.02% compared with an assumed rate of return of 7.5%. The gain recognized for funding purposes was \$46.0 million.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**SECTION I  
BOARD SUMMARY**

The measurement of liabilities produced a loss this year in the amount of \$39.4 million. This loss 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 6.1% for active participants who were in both the July 1, 2012 and July 1, 2013 valuations. This was greater than the expected salary growth based on the actuarial assumption, which worked out to average 4.7%. This resulted in a loss of \$12.7 million. The annual payroll was provided as of December 31, 2012 and adjusted to July 1, 2013. For County employees this included annualizing the 2.18% increase as of July 1, 2012 and applying a 2.5% increase effective January 1, 2013. For School employees this included annualizing the 3.25% increase from July 1, 2012, applying a 3% increase as of July 1, 2013 and an additional 2% 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 1.4% last year, creating a liability gain of \$22.0 million.
- The 2013 valuation incorporates actual sick leave hours into both eligibility and projected benefits for active participants. The accrual of additional sick leave from 2012 to 2013 produced a loss of \$3.9 million as we do not currently include an assumption regarding sick leave accrual.
- 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, and this year they contributed \$6.7 million to that number.
- There was a \$38.1 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.

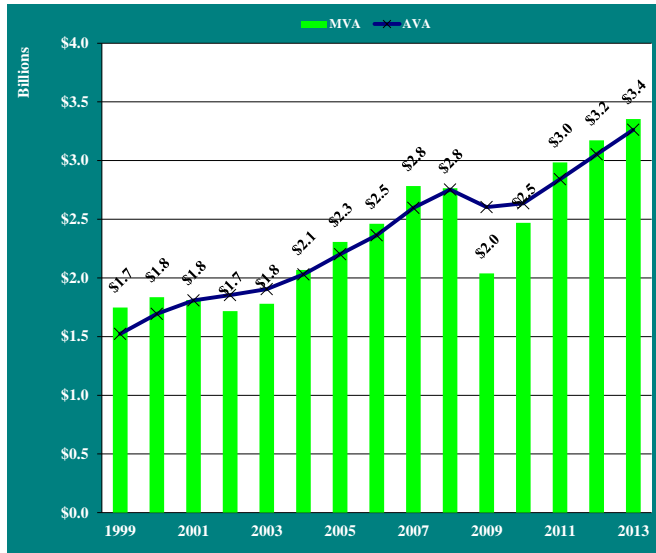
The combination of liability and investment experience and County plus member contributions over the last year led to the System's funding ratio (actuarial value of assets over actuarial accrued liability) increasing from 71.6% at July 1, 2012 to 72.9% at July 1, 2013. For purposes of measuring whether 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 73.1% at July 1, 2012 to 74.2% at July 1, 2013.

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

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**SECTION I  
BOARD SUMMARY**

Growth in Assets

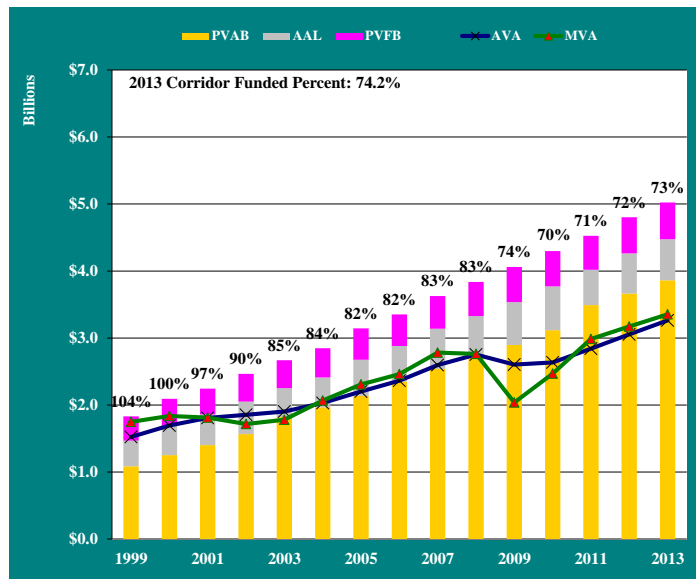


There was an increase in the market value of assets (MVA) over last year due to a return of 7.8%. The actuarial value of assets (AVA) increased slightly more than the MVA due to the continued recognition of recent asset gains. The System still has \$92 million in unrecognized gains that will be phased in over the next few years.

Over the period July 1, 1999 to June 30, 2013, the System's assets returned approximately 7.5% per year measured at actuarial value, matching 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. We compare the actuarial value of assets to this measure of liability in developing the funded percent. These are the percentages shown in the graph labels.



Since 2007, the System's funded status has declined from 83% to 73% as a result of investment gains and losses, liability losses, and the underfunding inherent in the corridor method once it falls below 90%.

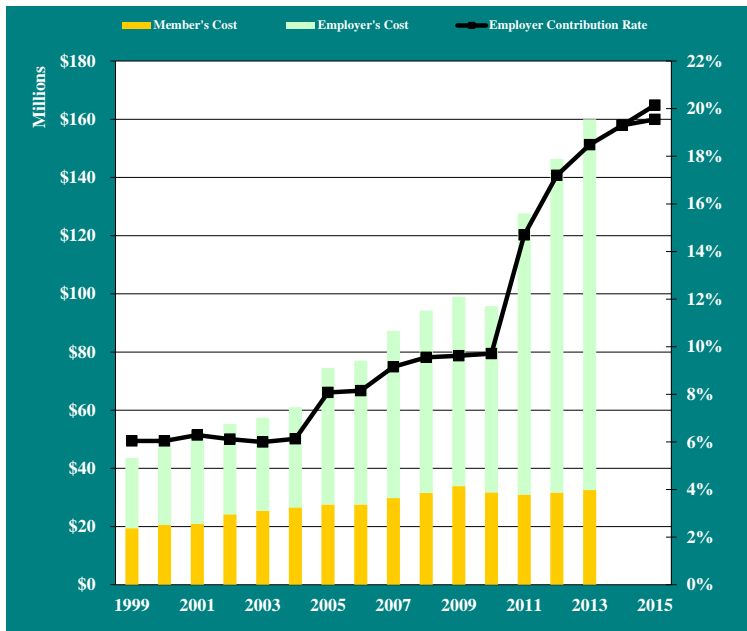


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**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).

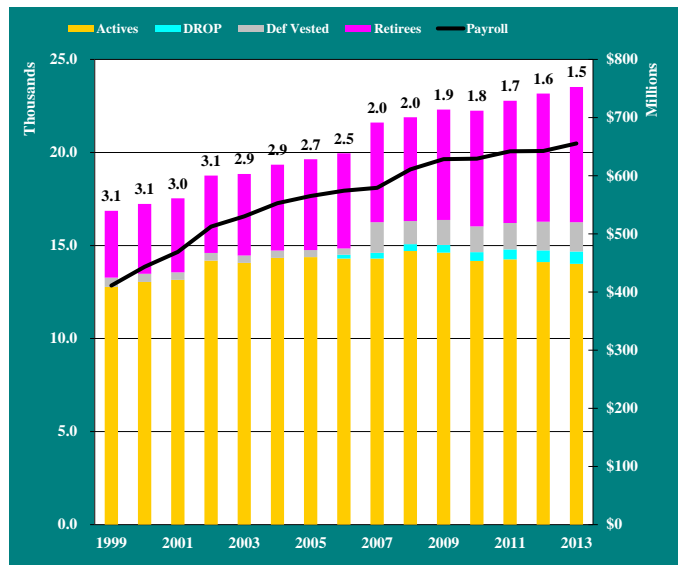


The member contribution rate is set by the County Ordinance. The County contribution rate is set by the actuarial process, as constrained by the corridor method. Note there is a lag in the rate shown. For example, the 2013 value is the rate prepared by the 2011 valuation and implemented for the period July 1, 2012 to June 30, 2013. For FY 2015, the graph shows both the basic corridor contribution rate and the anticipated rate using an “amortize to 93%” approach.

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 1999 to 1.5 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, 2013**

**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  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

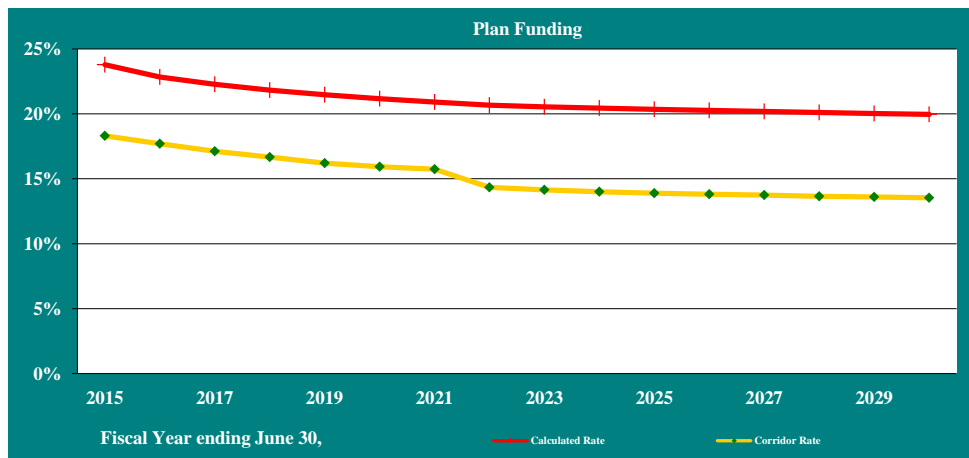
**SECTION I  
BOARD SUMMARY**

**Future Outlook**

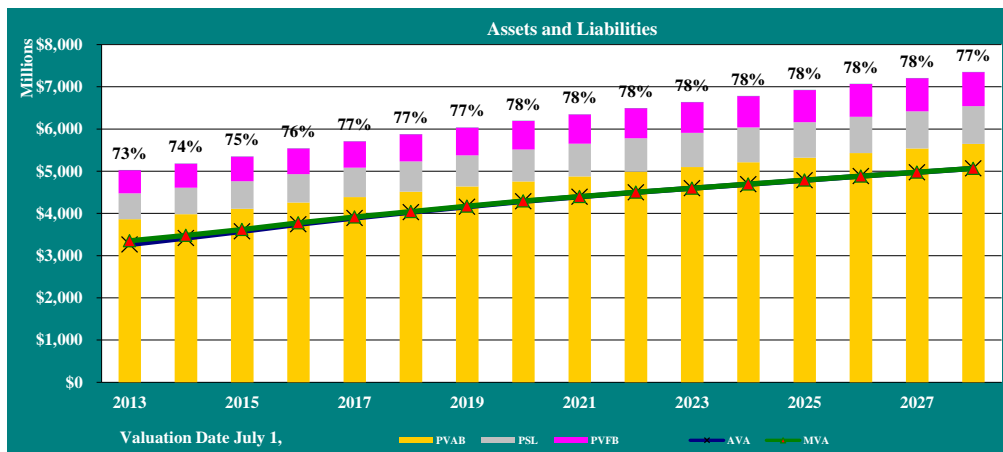
Base-line Projections

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 graph entitled "Plan Funding" shows the contribution rates declining, but the System does not re-enter the corridor (if all other actuarial assumptions are met as well as the 7.5% interest rate). The contribution rate decreases as the stored investment gains are fully phased-in, as plan change bases become fully amortized and drop out, and as more of the population is covered by Plans C & D. The red line shows the actuarially calculated rate if the corridor were not in place. Under this scenario, the corridor rate declines from 18.31% to 13.54% of payroll.



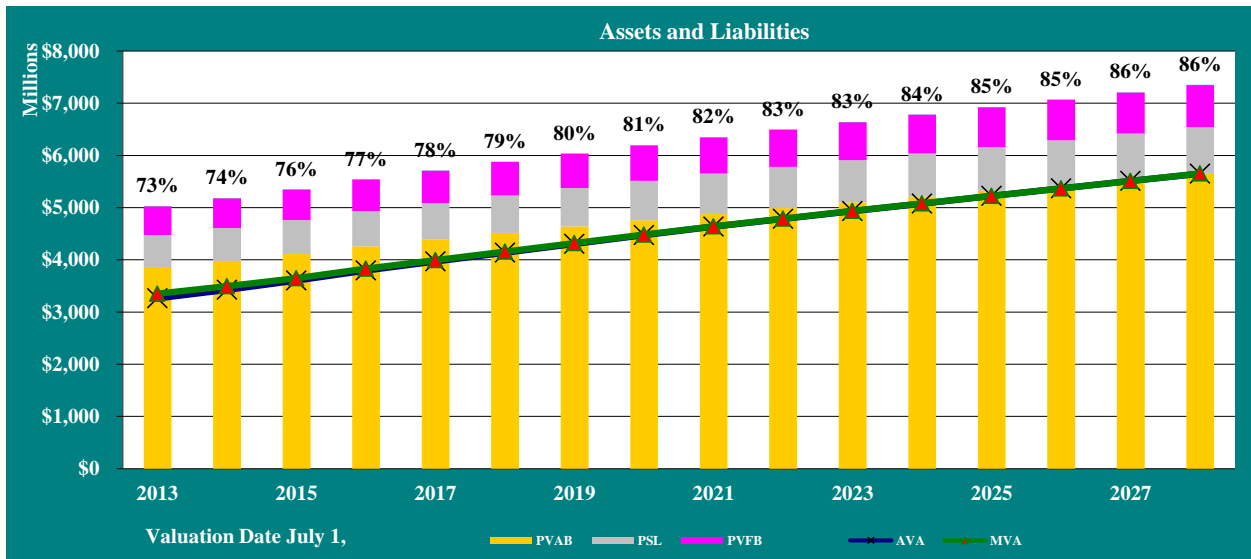
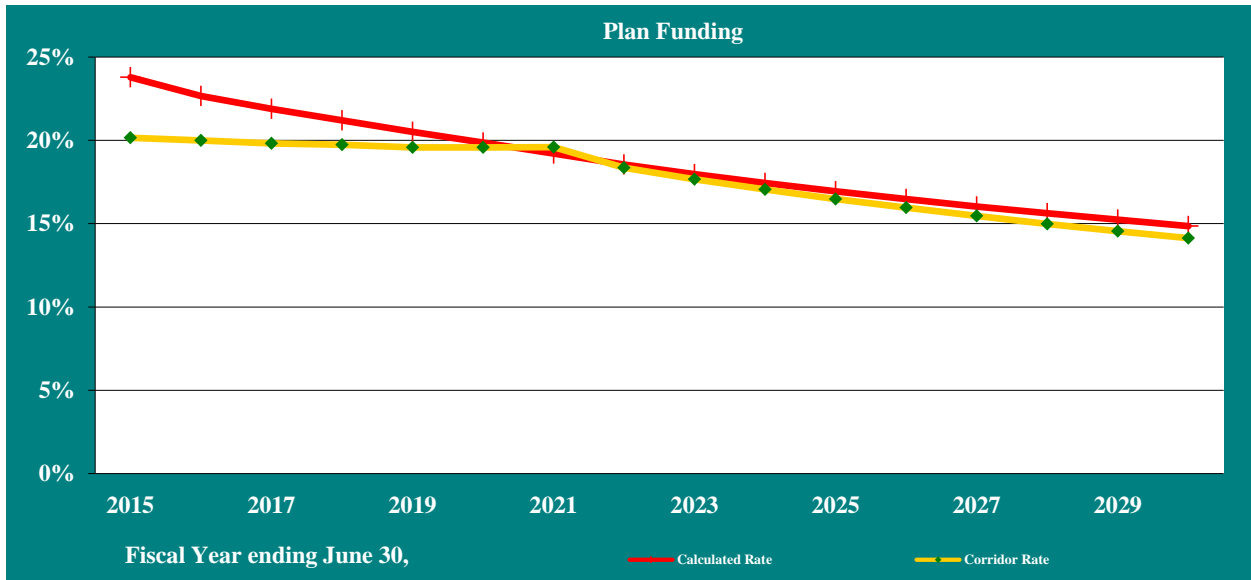
The "Assets and Liabilities" graph shows the projected funding status over the next 15 years. The funded ratio will gradually increase in the short-term as unrecognized investment gains and losses are incorporated in the actuarial value of assets. After that, the corridor method basically marks time and keeps the System around 78% funded.



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**SECTION I  
BOARD SUMMARY**

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%.



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
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**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 10.3% 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.

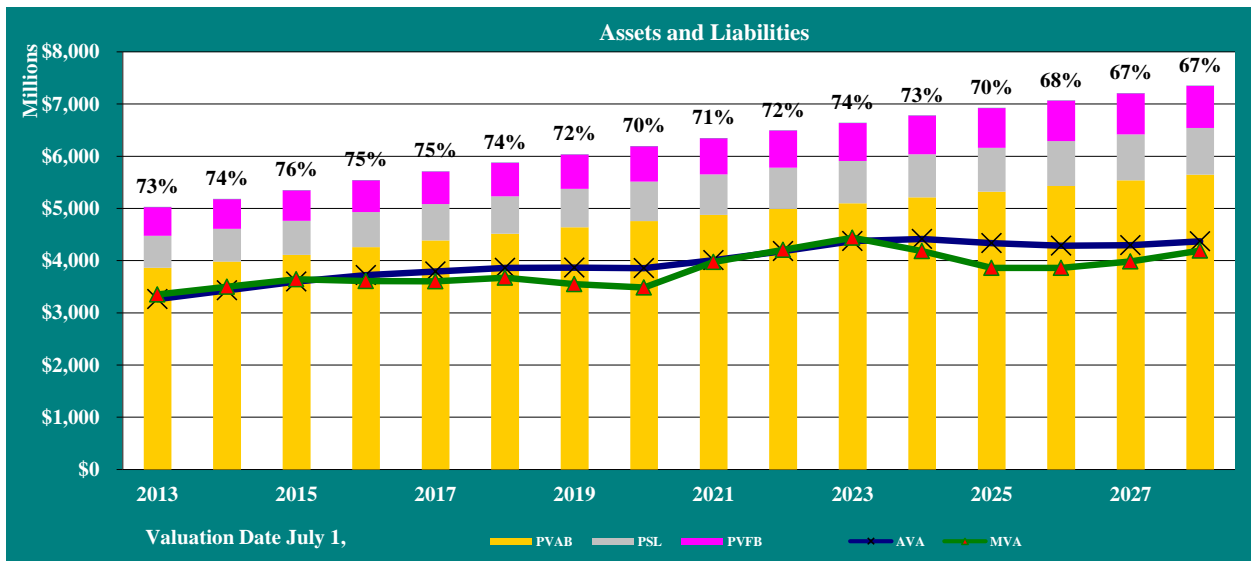
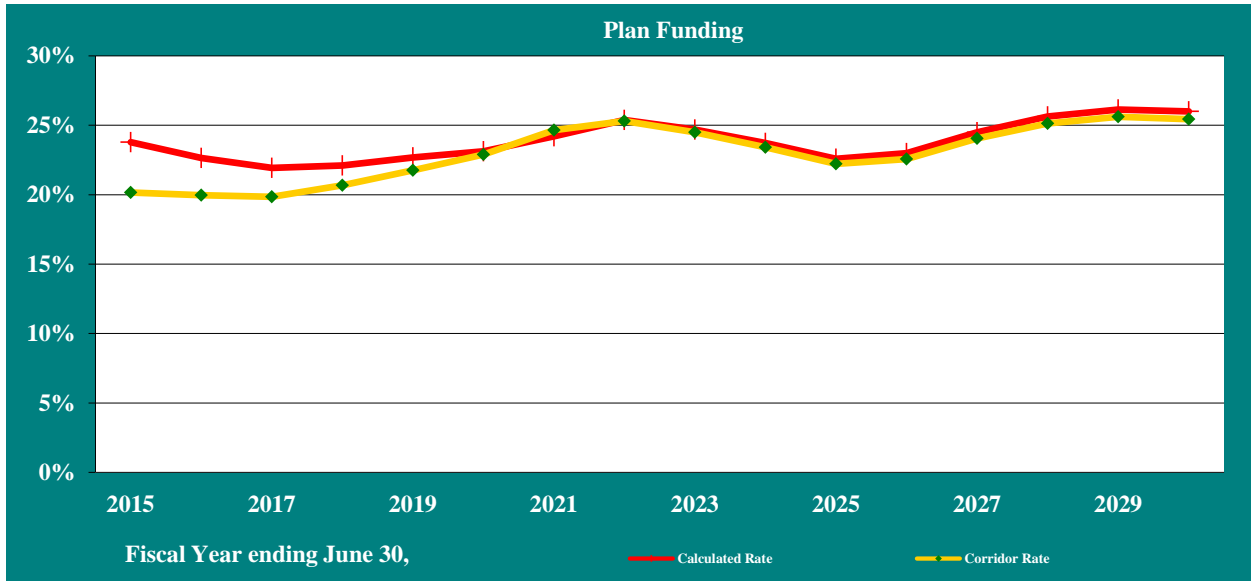
<b>Table I-1</b>			
<b>Fiscal Year Ending June 30,</b>	<b>Average 5.0%</b>	<b>Average 7.5%</b>	<b>Average 10.0%</b>
2013	7.67%	2.34%	-5.85%
2014	7.05	7.17	4.54
2015	1.67	17.72	18.15
2016	2.98	30.01	32.56
2017	5.16	19.42	-8.98
2018	-0.19	5.61	12.47
2019	1.48	11.03	17.81
2020	17.59	4.30	-13.95
2021	9.50	15.60	15.19
2022	9.25	-0.44	14.83
2023	-2.11	2.05	28.45
2024	-3.75	-8.37	24.92
2025	4.20	4.65	3.95
2026	7.27	-0.59	7.37
2027	9.17	7.83	10.22
<b>Average</b>	<b>5.00%</b>	<b>7.50%</b>	<b>10.00%</b>

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**SECTION I  
BOARD SUMMARY**

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

Under this scenario, the corridor contribution rate remains in the range of 20% to 25% of pay. The System funding drops to 67%, even with the ramping up of contributions from 93% of the corridor to 100%.

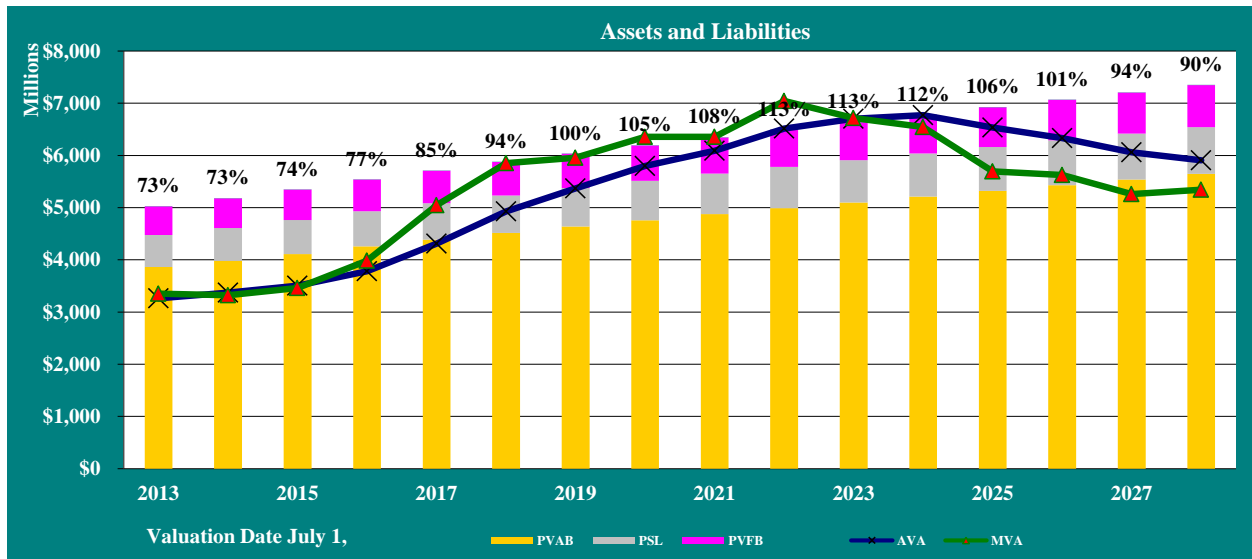
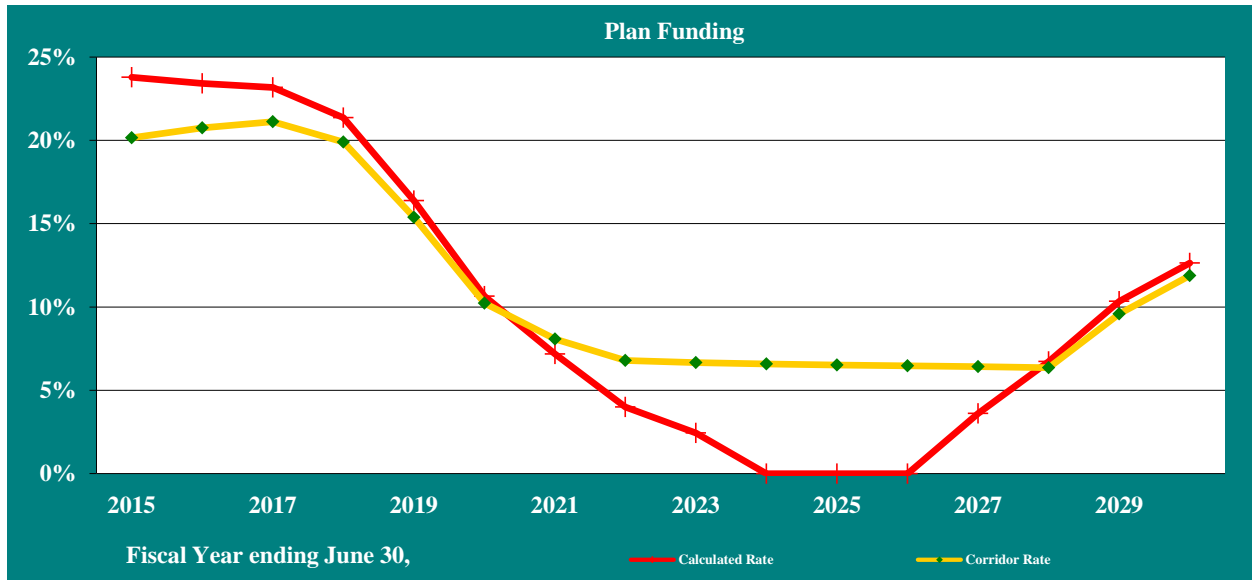


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**SECTION I  
BOARD SUMMARY**

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

Under this scenario, the corridor contribution rate increases until the System re-enters the corridor in 2018 and reaches full funding in 2019.

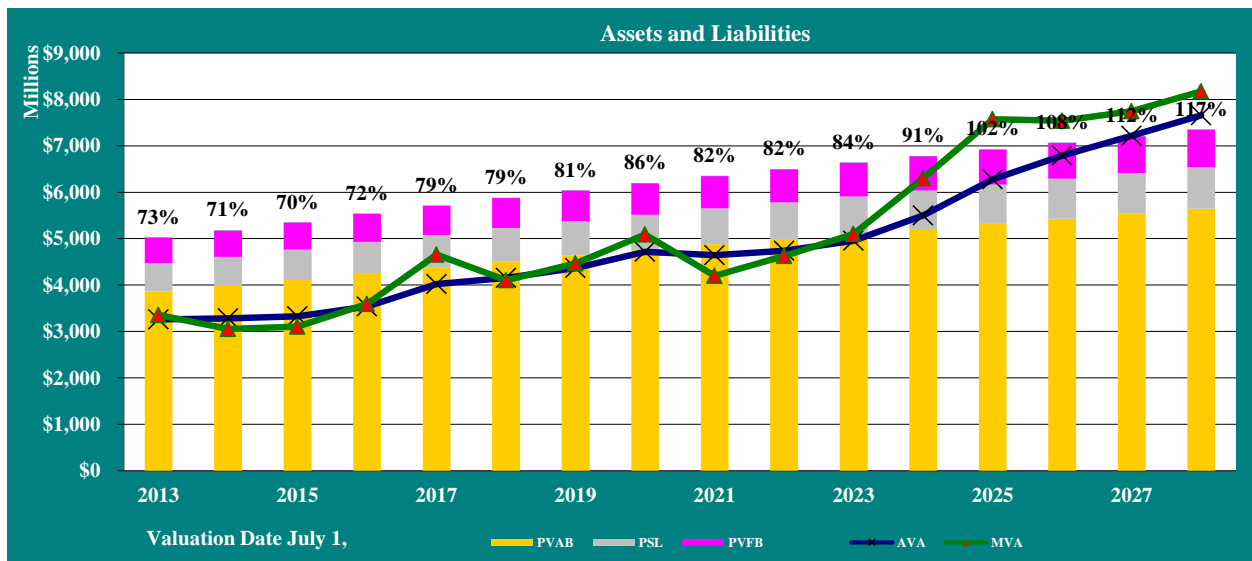
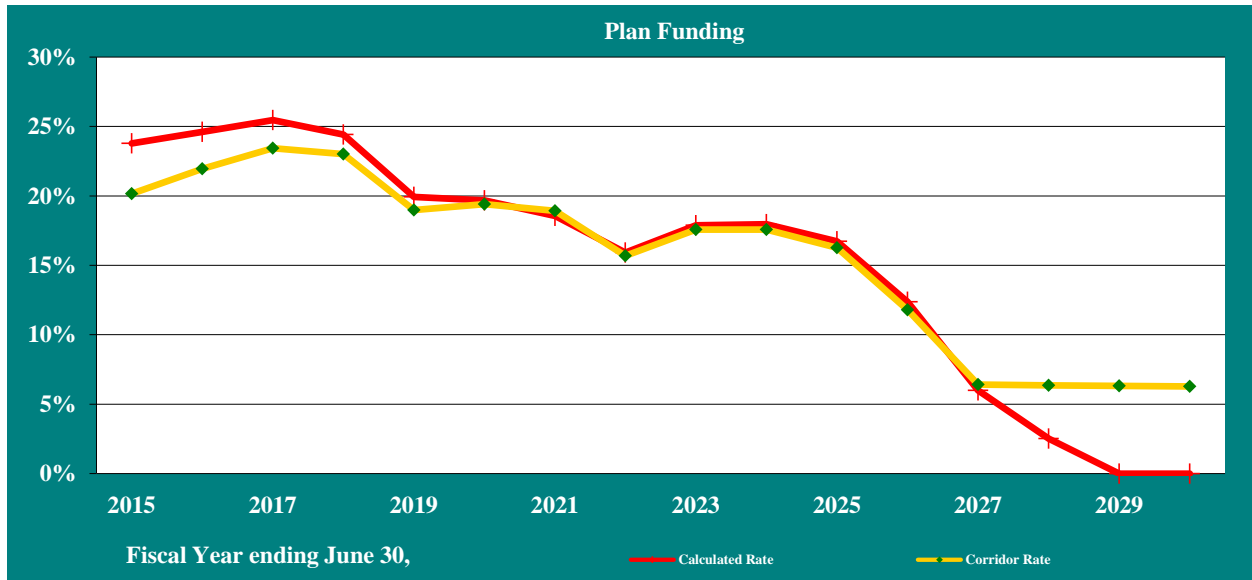


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**SECTION I  
BOARD SUMMARY**

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

Under this scenario, the corridor contribution rate declines most years of the projection period until reaching the level of just paying normal cost by 2027.





FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013

**SECTION I  
BOARD SUMMARY**

<b>Table I-2</b>			
<b>Summary of Principal Plan Results</b>			
<b>Valuation as of:</b>	<b>7/1/2012</b>	<b>7/1/2013</b>	<b>% Chg</b>
<b><u>Participant Counts</u></b>			
Actives (excluding DROP)	14,107	14,011	-0.7%
DROPs	629	670	6.5%
Terminated Vesteds	1,542	1,576	2.2%
In Pay Status	<u>6,888</u>	<u>7,263</u>	5.4%
Total	23,166	23,520	1.5%
Annual Salaries of Active Members	\$ 642,638,926	\$ 655,612,800	2.0%
Annual Retirement Allowances for Retired Members and Beneficiaries (Base amount only – not supplements)	\$ 160,374,462	\$ 173,400,323	8.1%
<b><u>Assets and Liabilities</u></b>			
Actuarial Accrued Liability	\$ 4,264,175,438	\$ 4,473,830,654	4.9%
Assets for Valuation Purposes	<u>3,053,412,085</u>	<u>3,261,923,577</u>	6.8%
Unfunded Actuarial Liability	\$ 1,210,763,353	\$ 1,211,907,077	0.1%
Funding Ratio	71.6%	72.9%	
Present Value of Accrued Benefits	\$ 3,663,689,580	\$ 3,862,092,452	5.4%
Market Value of Assets	<u>3,172,652,596</u>	<u>3,353,932,103</u>	5.7%
Unfunded Accrued Liability (not less than \$0)	\$ 491,036,984	\$ 508,160,349	3.5%
Accrued Benefit Funding Ratio	86.6%	86.8%	
<b><u>Contributions as a Percentage of Payroll</u></b>			
	<b>Fiscal Year 2014</b>	<b>Fiscal Year 2015</b>	
<b><u>GASB Method:</u></b>			
Normal Cost Contribution	6.91%	6.91%	
Unfunded Actuarial Liability Contribution	16.99%	16.67%	
Administrative Expense	<u>0.20%</u>	<u>0.20%</u>	
Total Contribution	24.10%	23.78%	
<b><u>Corridor Method:</u></b>			
Normal Cost Contribution	6.91%	6.91%	
Increase Due to Amortized Changes	1.49%	1.50%	
Amortization of Amount Outside Corridor	10.10%	9.71%	
Administrative Expense	<u>0.20%</u>	<u>0.20%</u>	
Corridor Method	18.70% <sup>1</sup>	18.32% <sup>2</sup>	

<sup>1</sup> The actual contribution rate being paid by the County in FY 14 is 19.30%.

<sup>2</sup> Corridor Method based on amortization to 90% per current funding policy. Alternative rate calculations developed by amortizing to 93% is 20.15%.

**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, 2012 and July 1, 2013;
- 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, 2013

**SECTION II  
ASSETS**

<b>Table II-1</b>		
<b>Statement of Assets at Market Value</b>		
	<b>7/1/2012</b>	<b>7/1/2013</b>
<b><u>Assets</u></b>		
Equity in County's Pooled Cash,		
Contributions Receivable and Other Assets	\$ 12,685,649	\$ 9,969,265
Accrued Interest and Dividends Receivable	9,879,365	2,671,225
Receivable from Sale of Investments	104,906,829	100,888,110
US Government Obligations	82,542,298	95,082,751
Asset-Backed Securities	196,599,979	208,141,967
Other Bonds and Notes	387,260,815	493,803,311
Common and Preferred Stock	927,534,827	1,142,772,251
Pooled and Mutual Funds	1,330,037,552	1,118,222,065
Short-Term Investments	302,599,224	323,460,170
Cash Collateral Received Under		
Securities Lending Agreements	<u>44,021,640</u>	<u>56,267,223</u>
<b>Total Assets</b>	<b>\$ 3,398,068,178</b>	<b>\$ 3,551,278,338</b>
<b><u>Liabilities</u></b>		
Payable for Collateral Received Under		
Securities Lending Agreements	\$ 44,021,640	\$ 56,267,223
Payable for Purchase of Investments	170,574,613	134,509,317
Accounts Payable and Accrued Expenses	<u>10,819,329</u>	<u>6,569,695</u>
<b>Total Liabilities</b>	<b>\$ 225,415,582</b>	<b>\$ 197,346,235</b>
<b>Net Assets Available for Benefits</b>	<b>\$ 3,172,652,596</b>	<b>\$ 3,353,932,103</b>

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013

**SECTION II  
ASSETS**

<b>Table II-2</b>		
<b>Changes in Market Values</b>		
<b>Value of Assets – July 1, 2012</b>		\$ 3,172,652,596
<b><u>Additions</u></b>		
Contributions:		
Employer Contributions	\$ 127,448,018	
Employee Contributions	<u>32,551,927</u>	
Total Contributions		\$ 159,999,945
Investment Income:		
Net Appreciation (Depreciation) in Fair Value of Investments	\$ 207,643,073	
Interest	26,487,525	
Dividends	<u>24,344,459</u>	
Total Investment Income	\$ 258,475,057	
Investment Activity Expenses:		
Management Fees	\$ (12,665,860)	
Custodian Fees	(127,836)	
Consulting Expense	(72,300)	
Allocated Administrative Expenses	<u>(848,000)</u>	
Total Investment Activity Expenses	\$ (13,713,996)	
From Securities Lending Activities:		
Securities Lending Income	\$ 891,808	
Securities Lending Expenses		
Borrowers Rebates	0	
Management Fees	<u>(278,252)</u>	
Net Income from Securities Lending Activities	\$ 613,556	
Net Investment Income		\$ 245,374,617
Total Additions		<u>\$ 405,374,562</u>
<b><u>Deductions</u></b>		
Annuity Benefits	\$ (206,701,293)	
Disability Benefits	(7,926,931)	
Survivor Benefits	(4,600,814)	
Refunds and Other Expenses	(2,988,397)	
Administrative Expenses	<u>(1,877,620)</u>	
Total Deductions		<u>\$ (224,095,055)</u>
<b><u>Total</u></b>		
Net Increase (Decrease)		<u>\$ 181,279,507</u>
<b>Value of Assets – July 1, 2013</b>		<b>\$ 3,353,932,103</b>

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**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, 2013 valuation.

1.	Actuarial Value of Assets at July 1, 2012	<b>\$ 3,053,412,085</b>
2.	Amount in (1) with Interest to July 1, 2013	3,282,417,991
3.	Employer and Member Contributions for the Plan Year Ended June 30, 2013	159,999,945
4.	Interest on Contributions Assuming Received Uniformly Throughout the Year to July 1, 2013	5,999,998
5.	Disbursements from Trust Except Investment Expenses, July 1, 2012 Through June 30, 2013	(224,095,055)
6.	Interest on Disbursements Assuming Payments Made Uniformly Throughout the Year to July 1, 2013	(8,403,565)
7.	Expected Value of Asset at July 1, 2013 = (2) + (3) + (4) + (5) + (6)	3,215,919,314
8.	Market Value of Assets at July 1, 2013	<u>3,353,932,103</u>
9.	Excess of (8) Over (7)	\$ 138,012,789
10.	Actuarial Value of Assets at July 1, 2013 = (7) + 33-1/3% of (9)	<b>\$ 3,261,923,577</b>

*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, 2013**

**SECTION II  
ASSETS**

**Investment Performance**

The market value of assets (MVA) returned 7.81% during 2013, which is greater than the assumed 7.50% return. A return of 9.02% 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.

<b>Year Ending June 30,</b>	<b>Market Value</b>	<b>Actuarial Value</b>	<b>Total Return Standard &amp; Poor's 500 Index</b>	<b>Barclays Global Aggregate Index <sup>1</sup></b>
1989	15.8%	13.0%	20.4%	12.3%
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% <sup>2</sup>	26.0%	4.7% <sup>3</sup>
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%

<sup>1</sup> Formerly the Lehman Global Aggregate Bond Index.

<sup>2</sup> The actuarial return in 1996 reflects the adjustment to a revised actuarial valuation method.

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

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**SECTION II  
ASSETS**

Expected benefit payments are projected for the closed group valued at July 1, 2013. 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 19.05% for FY 2014, 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.

<b>Table II-5</b>			
<b>Projection of System's Benefit Payments and County Contributions</b>			
<b>Year Beginning July 1,</b>	<b>Expected</b>		<b>Expected</b>
	<b>Benefit Payments <sup>1</sup></b>		<b>County Contributions</b>
2013	\$	271,945,000	\$ 126,754,000
2014		269,048,000	138,148,000
2015		262,804,000	141,115,000
2016		295,994,000	144,108,000
2017		312,114,000	147,759,000
2018		328,083,000	151,008,000
2019		345,337,000	155,543,000
2020		360,098,000	160,278,000
2021		378,798,000	154,713,000
2022		393,117,000	153,362,000

<sup>1</sup> 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, 2012 and July 1, 2013;
- 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, 2013

**SECTION III  
LIABILITIES**

<b>Table III-1</b>		
<b>Liabilities/Net (Surplus)/Unfunded</b>		
	<b>July 1, 2012</b>	<b>July 1, 2013</b>
<b>Present Value of Future Benefits</b>		
Active Participant Benefits (excluding DROP)	\$ 2,391,956,014	\$ 2,436,873,897
DROP Participant Benefits	398,000,982	426,986,578
Retiree Benefits	1,949,363,187	2,091,943,532
Terminated Vested and Inactive Members	<u>64,498,454</u>	<u>68,077,870</u>
<b>Present Value of Benefits (PVB)</b>	<b>\$ 4,803,818,637</b>	<b>\$ 5,023,881,877</b>
Market Value of Assets (MVA)	\$ 3,172,652,596	\$ 3,353,932,103
Future Employee Contributions	218,689,981	222,907,824
Future County Contributions	<u>1,412,476,060</u>	<u>1,447,041,950</u>
<b>Total Resources</b>	<b>\$ 4,803,818,637</b>	<b>\$ 5,023,881,877</b>
<b>Actuarial Accrued Liability</b>		
Present Value of Benefits (PVB)	\$ 4,803,818,637	\$ 5,023,881,877
Present Value of Future Normal Costs (PVFNC)		
County Portion	320,953,218	327,143,399
Employee Portion	<u>218,689,981</u>	<u>222,907,824</u>
<b>Actuarial Accrued Liability</b>	<b>\$ 4,264,175,438</b>	<b>\$ 4,473,830,654</b>
<b>(AAL = PVB – PVFNC)</b>		
Actuarial Value of Assets (AVA)	<u>3,053,412,085</u>	<u>3,261,923,577</u>
<b>Net (Surplus)/Unfunded (AAL – AVA)</b>	<b>\$ 1,210,763,353</b>	<b>\$ 1,211,907,077</b>
<b>Present Value of Accrued Benefits</b>		
Present Value of Benefits (PVB)	\$ 4,803,818,637	\$ 5,023,881,877
Present Value of Future Benefit Accruals (PVFBA)	<u>1,140,129,057</u>	<u>1,161,789,425</u>
<b>Present Value of Accrued Benefits</b>	<b>\$ 3,663,689,580</b>	<b>\$ 3,862,092,452</b>
<b>(PVAB = PVB – PVFBA)</b>		
Market Value of Assets (MVA)	<u>3,172,652,596</u>	<u>3,353,932,103</u>
<b>Net Unfunded, not less than \$0 (PVAB – MVA)</b>	<b>\$ 491,036,984</b>	<b>\$ 508,160,349</b>

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**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.

<b>Table III-2</b>			
	<b>Present Value of Benefits</b>	<b>Actuarial Accrued Liability</b>	<b>Present Value of Accrued Benefits</b>
Liabilities 7/1/2012	\$ 4,803,818,637	\$ 4,264,175,438	\$ 3,663,689,580
Liabilities 7/1/2013	<u>5,023,881,877</u>	<u>4,473,830,654</u>	<u>3,862,092,452</u>
Liability Increase (Decrease)	\$ 220,063,240	\$ 209,655,216	\$ 198,402,872
Change Due to:			
Plan Amendment and Ad Hoc COLAs	\$ 727,193	\$ 727,193	\$ 698,105
Actuarial (Gain)/Loss	<i>Not Calculated</i>	39,401,877	<i>Not Calculated</i>
Benefits Accumulated and Other Sources	219,336,047	169,526,146	197,704,767

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013

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 individual normal cost rate for each member is weighted by the present value of future pay at current age to obtain an average total normal cost rate for the plan. Finally, the total normal cost rate is reduced by the average member contribution rate to produce the County's normal cost rate.

**Actuarially Determined Rate (for GASB Disclosure)**

Effective with the 2001 valuation, the normal cost rate was frozen at 5.85% until the System is amended or there is a significant change in assumptions. The net impact on the normal cost is an increase of 1.06% of payroll. The changes are summarized in the following chart.

Changes Since 2001	Impact on Normal Cost
2005 Assumption Changes	+ 0.05%
2006 DROP Implementation	+ 0.03%
2007 Reduce Disability Offset to 40%	+ 0.01%
2008 Reduce Disability Offset to 30%	+ 0.01%
2010 Assumption Changes	<u>+ 0.96%</u>
Total Increase	+ 1.06%

The UAL rate is the level percent of member payroll which, when applied to each year's payroll, is sufficient to amortize the unfunded actuarial liability (UAL) over a 15-year period. This is essentially developing the UAL rate by "fresh-starting" each year.

The assumed administrative expense rate is 0.20% of payroll. This rate, when applied to payroll, is intended to provide an allowance above the cost of funding the benefits to pay for the expense of operating the System. The table on the next page presents and compares the actuarially determined contributions for the System for this valuation and the prior one.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013

**SECTION IV  
CONTRIBUTIONS**

<b>Table IV-2</b>		
<b>Actuarially Determined Rate (For GASB Disclosure)</b>		
	<b>July 1, 2012</b>	<b>July 1, 2013</b>
Normal Cost Rate	6.91%	6.91%
UAL Rate	16.99%	16.67%
Expense Rate	<u>0.20%</u>	<u>0.20%</u>
Total County Rate	24.10%	23.78%

**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. Once the funded status is within the corridor, the contribution rate will return to normal cost rate plus expense rate, plus amortization of post-2001 changes.

<b>Table IV-3</b>	
<b>Changes Since 2001</b>	<b>Impact on UAL Rate</b>
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%	<u>+ 0.01%</u>
Total Increase	+ 1.50%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**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%.

<b>Table IV-4</b>		
<b>Actuarially Determined Rate (for Corridor Contribution)</b>		
<b>Valuation Date</b>	<b>July 1, 2012</b>	<b>July 1, 2013</b>
<b>Fiscal Year</b>	<b>2014</b>	<b>2015</b>
Normal Cost Rate	6.91%	6.91%
UAL Rate	1.49%	1.50%
Amortization of Amount Outside Corridor	10.10%	9.71%
Expense Rate	<u>0.20%</u>	<u>0.20%</u>
<b>Total County Rate</b>	<b>18.70%*</b>	<b>18.32%**</b>

\* The actual contribution rate being paid by the County in FY 14 is 19.30%.

\*\* The anticipated contribution rate to be paid by the County in FY 15 is 20.15%.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013

**SECTION IV  
CONTRIBUTIONS**

In the table below, we develop the actuarially determined rate, used in GASB disclosures, and the corridor contribution rate to be made by the employers.

<b>Table IV-5</b>		
<b>Development of Actuarially Determined Contribution Rate</b>		
	<b>July 1, 2012 (for FY 2014)</b>	<b>July 1, 2013 (for FY 2015)</b>
<b>1. Present Value of Future Benefits</b>		
a. Active Employees	\$ 2,391,956,014	\$ 2,436,873,897
b. DROP	398,000,982	426,986,578
c. Retired Members	1,949,363,187	2,091,943,532
d. Vested Terminated and Inactive Members	<u>64,498,454</u>	<u>68,077,870</u>
e. Total Present Value	\$ 4,803,818,637	\$ 5,023,881,877
<b>2. Present Value of Future Normal Costs</b>		
a. County Portion	\$ 320,953,218	\$ 327,143,399
b. Employee Portion	<u>218,689,981</u>	<u>222,907,824</u>
c. Total Present Value	\$ 539,643,199	\$ 550,051,223
<b>3. Present Value of Future Salaries for Current Active Members</b>	\$ 4,644,764,377	\$ 4,734,347,304
<b>4. Actuarial Value of Assets</b>	\$ 3,053,412,085	\$ 3,261,923,577
<b>5. Actuarial Accrued Liability (1) – (2)</b>	\$ 4,264,175,438	\$ 4,473,830,654
<b>6. Unfunded Actuarial Liability (5) – (4)</b>	\$ 1,210,763,353	\$ 1,211,907,077
<b>7. Active Member Payroll</b>	\$ 642,638,926	\$ 655,612,800
<b>8. Unfunded Liability Amortization Factor</b>	11.0918	11.0918
<b>9. County Contribution Results (GASB)</b>		
a. Normal Cost Rate	6.91%	6.91%
b. Fresh Start Unfunded Liability Amortization (6 ÷ 8 ÷ 7)	16.99%	16.67%
c. Administrative Expense Rate	<u>0.20%</u>	<u>0.20%</u>
d. Total County Contribution Rate June 30	24.10%	23.78%

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013

**SECTION IV  
CONTRIBUTIONS**

<b>Table IV-6 Development of Corridor Contribution Rate</b>		
	<b>July 1, 2012 (for FY 2014)</b>	<b>July 1, 2013 (for FY 2015)</b>
<b>1. Present Value of Future Benefits</b>		
a. Active Employees	\$ 2,391,956,014	\$ 2,436,873,897
b. DROP	398,000,982	426,986,578
c. Retired Members	1,949,363,187	2,091,943,532
d. Vested Terminated and Inactive Members	<u>64,498,454</u>	<u>68,077,870</u>
e. Total Present Value	\$ 4,803,818,637	\$ 5,023,881,877
<b>2. Present Value of Future Normal Costs</b>		
a. County Portion	\$ 320,953,218	\$ 327,143,399
b. Employee Portion	<u>218,689,981</u>	<u>222,907,824</u>
c. Total Present Value	\$ 539,643,199	\$ 550,051,223
<b>3. Actuarial Accrued Liability (1) – (2)</b>	\$ 4,264,175,438	\$ 4,473,830,654
<b>4. Actuarial Value of Assets for Corridor Purposes</b>		
a. Actuarial Assets	\$ 3,053,412,085	\$ 3,261,923,577
b. Outstanding Balance of Plan and Assumption Changes	<u>64,360,668</u>	<u>59,257,479</u>
c. Adjusted Assets (a) + (b)	\$ 3,117,772,753	\$ 3,321,181,056
<b>5. Funding Ratio for Corridor Test</b>	73.1%	74.2%
<b>6. Liability to be Amortized if outside Corridor</b>		
a. 90% x (3) - (4)(c)	\$ 719,985,141	\$ 705,266,533
b. (4)(c) - 120% x (3)	0	0
<b>7. Active Member Payroll</b>	\$ 642,638,926	\$ 655,612,800
<b>8. Unfunded Liability Amortization Factor</b>	11.0918	11.0918
<b>9. Amortization as a % of Payroll (6)/(7)/(8)</b>	10.10%	9.71%
<b>10. County Contribution Results (Corridor)</b>		
a. Normal Cost Rate	6.91%	6.91%
b. Administrative Expense Rate	0.20%	0.20%
c. Plan Change Amortizations	1.49%	1.50%
d. Amortization Outside Corridor (9)	<u>10.10%</u>	<u>9.71%</u>
e. Total County Contribution Rate June 30 <sup>1</sup>	18.70%	18.32%

<sup>1</sup>Alternative rate calculations developed by amortizing to 93% for FY 2015 is a County Rate of 20.15%.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**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 Plan were to terminate.

The GASB-25 actuarial accrued liability is the same as the actuarial liability amount calculated for funding purposes.

Both the present value of accrued benefits (FASB ASC Topic 960) and the actuarial accrued liability (GASB-25) are determined assuming that the System is on-going and participants continue to terminate employment, retire, etc., in accordance with the actuarial assumptions. Liabilities are discounted at the assumed valuation interest rate of 7.5% per annum.

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, 2012 and July 1, 2013 are exhibited in Table V-1. Finally, Table V-2 reconciles the FASB ASC Topic 960 liabilities determined as of the prior valuation, July 1, 2012, to the liabilities as of July 1, 2013.

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, 2013

**SECTION V**  
**ACCOUNTING STATEMENT INFORMATION**

<b>Table V-1</b>		
<b>Accounting Statement Information</b>		
	<b>July 1, 2012</b>	<b>July 1, 2013</b>
<b>A. FASB ASC Topic 960 Basis</b>		
1. Present Value of Benefits Accrued and Vested to Date		
a. Members Currently Receiving Payments	\$ 1,949,363,187	\$ 2,091,943,532
b. Vested Terminated and Inactive Members	64,498,454	68,077,870
c. DROP	398,000,982	426,986,578
d. Active Members	<u>1,207,362,561</u>	<u>1,234,336,733</u>
e. Total PVVB	\$ 3,619,225,184	\$ 3,821,344,713
2. Present Value of Non-Vested Accrued Benefits for Active Members	<u>44,464,396</u>	<u>40,747,739</u>
3. Total Present Value of Accrued Benefits	\$ 3,663,689,580	\$ 3,862,092,452
4. Assets at Market Value	<u>3,172,652,596</u>	<u>3,353,932,103</u>
5. Unfunded Present Value of Accrued Benefits, But Not Less Than Zero	\$ 491,036,984	\$ 508,160,349
6. Ratio of Assets to Value of Benefits (4) / (3)	86.6%	86.8%
<b>B. GASB No. 25 Basis</b>		
1. Actuarial Liabilities		
a. Members Currently Receiving Payments	\$ 1,949,363,187	\$ 2,091,943,532
b. Vested Deferred and Inactive Status Members	64,498,454	68,077,870
c. DROP	398,000,982	426,986,578
d. Active Members	<u>1,852,312,815</u>	<u>1,886,822,674</u>
e. Total	\$ 4,264,175,438	\$ 4,473,830,654
2. Actuarial Value of Assets	<u>3,053,412,085</u>	<u>3,261,923,577</u>
3. Unfunded Actuarial Liability	\$ 1,210,763,353	\$ 1,211,907,077
4. Ratio of Actuarial Value of Assets to Actuarial Liability	71.6%	72.9%

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013

SECTION V  
ACCOUNTING STATEMENT INFORMATION

<b>Table V-2</b>	
<b>Statement of Changes in Total Actuarial Present Value of All Accrued Benefits</b>	
	<b>Accumulated Benefit Obligation (FASB ASC Topic 960)</b>
Actuarial Present Value of Accrued Benefits as of July 1, 2012	\$ 3,663,689,580
Increase (Decrease) During Years Attributable to:	
Passage of Time	\$ 266,495,923
Benefit Paid – FY 2013	(222,217,435)
Plan Amendment	698,105
Benefits Accrued, Other Gains/Losses	<u>153,426,279</u>
Net Increase (Decrease)	\$ 198,402,872
Actuarial Present Value of Accrued Benefits as of July 1, 2013	\$ 3,862,092,452

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013

**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, 2013
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, 2013

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**  
*Gain (or Loss) for Year ending June 30,*

Type of Activity	2008	2009	2010	2011	2012	2013
Investment Income	\$ 5,501,407	\$(282,116,118)	\$ (83,485,934)	\$ 71,698,746	\$ 59,620,255	\$ 46,004,262
Combined Liability Experience	<u>(26,428,258)</u>	<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>
Gain (or Loss) During Year from Financial Experience	\$(20,926,851)	\$(344,543,478)	\$ (158,206,239)	\$ (7,745,385)	\$(14,926,834)	\$ 6,602,385
Non-Recurring Items	<u>(1,446,483)</u>	<u>0</u>	<u>0</u>	<u>(1,602,061)</u>	<u>0</u>	<u>(727,193)</u>
Composite Gain (or Loss) During Year	<b>\$(22,373,334)</b>	<b>\$(344,543,478)</b>	<b>\$(158,206,239)</b>	<b>\$ (9,347,446)</b>	<b>\$(14,926,834)</b>	<b>\$ 5,875,192</b>

**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)				
2008	\$ 298,907,993	\$ 1,662,930,379	\$ 1,367,062,619	\$ 2,752,873,842	100%	100%	58%
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	3,261,923,577	100%	100%	21%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**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, 2013 and the inactive data was collected as of July 1, 2013.

Active pay information is adjusted to project the pay expected to be earned from July 1, 2013 through June 30, 2014. The annual payroll was provided as of December 31, 2012 and adjusted to July 1, 2013. For County employees this included annualizing the 2.18% increase as of July 1, 2012 and applying a 2.5% increase effective January 1, 2013. For School employees this included annualizing the 3.25% increase from July 1, 2012, applying a 3% increase as of July 1, 2013 and an additional 2% 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.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**APPENDIX A  
MEMBERSHIP INFORMATION**

**Summary of Membership Data as of July 1, 2013**

		<b>Active Members*</b>		
		<b>Count</b>	<b>Average Age</b>	<b>Average Salary</b>
School	Plan A	2,920	49.13	\$ 28,055
	Plan B	<u>2,981</u>	<u>50.66</u>	<u>33,481</u>
	Total	5,901	49.90	\$ 30,796
County	Plan A	3,128	46.29	\$ 58,690
	Plan B	<u>4,982</u>	<u>45.45</u>	<u>58,270</u>
	Total	8,110	45.77	\$ 58,432
Total Systems	Plan A	6,048	47.66	\$ 43,899
	Plan B	<u>7,963</u>	<u>47.40</u>	<u>48,990</u>
	Total	14,011	47.51	\$ 46,793

\* Excludes DROP participants.

		<b>Inactive Members</b>		
		<b>School</b>	<b>County</b>	<b>Total</b>
<b>Service Retirement</b>				
Count		2,602	3,790	6,392
Annual Basic Benefit	\$	43,632,839	\$ 116,654,356	\$ 160,287,195
Annual Supplements		6,731,016	20,966,433	27,697,449
<b>Service - Connected Disability</b>				
Count		77	76	153
Annual Basic Benefit <sup>1</sup>	\$	1,588,504	\$ 2,098,748	\$ 3,687,252
<b>Ordinary Disability</b>				
Count		232	158	390
Annual Basic Benefit	\$	2,060,934	\$ 2,344,312	\$ 4,405,246
<b>Beneficiaries</b>				
Count		22	306	328
Annual Basic Benefit	\$	230,488	\$ 4,790,142	\$ 5,020,630
<b>DROP</b>				
Count		162	508	670
Annual Basic Benefit	\$	4,064,699	\$ 18,362,866	\$ 22,427,565
Annual Supplements		1,811,898	7,939,267	9,751,165
<b>Vested Former Members</b>				
Count				1,576
Annual Basic Benefit <sup>2</sup>	\$			\$ 10,887,899

<sup>1</sup> Benefits are net of offsets for Workers' Compensation and Social Security.

<sup>2</sup> Benefits are payable at age 65.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
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**Membership Statistics**

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

	<u>July 1, 2012</u>		<u>July 1, 2013</u>		<u>% Change</u>	
	Count	Average Monthly Benefit	Count	Average Monthly Benefit	Count	Average Monthly Benefit
<b>Inactive Members</b>						
Service Retirement						
Basic Benefit	6,030	\$ 2,044	6,392	\$ 2,090	6.0%	2.2%
Supplement	1,797	1,234	1,832	1,260	1.9%	-94.6%
Service-Connected Disability	152	1,857	153	2,008	0.7%	8.1%
Ordinary Disability	396	935	390	941	-1.5%	0.7%
Beneficiaries	<u>310</u>	<u>1,247</u>	<u>328</u>	<u>1,276</u>	<u>5.8%</u>	<u>2.3%</u>
Total/Average (Basic Benefit)	6,888	\$ 1,940	7,263	\$ 1,990	5.4%	2.5%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**APPENDIX A  
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<b>Data Reconciliation from July 1, 2012 to July 1, 2013</b>								
	<b>Active</b>	<b>DROP</b>	<b>Terminated Vested</b>	<b>Retired</b>	<b>Service- Connected Disability</b>	<b>Ordinary Disability</b>	<b>Beneficiary</b>	<b>Total</b>
<b>Participant count as of July 1, 2012</b>	<b>14,107</b>	<b>629</b>	<b>1,542</b>	<b>6,030</b>	<b>152</b>	<b>396</b>	<b>310</b>	<b>23,166</b>
New Hires / Re-hires	1,311		(14)					1,297
Terminated Vested	(134)		134					0
DROP	(263)	263						0
Retired	(235)	(220)	(46)	501				0
Deceased with beneficiary	(2)	(1)		(28)	(1)	(1)	33	0
Deceased without beneficiary		(2)		(118)	(4)	(17)	(13)	(154)
Benefits Expired								0
Ordinary Disability	(5)		(7)			12		0
Service-Connected Disability	(5)				5			0
Terminated Not Vested	(763)							(763)
Corrections	_____	1	(33)	7	1	_____	(2)	(26)
Change	(96)	41	34	362	1	(6)	18	354
<b>Participant count as of July 1, 2013</b>	<b>14,011</b>	<b>670</b>	<b>1,576</b>	<b>6,392</b>	<b>153</b>	<b>390</b>	<b>328</b>	<b>23,520</b>



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
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**APPENDIX A  
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**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	26	23	0	0	0	0	0	0	49
25 to 29	45	134	68	0	0	0	0	0	247
30 to 34	30	110	149	34	2	0	0	0	325
35 to 39	26	65	112	83	22	0	0	0	308
40 to 44	12	76	84	78	80	37	14	0	381
45 to 49	10	68	61	77	93	145	83	5	542
50 to 54	20	57	73	85	80	126	97	18	556
55 to 59	14	44	63	68	66	87	40	32	414
60 to 64	8	24	48	50	30	28	14	8	210
65 & up	10	14	15	11	13	15	12	6	96
<b>Total</b>	<b>201</b>	<b>615</b>	<b>673</b>	<b>486</b>	<b>386</b>	<b>438</b>	<b>260</b>	<b>69</b>	<b>3,128</b>

*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	\$ 597,004	\$ 846,526	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 1,443,530
25 to 29	1,775,637	5,472,531	2,900,656	0	0	0	0	0	10,148,824
30 to 34	1,180,991	5,242,566	7,639,634	1,723,404	100,040	0	0	0	15,886,634
35 to 39	886,072	3,138,416	5,593,754	4,661,259	1,343,054	0	0	0	15,622,555
40 to 44	406,583	3,643,528	4,251,826	4,866,738	5,707,678	2,559,211	997,276	0	22,432,840
45 to 49	232,289	2,846,403	3,111,143	4,527,042	6,593,384	10,921,188	6,382,440	423,974	35,037,863
50 to 54	610,722	2,617,726	3,343,515	4,798,355	5,409,884	10,124,632	8,810,152	1,414,125	37,129,111
55 to 59	419,328	2,005,149	3,394,625	3,830,449	4,681,001	6,747,108	3,507,476	3,183,273	27,768,409
60 to 64	198,136	805,565	2,124,169	2,983,508	1,866,983	2,149,641	1,531,740	1,103,458	12,763,200
65 & up	272,028	608,260	563,097	640,205	783,953	942,120	986,889	551,353	5,347,904
<b>Total</b>	<b>\$ 6,578,790</b>	<b>\$ 27,226,669</b>	<b>\$ 32,922,420</b>	<b>\$ 28,030,960</b>	<b>\$ 26,485,976</b>	<b>\$ 33,443,900</b>	<b>\$ 22,215,973</b>	<b>\$ 6,676,183</b>	<b>\$ 183,580,872</b>

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
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**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	40	56	4	0	0	0	0	0	100
25 to 29	104	268	98	1	0	0	0	0	471
30 to 34	59	208	226	53	0	0	0	0	546
35 to 39	54	172	190	95	15	0	0	0	526
40 to 44	62	155	205	139	53	30	2	0	646
45 to 49	51	154	197	144	75	68	62	3	754
50 to 54	53	159	204	158	80	75	73	8	810
55 to 59	32	140	171	145	87	42	23	6	646
60 to 64	7	56	106	109	41	19	11	6	355
65 & up	4	17	40	36	11	11	6	3	128
<b>Total</b>	<b>466</b>	<b>1,385</b>	<b>1,441</b>	<b>880</b>	<b>362</b>	<b>245</b>	<b>177</b>	<b>26</b>	<b>4,982</b>

*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	\$ 1,546,859	\$ 2,159,069	\$ 165,176	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 3,871,105
25 to 29	4,388,736	12,165,000	4,278,874	37,042	0	0	0	0	20,869,651
30 to 34	2,992,116	10,455,139	11,302,809	2,618,149	0	0	0	0	27,368,213
35 to 39	2,900,999	9,209,291	10,747,059	5,640,877	948,454	0	0	0	29,446,680
40 to 44	2,882,065	8,543,141	12,617,828	8,931,227	3,905,919	2,116,638	128,118	0	39,124,937
45 to 49	2,299,781	7,774,628	11,186,101	9,802,833	5,504,651	5,505,189	4,622,688	212,158	46,908,028
50 to 54	2,373,770	8,545,555	11,816,241	10,507,474	6,137,796	5,719,050	5,733,024	726,999	51,559,909
55 to 59	1,325,913	7,875,539	10,030,839	9,725,778	6,383,762	3,147,155	2,094,160	466,312	41,049,459
60 to 64	307,472	3,203,280	6,201,033	7,043,466	3,055,293	1,442,435	920,524	478,528	22,652,030
65 & up	200,502	647,682	2,157,118	2,245,825	747,191	876,850	371,184	207,189	7,453,541
<b>Total</b>	<b>\$ 21,218,213</b>	<b>\$ 70,578,324</b>	<b>\$ 80,503,079</b>	<b>\$ 56,552,670</b>	<b>\$ 26,683,065</b>	<b>\$ 18,807,317</b>	<b>\$ 13,869,697</b>	<b>\$ 2,091,186</b>	<b>\$ 290,303,552</b>

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
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**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	38	7	2	0	0	0	0	0	47
25 to 29	61	20	9	0	0	0	0	0	90
30 to 34	93	69	31	4	0	0	0	0	197
35 to 39	92	107	58	13	3	0	0	0	273
40 to 44	90	171	84	31	9	1	2	0	388
45 to 49	94	195	102	44	22	16	12	4	489
50 to 54	70	177	137	62	16	24	16	9	511
55 to 59	54	151	127	59	30	13	7	8	449
60 to 64	40	102	95	40	14	6	3	2	302
65 & up	19	63	48	21	11	6	2	4	174
<b>Total</b>	<b>651</b>	<b>1,062</b>	<b>693</b>	<b>274</b>	<b>105</b>	<b>66</b>	<b>42</b>	<b>27</b>	<b>2,920</b>

*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	\$ 570,639	\$ 174,160	\$ 74,873	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 819,672
25 to 29	1,000,948	555,811	340,725	0	0	0	0	0	1,897,484
30 to 34	1,904,089	1,926,883	1,138,402	198,389	0	0	0	0	5,167,762
35 to 39	1,710,972	2,807,507	1,918,826	507,022	140,130	0	0	0	7,084,457
40 to 44	1,606,594	4,308,537	2,818,200	1,388,950	505,773	56,967	140,879	0	10,825,899
45 to 49	1,505,259	4,730,846	3,215,382	1,687,286	1,034,057	927,644	707,900	270,043	14,078,417
50 to 54	1,212,131	3,943,673	4,447,609	2,499,013	717,932	1,465,276	907,876	651,642	15,845,152
55 to 59	826,426	3,262,530	3,671,535	2,204,113	1,333,259	743,828	428,278	513,370	12,983,341
60 to 64	664,126	2,306,399	2,771,516	1,419,166	684,461	411,130	163,723	115,629	8,536,149
65 & up	314,645	1,375,696	1,300,861	692,012	453,309	256,643	111,898	178,388	4,683,451
<b>Total</b>	<b>\$ 11,315,827</b>	<b>\$ 25,392,041</b>	<b>\$ 21,697,929</b>	<b>\$ 10,595,951</b>	<b>\$ 4,868,922</b>	<b>\$ 3,861,489</b>	<b>\$ 2,460,553</b>	<b>\$ 1,729,073</b>	<b>\$ 81,921,784</b>

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
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**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	25	7	1	0	0	0	0	0	33
25 to 29	28	26	15	0	0	0	0	0	69
30 to 34	32	26	30	16	0	0	0	0	104
35 to 39	49	53	59	26	9	3	0	0	199
40 to 44	68	115	88	79	17	17	3	0	387
45 to 49	55	176	116	79	56	40	21	5	548
50 to 54	58	153	130	118	75	43	17	7	601
55 to 59	42	126	152	112	61	26	12	3	534
60 to 64	24	96	112	67	22	12	2	3	338
65 & up	4	42	51	48	10	9	3	1	168
<b>Total</b>	<b>385</b>	<b>820</b>	<b>754</b>	<b>545</b>	<b>250</b>	<b>150</b>	<b>58</b>	<b>19</b>	<b>2,981</b>

*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	\$ 421,738	\$ 222,761	\$ 43,573	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 688,072
25 to 29	476,598	757,218	532,483	0	0	0	0	0	1,766,298
30 to 34	627,094	846,454	1,152,886	734,838	0	0	0	0	3,361,272
35 to 39	982,135	1,426,881	2,053,014	1,279,758	509,917	191,281	0	0	6,442,986
40 to 44	1,099,339	2,693,115	3,128,690	3,460,492	877,214	1,200,112	210,398	0	12,669,360
45 to 49	757,245	4,185,174	3,821,770	3,677,294	2,790,398	2,524,554	1,638,049	410,849	19,805,334
50 to 54	782,853	3,307,865	3,981,821	5,099,031	3,938,009	2,675,798	1,099,615	409,572	21,294,565
55 to 59	711,325	2,691,956	4,857,829	4,751,839	3,043,051	1,708,087	646,407	219,755	18,630,250
60 to 64	346,898	1,978,354	3,281,535	2,533,876	1,018,301	621,970	105,603	174,317	10,060,853
65 & up	81,610	819,304	1,471,744	1,618,703	426,294	415,799	165,438	88,712	5,087,603
<b>Total</b>	<b>\$ 6,286,835</b>	<b>\$ 18,929,081</b>	<b>\$ 24,325,343</b>	<b>\$ 23,155,833</b>	<b>\$ 12,603,183</b>	<b>\$ 9,337,602</b>	<b>\$ 3,865,510</b>	<b>\$ 1,303,205</b>	<b>\$ 99,806,593</b>

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013**

**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	93	7	0	0	0	0	0	229
25 to 29	238	448	190	1	0	0	0	0	877
30 to 34	214	413	436	107	2	0	0	0	1,172
35 to 39	221	397	419	217	49	3	0	0	1,306
40 to 44	232	517	461	327	159	85	21	0	1,802
45 to 49	210	593	476	344	246	269	178	17	2,333
50 to 54	201	546	544	423	251	268	203	42	2,478
55 to 59	142	461	513	384	244	168	82	49	2,043
60 to 64	79	278	361	266	107	65	30	19	1,205
65 & up	37	136	154	116	45	41	23	14	566
<b>Total</b>	<b>1,703</b>	<b>3,882</b>	<b>3,561</b>	<b>2,185</b>	<b>1,103</b>	<b>899</b>	<b>537</b>	<b>141</b>	<b>14,011</b>

*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	\$ 3,136,240	\$ 3,402,517	\$ 283,622	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 6,822,379
25 to 29	7,641,918	18,950,559	8,052,738	37,042	0	0	0	0	34,682,257
30 to 34	6,704,289	18,471,042	21,233,730	5,274,781	100,040	0	0	0	51,783,881
35 to 39	6,480,179	16,582,094	20,312,653	12,088,916	2,941,555	191,281	0	0	58,596,678
40 to 44	5,994,581	19,188,321	22,816,545	18,647,407	10,996,584	5,932,929	1,476,671	0	85,053,037
45 to 49	4,794,573	19,537,052	21,334,396	19,694,455	15,922,490	19,878,576	13,351,077	1,317,024	115,829,642
50 to 54	4,979,476	18,414,819	23,589,186	22,903,874	16,203,621	19,984,756	16,550,667	3,202,338	125,828,737
55 to 59	3,282,992	15,835,174	21,954,829	20,512,178	15,441,074	12,346,179	6,676,322	4,382,711	100,431,458
60 to 64	1,516,632	8,293,596	14,378,253	13,980,015	6,625,037	4,625,176	2,721,590	1,871,932	54,012,232
65 & up	868,785	3,450,941	5,492,820	5,196,746	2,410,746	2,491,412	1,635,408	1,025,641	22,572,500
<b>Total</b>	<b>\$ 45,399,664</b>	<b>\$ 142,126,116</b>	<b>\$ 159,448,772</b>	<b>\$ 118,335,413</b>	<b>\$ 70,641,146</b>	<b>\$ 65,450,308</b>	<b>\$ 42,411,734</b>	<b>\$ 11,799,647</b>	<b>\$ 655,612,801</b>

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM  
ACTUARIAL VALUATION AS OF JULY 1, 2013

**APPENDIX B**  
**ACTUARIAL ASSUMPTIONS AND METHODS**

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

**1. Demographic Assumptions**

**a. Healthy Mortality**

<b>Annual Deaths Per 10,000 Members RP 2000 Mortality Projected to 2015*</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
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**

<b>Annual Deaths Per 1,000 Disabled Members RP 2000 Mortality Projected to 2015 with Ages Set Forward Five Years</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
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, 2013

**APPENDIX B**  
**ACTUARIAL ASSUMPTIONS AND METHODS**

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

<b>Annual Termination Rates Per 1,000 Members – Male</b>			
<b>Years of Employment with County</b>			
<b>Age</b>	<b>0-2</b>	<b>3-4</b>	<b>5+</b>
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

<b>Annual Termination Rates Per 1,000 Members – Female</b>			
<b>Years of Employment with County</b>			
<b>Age</b>	<b>0-3</b>	<b>3-5</b>	<b>5+</b>
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.

**d. Disability**

<b>Annual Disabilities Per 10,000 Members*</b>		
<b>Age</b>	<b>Male</b>	<b>Female</b>
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, 2013

**APPENDIX B**  
**ACTUARIAL ASSUMPTIONS AND METHODS**

**e. Retirement**

<b>Annual Retirements Per 1,000 Eligible Members*</b> <b>(Male and Female)</b>	
<b>Age</b>	<b>Normal</b>
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, 2013

**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 will be used as the unused sick leave balance throughout the remaining active period.

**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**

None.

**APPENDIX B**  
**ACTUARIAL ASSUMPTIONS AND METHODS**

**B. Actuarial Methods**

**1. Funding Method**

The funding method used for GASB disclosure purposes is the “aggregate accrual modification of the Entry Age Normal Cost method.” 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 the average plan participant. The level percent developed is called the normal cost rate, and the product of that rate and payroll is the normal cost.

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.

The employer contributions are calculated using the same basic actuarial method (EAN). However, in order to produce a more level contribution rate, the System has adopted a Corridor Funding Method.

Under the Corridor Funding Method, the employer’s total contribution rate is equal to the normal cost rate plus rate 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. Once the funded status is within the corridor, the contribution rate will return to normal cost rate, plus amortization of post-2001 changes, plus expense rate.

**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.

**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 may elect to join Plan A or Plan B.

**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 2013).

**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 25% 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 30% to 25% of any primary Social Security benefit.

Plans C and D were added for participants hired on or after January 1, 2013.