

Fairfax County Employees' Retirement System

**Actuarial Valuation
as of June 30, 2021**

**Produced by Cheiron
October 2021**

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October 21, 2021

Board of Trustees
Fairfax County Employees' Retirement System
12015 Lee Jackson Memorial Highway, Suite 350
Fairfax, Virginia 22033

**Re: *Fairfax County Employees' Retirement System
Actuarial Valuation as of June 30, 2021***

Dear Members of the Board:

At your request, we have conducted our annual actuarial valuation of the Fairfax County Employees' Retirement System as of June 30, 2021. 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 2023 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.

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.

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 No. 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 any other user.

Board of Trustees
Fairfax County Employees' Retirement System
October 21, 2021

This report and its contents have been prepared in accordance with generally recognized and accepted actuarial principles and practices and our understanding of the Code of Professional Conduct and applicable Actuarial Standards of Practice set out by the Actuarial Standards Board as well as applicable laws and regulations. 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, MAAA, EA
Principal Consulting Actuary



Coralie A. Taylor, FSA, MAAA, EA
Consulting Actuary

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

FOREWORD

Cheiron has performed the actuarial valuation of the Fairfax County Employees' Retirement System as of June 30, 2021. 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 County for Fiscal Year 2023, 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 presents risk factors to consider in the future outlook of the Plan.

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

Section IV shows similar information on the System's liabilities, measured for actuarial, accounting, and governmental reporting purposes.

Section V develops the County contribution rate, determined using actuarial techniques.

Section VI includes the required items to be included in the System's Annual Comprehensive Financial Report (ACFR).

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 No. 23.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

FOREWORD

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

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION I - BOARD SUMMARY

General Comments

The employer's annual contribution to this System is determined by using an amortization layer method. Under this funding approach, the employer's contribution rate consists of the normal cost rate plus expense rate plus layered amortization UAL bases. The UAL rates are summarized in Section V. The normal cost rate and actuarial accrued liability will be measured using the entry age funding method. The UAL is amortized over a series of fixed 15-year periods as a level percentage of payroll. Future gains and losses and changes in actuarial assumptions will be amortized in layers over separate 15-year periods.

The employer contribution rate for Fiscal Year (FY) 2023, as calculated under this method, remained at 28.88% of payroll.

This valuation contains information reported in the June 30, 2021 Annual Comprehensive Financial Report (ACFR) of the System. Additional information regarding GASB Statement No. 67 can be found in a separate report.

Since the previous valuation, an experience study was performed to review the actuarial assumptions and methods. A description of the changes the Board has approved appears in Appendix B. The current results reflect these assumption changes which increase the liabilities by \$234 million. As an offset to this liability impact, the smoothed value of assets includes an additional recognition of \$236 million of the remaining balance of past investment gains. This additional recognition allows the calculated contribution rate to remain at its current level.

Trends

The System outperformed the investment assumption during the fiscal year ending in 2021, causing an actuarial gain on the asset side of the System. The actual return on a market value basis was 26.76%. On an actuarial value basis, the assets returned 11.72% compared with an assumed rate of return of 7.25%. The actuarial gain recognized for funding purposes was \$192.3 million.

The measurement of liabilities produced a gain this year in the amount of \$43 million. This gain was due to experience compared to our assumptions about salary increases, retirement behavior, COLA, and death, etc. Specific components of the gain include:

- The average salary increase was 2.7% for active County participants and -4.7% for active Schools participants who were in both the June 30, 2020 and June 30, 2021 valuations. This was less than expected based on the actuarial assumption, creating a liability gain of \$61 million.
- The valuation assumed a 2.50% cost-of-living adjustment in 2020 for benefits in pay status. The actual CPI-based COLA was 2.60% last year, creating a liability loss of \$3 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

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION I - BOARD SUMMARY

the member and employer contribute from the date of hire. However, when we look only at the liability side, they are a component of the annual liability loss. This accounts for a \$7 million loss this year.

- Finally, there was a \$8 million liability loss component that is made up of various other causes such as members terminating, retiring, dying, or becoming disabled in a way contrary to the assumption.

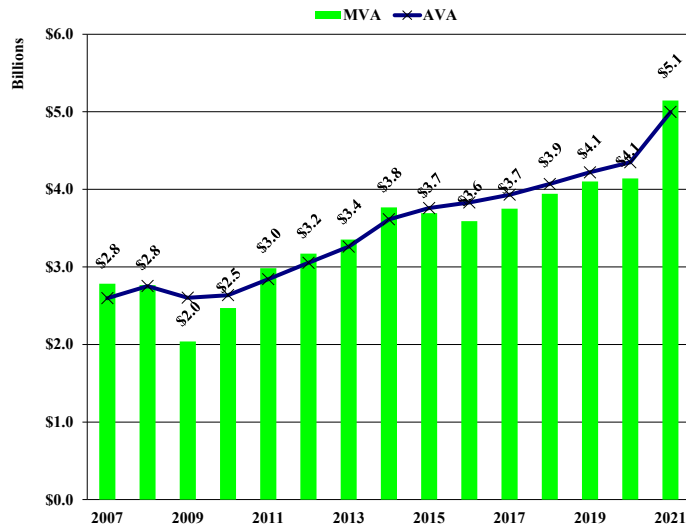
The combination of liability and investment experience, together with County plus member contributions over the last year, led to the System's funding ratio (actuarial value of assets over actuarial accrued liability) increasing from 73.0% at June 30, 2020 to 79.0% at June 30, 2021.

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 that 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 JUNE 30, 2021**

SECTION I - BOARD SUMMARY

Growth in Assets

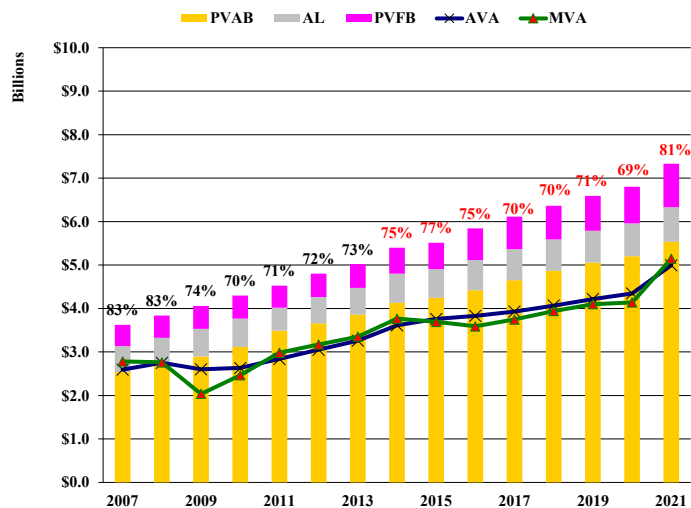


There was an increase in the market value of assets (MVA) (amount in billions shown above bars) over last year due to a return of 26.76%. The actuarial value of assets (AVA) increased due to the continued recognition of past asset gains. The System recognized only a portion of the asset gain this year, and there remains \$149 million in unrecognized gains that will be phased in over the next few years.

Over the period July 1, 2007 to June 30, 2021, the System's assets returned approximately 6.82% per year measured at actuarial value, compared to the valuation assumption of 6.75% 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 numbers). Starting in 2014, the comparison uses the market value of assets (red numbers). These are the percentages shown in the graph labels.

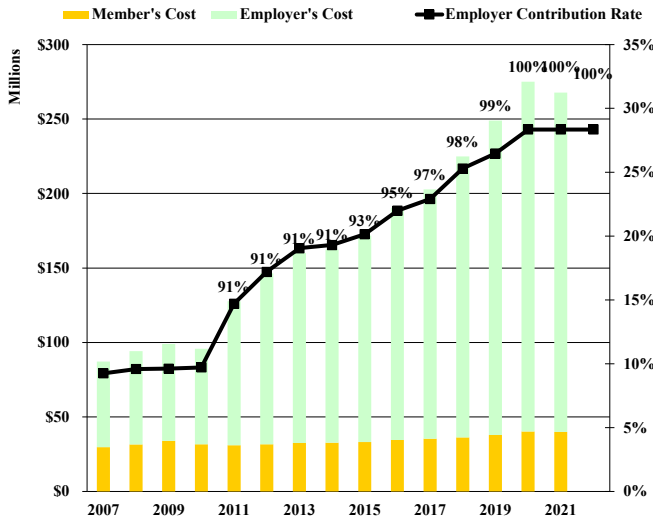


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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).

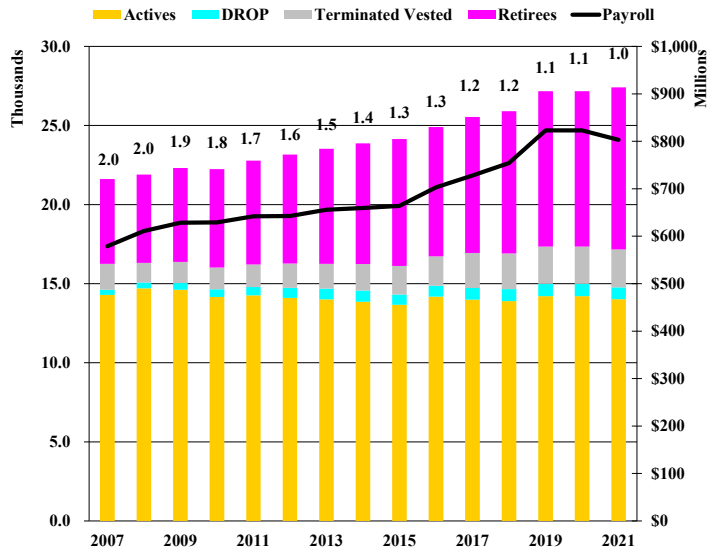


The member contribution rate is set by the County Ordinance. The County contribution rate is set by the actuarial process, as constrained by the corridor method. Note there is a lag in the rate shown. For example, the 2021 value is the rate prepared by the 2019 valuation and implemented for the period June 30, 2020 to June 30, 2021. 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 2.0 actives to each inactive in 2007 to 1.0 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.

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

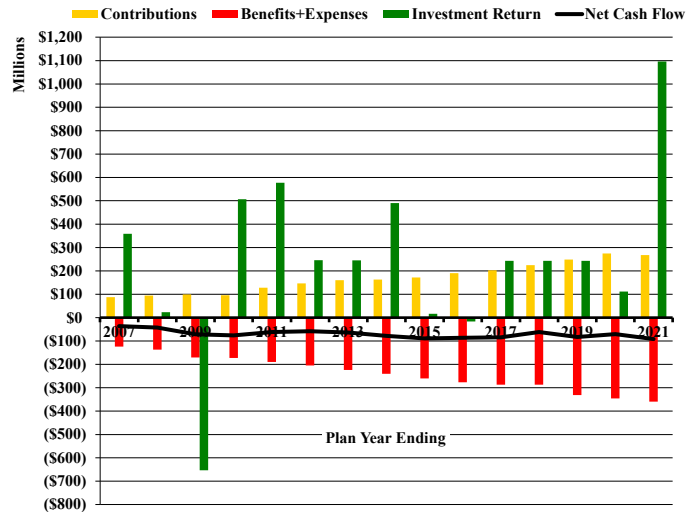


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION I - BOARD SUMMARY

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 JUNE 30, 2021**

SECTION I - BOARD SUMMARY

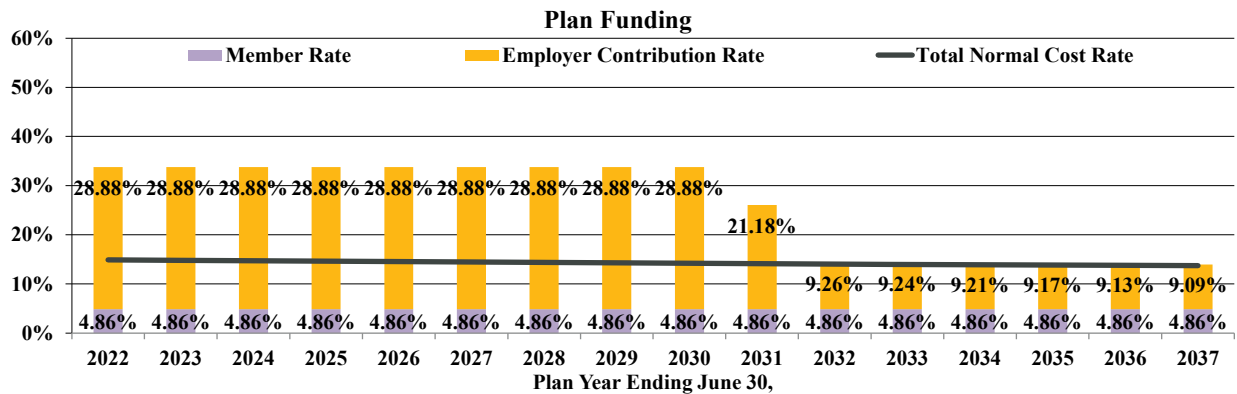
Future Outlook

Base-line Projections

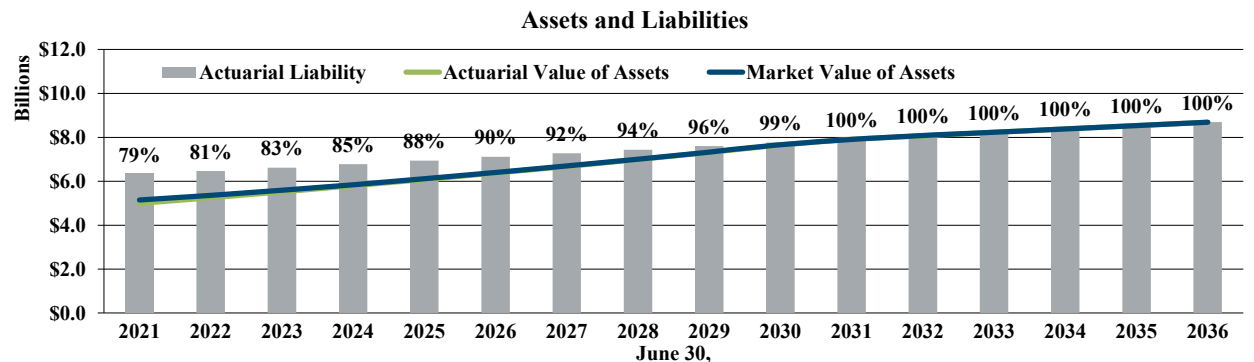
The two graphs below show the expected progress of the System over the next 15 years, assuming the System's assets earn 6.75% on their *market value*.

Contributions are calculated using a full actuarial calculation. The County does not intend to reduce the contribution rate until the System is 100% funded. Once the System is 100% funded, the contribution rate will drop as returns keep the funding above 100%.

The graph entitled "Plan Funding" illustrates future County and member contribution rates.



The "Assets and Liabilities" graph shows the projected funding status over the next 15 years. The funded ratio based on the actuarial value of assets gradually increases for the entire projection period ultimately reaching 100% funded as of 2031.



**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 6.75% each and every year, which is extremely unlikely.

In the projections that follow, we show the risk to the System under volatile markets. The System has averaged a 7.79% return per year since 1994. In the following charts, we show results assuming returns over the next 15 years average 4.25%, 6.75%, and 9.25%. Different patterns of returns will produce different results from those shown here.

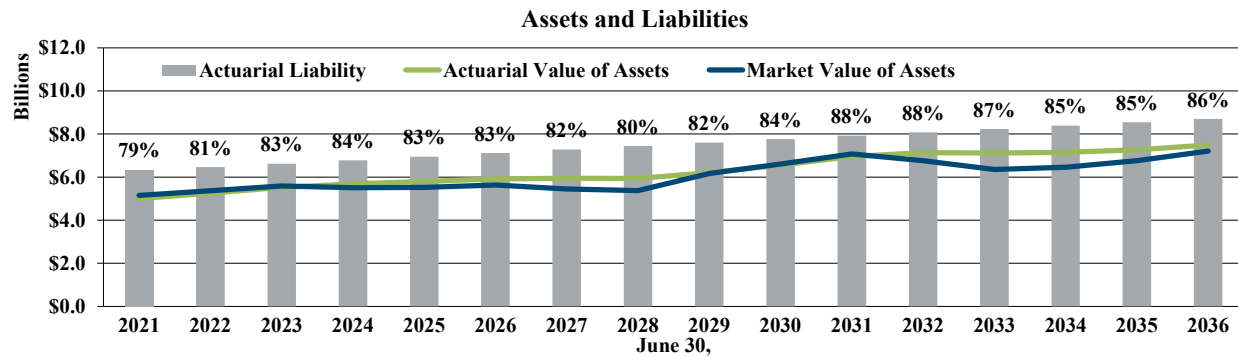
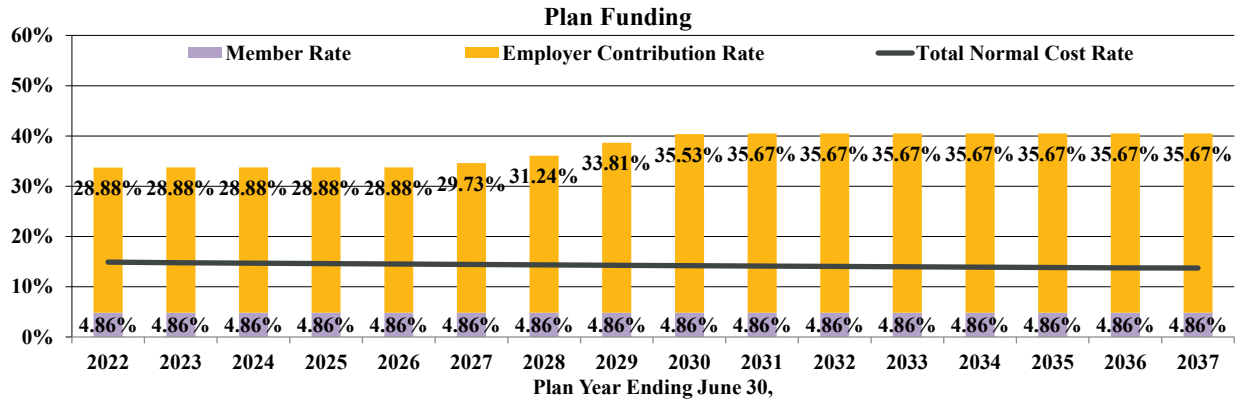
Table I-1			
Fiscal Year Ending June 30,	Average 4.25%	Average 6.75%	Average 9.25%
2022	6.92%	1.59%	(6.60)%
2023	6.30	6.42	3.79
2024	0.92	16.97	17.40
2025	2.23	29.26	31.81
2026	4.41	18.67	(9.73)
2027	(0.94)	4.86	9.72
2028	0.73	10.28	15.06
2029	16.84	3.55	(13.19)
2030	8.75	14.85	14.44
2031	8.50	(1.19)	14.08
2032	(2.86)	1.30	30.03
2033	(4.50)	(9.12)	24.17
2034	3.45	3.90	3.20
2035	6.52	(1.34)	6.62
2036	8.42	7.08	9.47
Average	4.25%	6.75%	9.25%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION I - BOARD SUMMARY

Alternative Projection – with average return of 4.25% in the period

Under this scenario, the County contribution rate increases from 28% to about 36% of payroll. The System's funding drops to as low as 80% on an actuarial value basis, even with the ramping up of contributions.

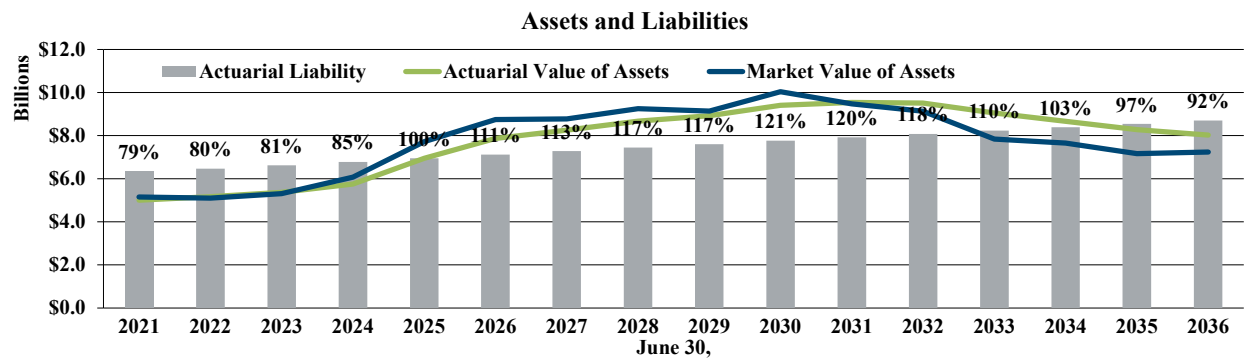
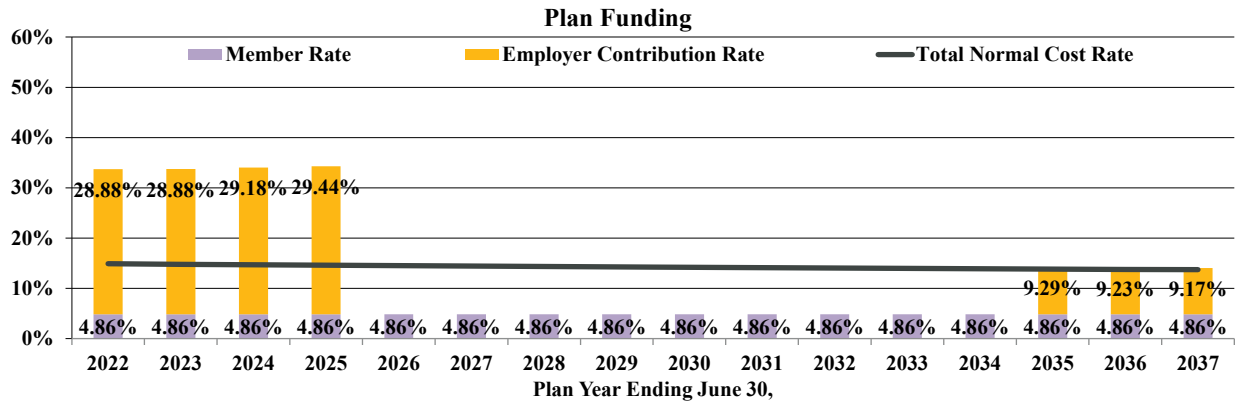


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION I - BOARD SUMMARY

Alternative Projection – with average return of 6.75% in the period

Under this scenario, in which the System is assumed to experience lower than expected returns for the first two years followed by higher-than-average returns in the next few years, the County contribution rate increases over the next few years as the asset losses are phased in and the funding ratio remains below 100%. After that time, the contribution drops dramatically as returns continue to push the funded percent well above 100% on an actuarial value basis.

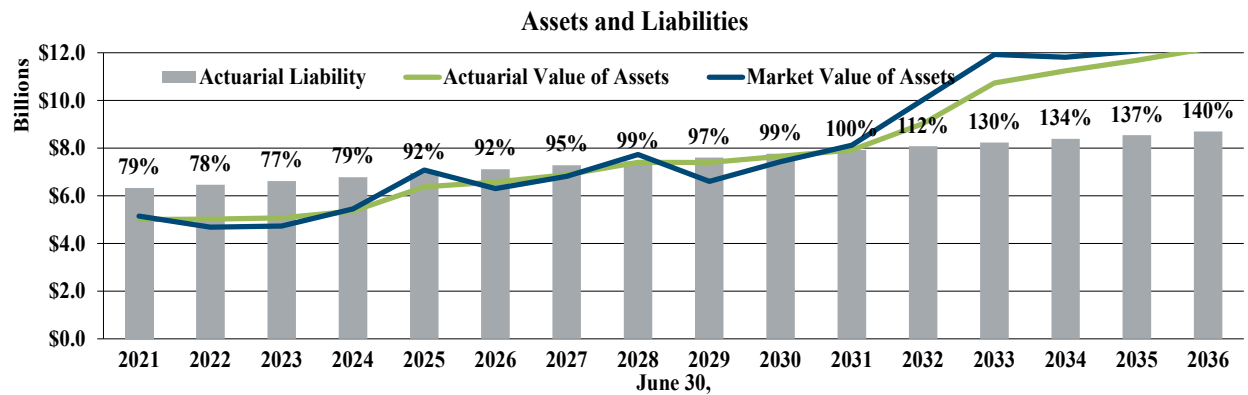
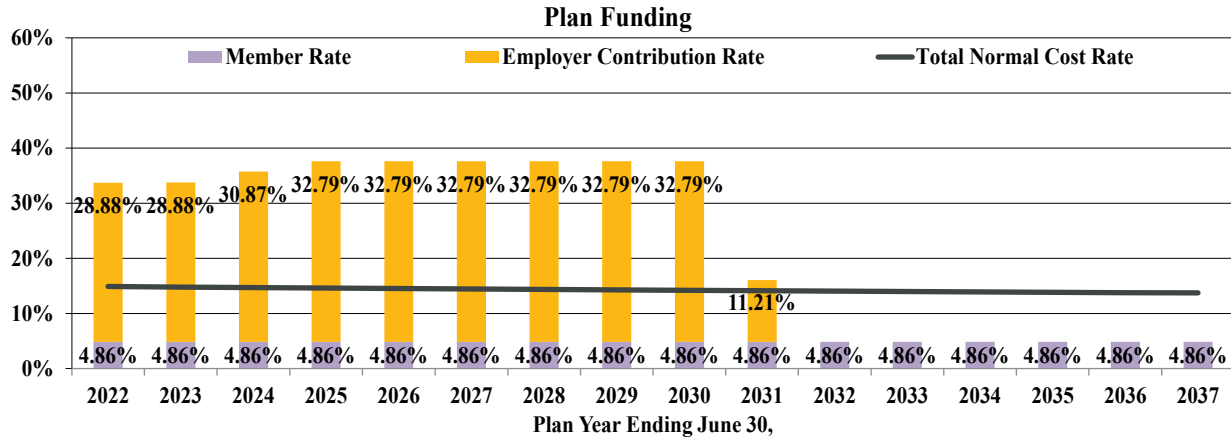


**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION I - BOARD SUMMARY

Alternative Projection – with average return of 9.25% 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 County contribution rate increases while phasing in the poor asset returns, holds at 32.8% and then drops off once the System reaches 100% funding on an actuarial value basis.



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION I - BOARD SUMMARY

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

Valuation as of:	June 30, 2020	June 30, 2021	% Chg.
<u>Participant Counts</u>			
Actives (excluding DROP)	14,204	14,015	(1.3)%
DROPs	785	753	(4.1)%
Terminated Vesteds	2,349	2,394	1.9%
In Pay Status	9,824	10,247	4.3%
Total	<u>27,162</u>	<u>27,409</u>	0.9%
Annual Salaries of Active Members	\$ 822,970,711	\$ 805,120,408	(2.2)%
Annual Retirement Allowances for Retired Members and Beneficiaries (Base amount only – not supplements)	\$ 263,223,924	\$ 285,147,607	8.3%
<u>Assets and Liabilities</u>			
Actuarial Liability (AL)	\$ 5,961,066,083	\$ 6,329,809,523	6.2%
Assets for Valuation Purposes (AVA)	<u>4,349,257,826</u>	<u>4,997,549,929</u>	14.9%
Unfunded Actuarial Liability	\$ 1,611,808,257	\$ 1,332,259,594	(17.3)%
Actuarial Value Funding Ratio (AVA / AL)	73.0%	79.0%	
Market Value Funding Ratio (MVA / AL)	69.5%	81.3%	
Present Value of Accrued Benefits	\$ 5,205,415,563	\$ 5,537,961,940	6.4%
Market Value of Assets	<u>4,142,063,209</u>	<u>5,146,232,426</u>	24.2%
Unfunded Accrued Liability (not less than \$0)	\$ 1,063,352,354	\$ 391,729,514	(63.2)%
Accrued Benefit Funding Ratio	79.6%	92.9%	
<u>Contributions as a Percentage of Payroll</u>			
	Fiscal Year 2022	Fiscal Year 2023	
Employer Normal Cost	8.40%	9.98%	
UAL Amortization	20.23%	18.60%	
Administrative Expense	<u>0.25%</u>	<u>0.30%</u>	
County Rate	28.88%	28.88%	

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION II - IDENTIFICATION AND ASSESSMENT OF RISK

Actuarial valuations are based on a set of assumptions about future economic and demographic experience. These assumptions represent a reasonable estimate of future experience, but actual future experience will undoubtedly be different and may be significantly different. This section of the report is intended to identify the primary risks to the System, provide some background information about those risks, and provide an assessment of those risks.

Identification of Risks

The fundamental risk to a pension plan is that the contributions needed to pay the benefits become unaffordable. While we believe it is unlikely that the System by itself would become unaffordable, the contributions needed to support the System may differ significantly from expectations. While there are a number of factors that could lead to contribution amounts deviating from expectations, we believe the primary sources are:

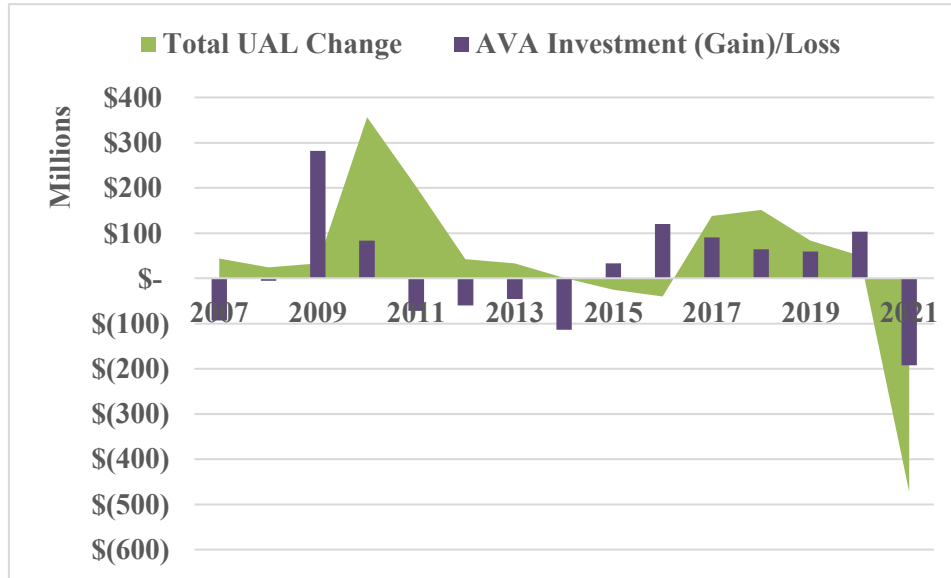
- Investment risk,
- Interest rate risk,
- Longevity and other demographic risks,
- Contribution risk, and
- Assumption change risk.

Other risks that we have not identified may also turn out to be important.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION II - IDENTIFICATION AND ASSESSMENT OF RISK

Investment Risk is the potential for investment returns to be different than expected. Lower investment returns than anticipated will increase the Unfunded Actuarial Liability necessitating higher contributions in the future unless there are other gains that offset these investment losses. The potential volatility of future investment returns is determined by the System's asset allocation, and the affordability of the investment risk is determined by the amount of assets invested relative to the size of the plan sponsor or other contribution base.

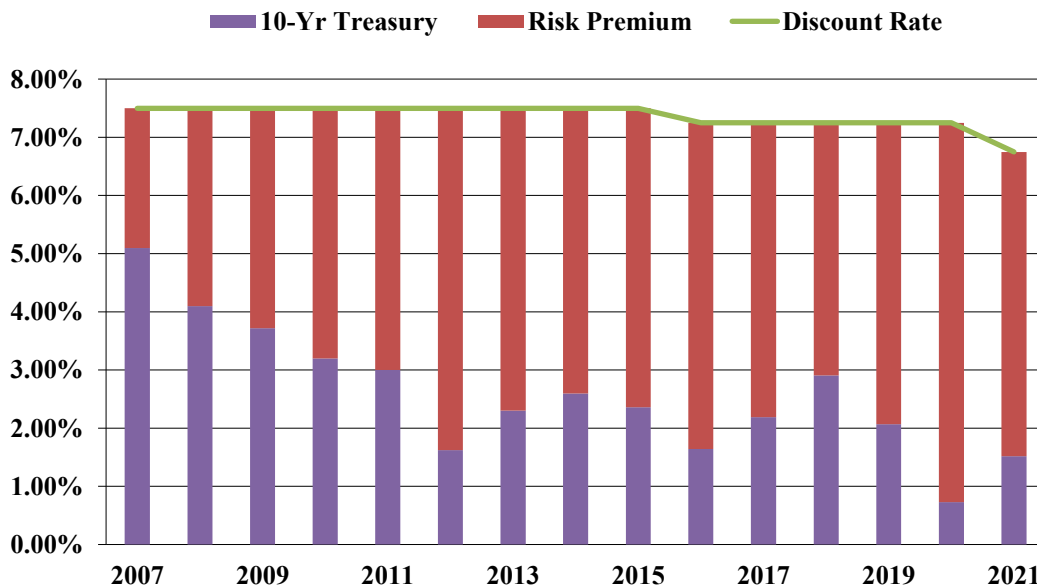


The graph above shows the impact of investment gains and losses on the smoothed Actuarial Value of Assets over the last 15 years compared to the System's total change in UAL.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION II - IDENTIFICATION AND ASSESSMENT OF RISK

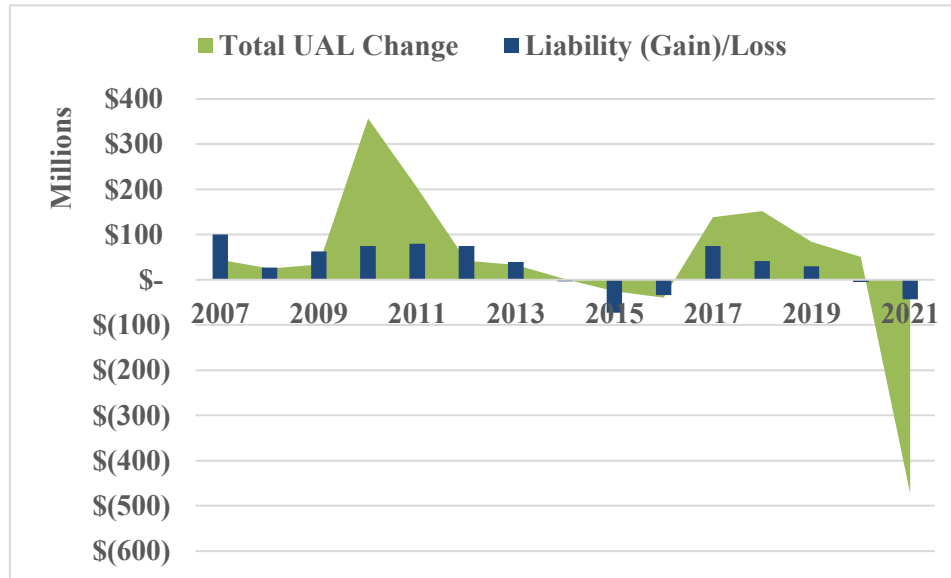
Interest rate risk is the potential for interest rates to be different than expected. For public plans, short-term fluctuations in interest rates have little or no effect as the plan's liability is usually measured based on the expected return on assets. Longer-term trends in interest rates, however, can have a powerful effect. The chart below shows the yield on a 10-year Treasury security compared to the System's assumed rate of return. The difference is a simple measure of the amount of investment risk taken. As interest rates have declined, plans faced a choice: maintain the same level of risk and reduce the expected rate of return, maintain the same expected rate of return, and take on more investment risk, or some combination of the two strategies.



FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021

SECTION II - IDENTIFICATION AND ASSESSMENT OF RISK

Longevity and other demographic risks are the potential for mortality or other demographic experience to be different than expected. Generally, longevity and other demographic risks emerge slowly over time and are often dwarfed by other changes, particularly those due to investment returns. The following graph shows the demographic gains and losses over the last 15 years compared to the total change in the UAL for each year.



Contribution risk is the potential for actual future contributions to deviate from expected future contributions. There are different sources of contribution risk ranging from the sponsor choosing to not make contributions in accordance with the funding policy to material changes in the contribution base (e.g., covered employees, covered payroll, sponsor revenue) that affect the amount of contributions the System can collect. Historically, the System has made contributions in accordance with their funding policy.

Assumption change risk is the potential for the environment to change such that future valuation assumptions are different than the current assumptions. Assumption change risk is an extension of the other risks identified, but rather than capturing the risk as it is experienced, it captures the cost of recognizing a change in environment when the current assumption is no longer reasonable.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
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SECTION II - IDENTIFICATION AND ASSESSMENT OF RISK

Plan Maturity Measures

The future financial condition of a mature pension plan is more sensitive to each of the risks identified above than a less mature plan. Before assessing each of these risks, it is important to understand the maturity of this System compared to other plans and how the maturity has changed over time.

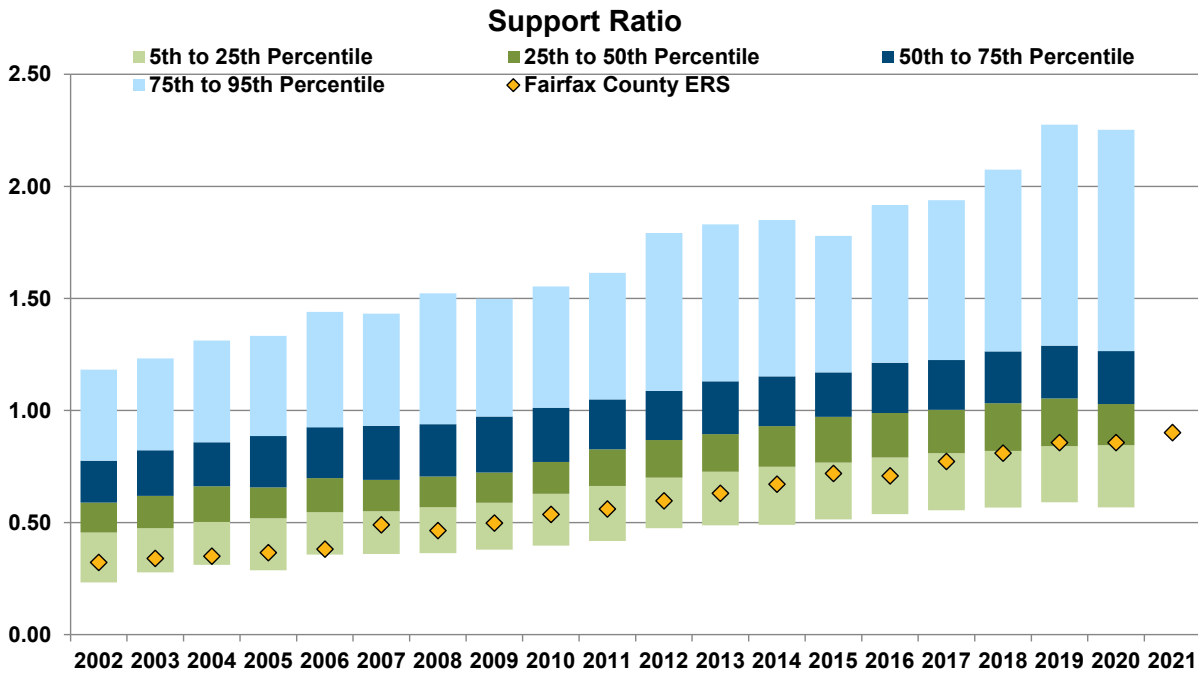
Plan maturity can be measured in a variety of ways, but they all get at one basic dynamic – the larger the plan is compared to the contribution or revenue base that supports it, the more sensitive the plan will be to risk. The measures below have been selected as the most important in understanding the primary risks identified for this System.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION II - IDENTIFICATION AND ASSESSMENT OF RISK

Inactives per Active (Support Ratio)

One simple measure of plan maturity is the ratio of the number of inactive members (those receiving benefits or entitled to a deferred benefit) to the number of active members. The revenue base supporting the System is usually proportional to the number of active members, so a relatively high number of inactives compared to actives indicates a larger System relative to its revenue base as well.



Survey Data from Public Plans Database as of 6/28/2021

The graph above shows the distribution from the 5th to 95th percentile of support ratios for the plans in the Public Plans Database. The gold diamonds show how the Retirement System compares to the other plans.

Whereas the support ratios for the plans as a whole have increased over the period as they mature, ERS's support ratio has increased more than other plans over the period and is among the 25th to 50th percentile of the Public Plans Database.

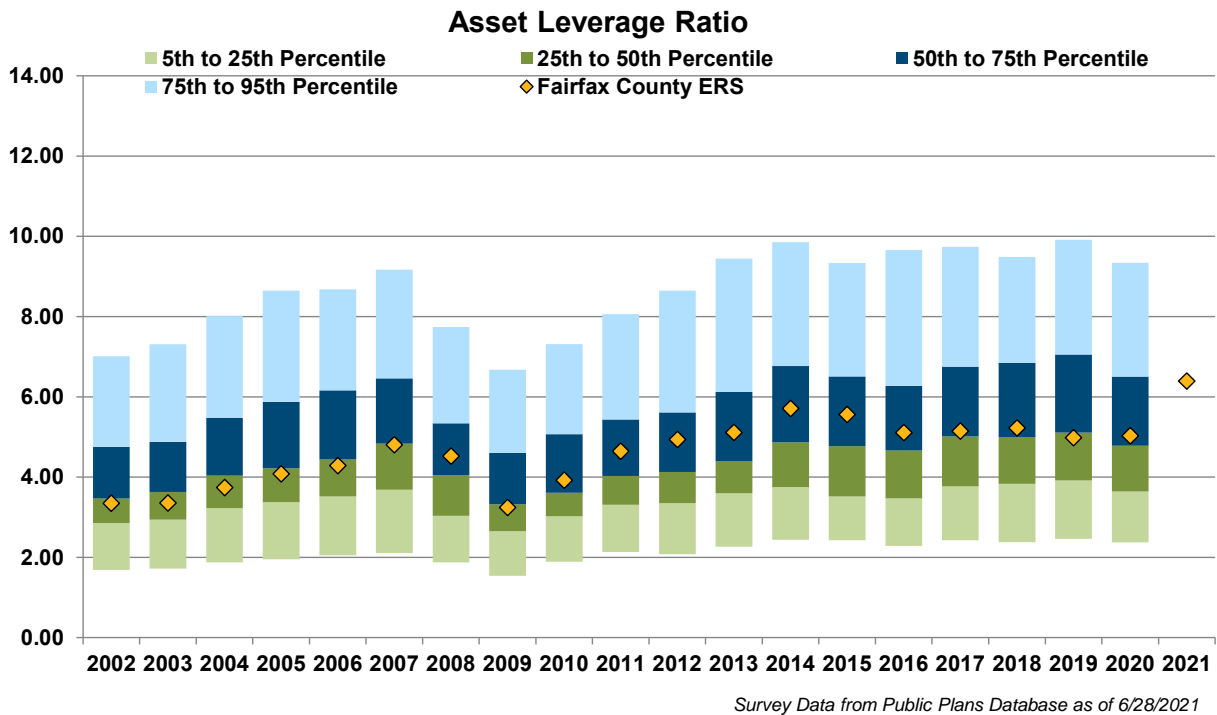
**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION II - IDENTIFICATION AND ASSESSMENT OF RISK

Leverage Ratios

Leverage or volatility ratios measure the size of the plan compared to its revenue base more directly. An asset leverage ratio of 5.0, for example, means that if the System experiences a 10% loss on assets compared to the expected return, the loss would be equivalent to 50% of payroll.

The same investment loss for a system with an asset leverage ratio of 10.0 would be equivalent to 100% of payroll. As the System becomes better funded, the asset leverage ratio will increase, and if it was 100% funded, the leverage ratio would equal the Actuarial Liability (AL) leverage ratio.



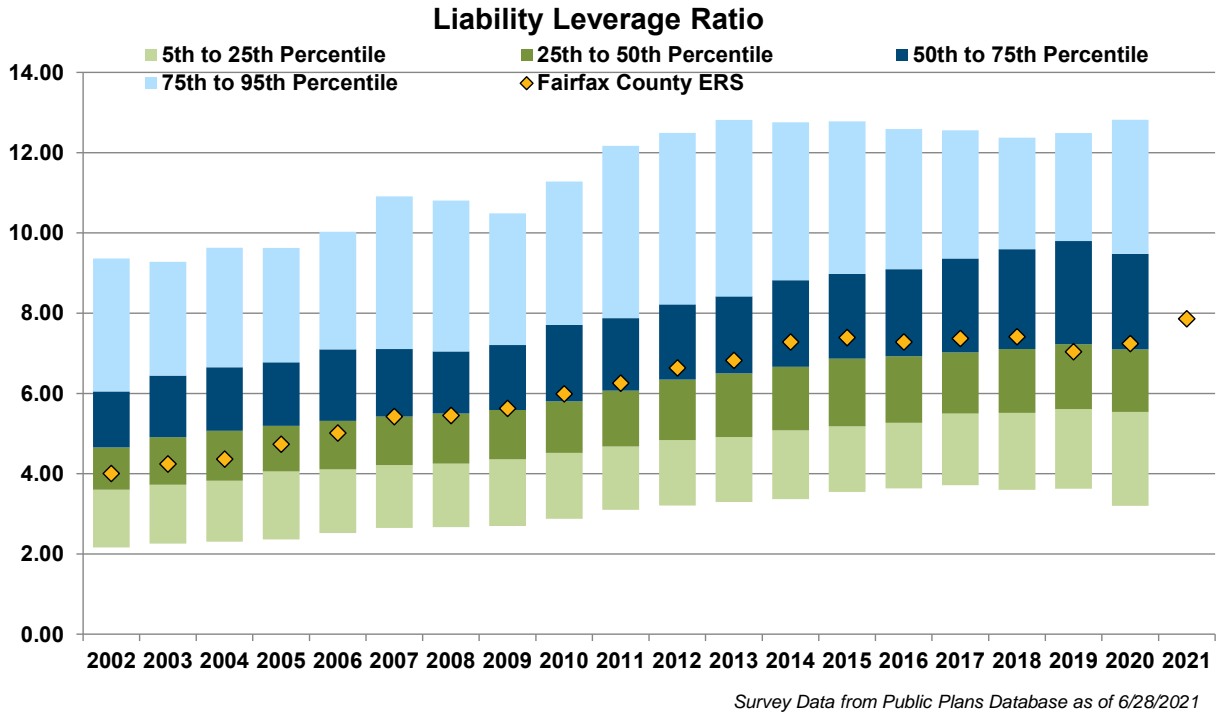
The chart above shows the distribution from the 5th to 95th percentile of asset leverage ratios for the plans in the Public Plans Database. The gold diamonds show how the System compares.

The System's asset leverage ratio has been in the 25th to 50th percentile compared to other plans before 2007 but moved into the 50th to 75th percentile in 2008 and came back to the 25th to 50th percentile in 2019. The asset leverage ratio will increase as the System approaches 100% funded.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION II - IDENTIFICATION AND ASSESSMENT OF RISK

The actuarial liability leverage ratio of 5.0 means that if the System experiences a 10% loss on liabilities compared to the expected liability, the liability loss would be equivalent to 50% of payroll.



The chart above shows the distribution from the 5th to 95th percentile of Actuarial Liability leverage ratios for the plans in the Public Plans Database. The gold diamonds show how the System compares.

The System's Actuarial Liability leverage ratio has historically been in the 25th to 50th percentile compared to other plans apart from 2019. But as the System matures and more of the liability is due to inactive members, this ratio continues to increase. The ratio has been under 8.0 over the period with the ratio currently around 7.9 in 2021.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION III – 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, County contributions, and the ultimate security of participants' benefits.

In this section, we present detailed information on the System's assets including:

- **Disclosure** of the System's assets at June 30, 2020 and June 30, 2021,
- 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 10 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 that 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 33⅓% 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 the prior year investment return assumption of 7.25%.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION III – ASSETS

Table III-1		
Statement of Assets at Market Value		
	June 30, 2020	June 30, 2021
<u>Assets</u>		
Equity in County's Pooled Cash,		
Contributions Receivable and Other Assets	\$ 20,121,748	\$ 20,738,434
Accrued Interest and Dividends Receivable	6,307,737	10,374,834
Receivable from Sale of Investments	170,303,014	152,889,828
Capital Assets	44,736	40,417
US Government Obligations	171,532,652	214,000,466
Asset-Backed Securities	124,131,724	117,362,797
Other Bonds and Notes	313,598,470	407,979,746
Common and Preferred Stock	791,420,601	1,130,853,306
Pooled and Mutual Funds	2,446,241,939	3,041,360,995
Short-Term Investments	259,692,003	205,607,282
Cash Collateral Received Under Securities Lending Agreements	109,323,253	130,882,230
Total Assets	\$ 4,412,717,877	\$ 5,432,090,335
<u>Liabilities</u>		
Payable for Collateral Received Under Securities Lending Agreements	\$ 109,323,253	\$ 130,882,230
Payable for Purchase of Investments	154,074,634	142,991,611
Accounts Payable and Accrued Expenses	7,256,781	11,984,068
Total Liabilities	\$ 270,654,668	\$ 285,857,909
Net Assets Available for Benefits	\$ 4,142,063,209	\$ 5,146,232,426

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION III – ASSETS

Table III-2	
Changes in Market Values	
Value of Assets – June 30, 2020	\$ 4,142,063,209
<u>Additions</u>	
Contributions:	
Employer Contributions	\$ 227,846,281
Employee Contributions	39,914,839
Total Contributions	\$ 267,761,120
Investment Income:	
Net Appreciation (Depreciation) in Fair Value of Investments	\$ 1,088,170,955
Interest	41,753,907
Dividends	18,436,766
Total Investment Income	\$ 1,148,361,628
Investment Activity Expenses:	
Management Fees	\$ (51,435,671)
Custodian Fees	(95,173)
Consulting Expense	(116,498)
Allocated Administrative Expenses	(1,732,600)
Total Investment Activity Expenses	\$ (53,379,942)
From Securities Lending Activities:	
Securities Lending Income	\$ 1,811,472
Securities Lending Expenses	
Borrowers Rebates	0
Management Fees	(533,475)
Net Income from Securities Lending Activities	\$ 1,277,997
Net Investment Income	\$ 1,096,259,683
Total Additions	\$ 1,364,020,803
<u>Deductions</u>	
Annuity Benefits	\$ (337,623,320)
Disability Benefits	(7,557,010)
Survivor Benefits	(8,450,206)
Refunds and Other Expenses	(3,701,609)
Administrative Expenses	(2,519,441)
Total Deductions	\$ (359,851,586)
Total	
Net Increase (Decrease)	\$ 1,004,169,217
Value of Assets – June 30, 2021	\$ 5,146,232,426

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION III – ASSETS

Actuarial Value of Assets

The actuarial value of assets represents a “smoothed” value developed by the actuary to reduce or eliminate erratic results which could develop from short-term fluctuations in the market value of assets. For this system, the actuarial value has been calculated by adding 33⅓% of the difference between market value and expected value to the expected value. The actuarial value of assets in this July 1, 2021 also recognizes an additional amount of past deferred gains in order to offset the increase in liability caused by changes in assumptions. The following table illustrates the calculation of actuarial value of assets for the June 30, 2021 valuation.

Table III-3 Development of Actuarial Value of Assets as of June 30, 2021	
1. Actuarial Value of Assets at June 30, 2020	\$ 4,349,257,826
2. Amount in (1) with Interest to June 30, 2021	4,664,579,018
3. Employer and Member Contributions for the Plan Year Ended June 30, 2021	267,761,120
4. Interest on Contributions Assuming Received Uniformly Throughout the Year to June 30, 2021	9,536,515
5. Disbursements from Trust Except Investment Expenses, July 1, 2020 Through June 30, 2021	(359,851,586)
6. Interest on Disbursements Assuming Payments Made Uniformly Throughout the Year to June 30, 2021	(12,816,386)
7. Expected Value of Assets at June 30, 2021 = (2) + (3) + (4) + (5) + (6)	4,569,208,681
8. Market Value of Assets at June 30, 2021	<u>5,146,232,426</u>
9. Excess of (8) Over (7)	\$ 577,023,745
10. Additional Recognition of Past Deferred Gains	\$ 236,000,000
11. Actuarial Value of Assets at June 30, 2021 = (7) + 33-1/3% of (9) + (10)	\$ 4,997,549,929

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION III – ASSETS

Investment Performance

The market value of assets (MVA) returned 26.76% during 2021, which is higher than the assumed 7.25% return. A return of 11.72% 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 III-4 Annual Rates of Return				
Year Ending June 30,	Market Value	Actuarial Value	Total Return Standard & Poor's 500 Index	Barclays Global Aggregate Index¹
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%
2016	(0.5)%	4.3%	4.0%	6.0%
2017	6.8%	4.8%	17.9%	(0.3)%
2018	7.3%	5.6%	14.4%	(0.4)%
2019	6.0%	5.8%	10.4%	7.9%
2020	2.7%	4.8%	7.5%	8.7%
2021	26.8%	11.7%	40.8%	(0.3)%

¹ Formerly the Lehman Global Aggregate Bond Index.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION III – ASSETS

Expected benefit payments are projected for the closed group valued at June 30, 2021. Projecting any further than 10 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 28.88% for all years shown. This projection assumes no further liability gains or losses, continued reflection of untapped investment gains or losses, a 2.25% annual increase in the total covered payroll, and models the anticipated impact of new hires coming in with altered plan provisions.

Table III-5		
Projection of System's Benefit Payments and County Contributions		
Year Beginning	Expected	Expected
<u>July 1,</u>	<u>Benefit Payments</u>	<u>County Contributions</u>
2021	\$ 402,777,000	\$ 232,519,000
2022	394,764,000	237,750,000
2023	404,201,000	243,277,000
2024	405,307,000	248,750,000
2025	419,337,000	254,347,000
2026	434,260,000	260,070,000
2027	449,518,000	265,922,000
2028	464,968,000	271,905,000
2029	479,681,000	278,023,000
2030	493,899,000	284,278,000

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION IV - LIABILITIES

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

- **Disclosure** of System liabilities at June 30, 2020 and June 30, 2021,
- 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 fund all future benefits of the System, assuming participants continue to accrue benefits and all assumptions are met.
- **Actuarial 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 fund the current accrued obligations of the System, assuming no future accruals of benefits and that all assumptions are met, including the 6.75% investment return. These liabilities are also used to assess whether the System 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 the System's assets yields, for each respective type, a **net surplus**, or an **unfunded liability**.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION IV - LIABILITIES

Table IV-1		
Liabilities/Net (Surplus)/Unfunded		
	June 30, 2020	June 30, 2021
Present Value of Future Benefits		
Active Participant Benefits (excluding DROP)	\$ 3,081,890,218	\$ 3,337,824,668
DROP Participant Benefits	504,591,461	488,093,331
Retiree Benefits	3,083,511,434	3,363,276,463
Terminated Vested and Inactive Members	<u>131,266,722</u>	<u>143,809,512</u>
Present Value of Benefits (PVB)	\$ 6,801,259,835	\$ 7,333,003,974
Market Value of Assets (MVA)	\$ 4,142,063,209	\$ 5,146,232,426
Future Employee Contributions	304,540,978	326,656,265
Future County Contributions	<u>2,354,655,648</u>	<u>1,860,115,283</u>
Total Resources	\$ 6,801,259,835	\$ 7,333,003,974
Actuarial Liability		
Present Value of Benefits (PVB)	\$ 6,801,259,835	\$ 7,333,003,974
Present Value of Future Normal Costs (PVFNC)		
County Portion	535,652,774	676,538,186
Employee Portion	<u>304,540,978</u>	<u>326,656,265</u>
Actuarial Liability	\$ 5,961,066,083	\$ 6,329,809,523
(AL = PVB - PVFNC)		
Actuarial Value of Assets (AVA)	\$ 4,349,257,826	\$ 4,997,549,929
Net (Surplus)/Unfunded (AL – AVA)	\$ 1,611,808,257	\$ 1,332,259,594
Present Value of Accrued Benefits		
Present Value of Benefits (PVB)	\$ 6,801,259,835	\$ 7,333,003,974
Present Value of Future Benefit Accruals (PVFBA)	<u>1,595,844,272</u>	<u>1,795,042,034</u>
Present Value of Accrued Benefits	\$ 5,205,415,563	\$ 5,537,961,940
(PVAB = PVB – PVFBA)		
Market Value of Assets (MVA)	<u>\$ 4,142,063,209</u>	<u>\$ 5,146,232,426</u>
Net Unfunded, not less than \$0 (PVAB – MVA)	\$ 1,063,352,354	\$ 391,729,514

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION IV - 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 due to changes in System assets resulting from the following:

- 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 that 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 IV-2			
	Present Value of Benefits	Actuarial Liability	Present Value of Accrued Benefits
Liabilities June 30, 2020	\$ 6,801,259,835	\$ 5,961,066,083	\$ 5,205,415,563
Liabilities June 30, 2021	<u>7,333,003,974</u>	<u>6,329,809,523</u>	<u>5,537,961,940</u>
Liability Increase (Decrease)	\$ 531,744,139	\$ 368,743,440	\$ 332,546,377
Change Due to:			
Plan Amendment	\$ 0	\$ 0	\$ 0
Actuarial (Gain)/Loss	<i>Not Calculated</i>	(43,615,539)	<i>Not Calculated</i>
Method and Assumption Changes	413,351,305	233,719,707	185,269,861
Benefits Accumulated and Other Sources	118,392,834	178,639,272	147,276,516

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION V - 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.

Development of County Contribution Rate

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 a 15-year amortization of the UAL that existed on June 30, 2018 other than that which existed from prior amendment and assumption change bases. In the future, additional amortization bases will be created each year. Finally, the rate includes an expense rate. Please see Table V-2 for details.

This section contains a comparison of the County contribution rates for FY 2022 and 2023 in Table V-1. Tables V-2 and V-3 show the calculations of the FY 2022 and 2023 rates using a closed 15-year layered amortization approach.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION V - CONTRIBUTIONS

The table below presents and compares the budgeted rate for the System for this valuation and the prior one.

The UAL rate is the level percent of member payroll which, when applied to each year's payroll, will be sufficient to amortize the various layers of unfunded actuarial liability over their respective 15-year periods.

Table V-1		
Actuarially Determined Rate (for County Contribution)		
Valuation Date	June 30, 2020	June 30, 2021
Fiscal Year	2022	2023
Normal Cost Rate	8.40%	9.98%
UAL Rate	20.23%	18.60%
Expense Rate	<u>0.25%</u>	<u>0.30%</u>
Total County Rate	28.88%	28.88%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION V - CONTRIBUTIONS

Table V-2 Development of UAL Amortization Layer		
	June 30, 2020 (for FY 2022)	June 30, 2021 (for FY 2023)
1. Present Value of Future Benefits		
a. Active Employees	\$ 3,081,890,218	\$ 3,337,824,668
b. DROP	504,591,461	488,093,331
c. Retired Members	3,083,511,434	3,363,276,463
d. Vested Terminated and Inactive Members	<u>131,266,722</u>	<u>143,809,512</u>
e. Total Present Value	\$ 6,801,259,835	\$ 7,333,003,974
2. Present Value of Future Normal Costs		
a. County Portion	\$ 535,652,774	\$ 676,538,186
b. Employee Portion	<u>304,540,978</u>	<u>326,656,265</u>
c. Total Present Value	\$ 840,193,752	\$ 1,003,194,451
3. Actuarial Liability (1) – (2)	\$ 5,961,066,083	\$ 6,329,809,523
4. Actuarial Value of Assets	\$ 4,349,257,826	\$ 4,997,549,929
5. Unfunded Actuarial Liability (UAL)	\$ 1,611,808,257	\$ 1,332,259,594
6. Outstanding Prior Bases (see Table V-3)	<u>1,523,392,839</u>	<u>1,560,764,917</u>
7. New Base at July 1, 2020//2021	88,415,418	(228,505,323)
8. Expected County Contribution FY 2021//2022 (County Rate x Expected Payroll)	233,312,197	232,518,774
9. Employer Normal Cost Payments	(69,129,540)	(80,351,017)
10. Expense Payments (using 0.25%/0.30% assumption)	<u>(2,057,427)</u>	<u>(2,415,361)</u>
11. Net Contribution to apply to UAL	162,125,230	149,752,396
12. Amortization of prior bases (from Table V-3)	<u>158,475,367</u>	<u>170,875,428</u>
13. Excess UAL Payment (11 - 12)	\$ 3,649,863	\$ (21,123,032)
14. Remaining New Base One Year Later (7 - 13, with interest)	\$ 91,045,680	\$ (222,105,139)
15. 14-year Amortization Factor	10.3847	10.3966
16. New UAL Amortization Layer (14 / 15)	\$ 8,767,290	\$ (21,363,248)
17. Next Year Amortization of Bases (from Table V-3)	<u>162,334,980</u>	<u>174,465,902</u>
18. Total UAL Payments (16 + 17)	\$ 171,102,270	\$ 153,102,654
19. Estimated Payroll	\$ 845,602,406	\$ 823,235,617
20. UAL as a % of Payroll	20.23%	18.60%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION V - CONTRIBUTIONS

Table V-3 Schedule of Amortization Bases						
Type of Base	Date Established	June 30, 2021	FY 2022	June 30, 2022	Amortization Years	FY 2023
		Outstanding Amount	Amortization Payment	Outstanding Amount ¹		Amortization Payment
1. Reduce Disability Offset to 40%	7/1/2007	240,648	248,629	0	0	0
2. Reduce Disability Offset to 30%	7/1/2008	314,136	165,780	164,056	1	169,510
3. Assumption Changes	7/1/2010	737,618	165,824	616,078	4	169,555
4. Reduce Disability Offset to 25%	7/1/2013	495,579	82,928	443,349	6	84,794
5. Assumption Changes	7/1/2014	63,824,486	9,537,573	58,278,429	7	9,752,168
6. Reduce Disability Offset to 15%	7/1/2014	1,109,990	165,871	1,013,537	7	169,603
7. Assumption Changes	7/1/2016	58,649,351	7,299,598	55,066,245	9	7,463,839
8. Unfunded Base	7/1/2018	1,245,489,305	134,409,189	1,190,688,405	11	137,433,396
9. New UAL Layer 2019	7/1/2019	98,858,124	10,042,781	95,154,857	12	10,268,744
10. New UAL Layer 2020	7/1/2020	<u>91,045,680</u>	<u>8,757,255</u>	<u>88,143,277</u>	14	<u>8,954,293</u>
Total		\$ 1,560,764,917	\$ 170,875,428	\$ 1,489,568,233		\$ 174,465,902

¹ Outstanding amount includes a full year of interest on prior year balance and half year on the amortization payment

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION VI - 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 June 30, 2020 and June 30, 2021 are exhibited in Table VI-1, which also includes a reconciliation of liabilities determined as of the prior valuation, June 30, 2020 to the liabilities as of June 30, 2021.

Table VI-2 is a history of gains and losses in Actuarial Liability, and Table VI-3 is the Schedule of Funded Liabilities by Type, which shows the portion of Accrued Liability covered by Assets. See our report dated October 21, 2021 for the required disclosures under GASB Statement No. 67.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION VI - ACCOUNTING STATEMENT INFORMATION

Table VI-1		
Accounting Statement Information		
	June 30, 2020	June 30, 2021
A. FASB ASC Topic 960 Basis		
1. Present Value of Benefits Accrued and Vested to Date		
a. Members Currently Receiving Payments	\$ 3,083,511,434	\$ 3,363,276,463
b. Vested Terminated and Inactive Members	131,266,722	143,809,512
c. DROP	504,591,461	488,093,331
d. Active Members	<u>878,591,464</u>	<u>905,362,143</u>
e. Total PVVB	\$ 4,597,961,081	\$ 4,900,541,449
2. Present Value of Non-Vested Accrued Benefits for Active Members	<u>607,454,482</u>	<u>637,420,491</u>
3. Total Present Value of Accrued Benefits	\$ 5,205,415,563	\$ 5,537,961,940
4. Assets at Market Value	<u>4,142,063,209</u>	<u>5,146,232,426</u>
5. Unfunded Present Value of Accrued Benefits, But Not Less Than Zero	\$ 1,063,352,354	\$ 391,729,514
6. Ratio of Assets to Value of Benefits (4) / (3)	79.6%	92.9%
B. Statement of Changes in Present Value of Accrued Benefits		
Actuarial Present Value of Accrued Benefits as of June 30, 2020		\$ 5,205,415,563
Increase (Decrease) During Years Attributable to:		
Passage of Time		\$ 377,871,403
Benefit Paid – FY 2021		(357,332,145)
Assumption Change		185,269,861
Plan Amendment		0
Benefits Accrued, Other Gains/Losses		<u>126,737,258</u>
Net Increase (Decrease)		\$ 332,546,377
Actuarial Present Value of Accrued Benefits as of June 30, 2021		\$ 5,537,961,940

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

SECTION VI - ACCOUNTING STATEMENT INFORMATION

**Table VI-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>					
	2016	2017	2018	2019	2020	2021
Investment Income	\$ (120,548,533)	\$ (90,769,788)	\$ (64,779,936)	\$ (59,391,459)	\$ (103,597,308)	\$ 192,341,249
Combined Liability Experience	<u>34,314,735</u>	<u>(74,947,986)</u>	<u>(41,362,698)</u>	<u>(29,354,840)</u>	<u>5,460,818</u>	<u>43,615,539</u>
Gain (or Loss) During Year from Financial Experience	\$ (86,233,798)	\$ (165,717,774)	\$ (106,142,634)	\$ (88,746,299)	\$ (98,136,490)	\$ 235,956,788
Non-Recurring Items	<u>(69,346,439)</u>	<u>(582,418)</u>	<u>(603,265)</u>	<u>0</u>	<u>0</u>	<u>2,280,293</u>
Composite Gain (or Loss) During Year	\$ (155,580,237)	\$ (166,300,192)	\$ (106,745,899)	\$ (88,746,299)	\$ (98,136,490)	\$ 238,237,081

**Table VI-3
Schedule of Funded Liabilities by Type
Aggregate Accrued Liabilities For**

Valuation Date June 30,	(1)	(2)	(3)	Reported Assets*	Portion of Accrued Liabilities by Reported Assets		
	Active Member Contributions	Retirees Vested Terms, Beneficiaries & DROP	Active Members (Employer Financed Portion)		(1)	(2)	(3)
2016	\$ 396,434,811	\$ 2,987,100,852	\$ 1,732,881,508	\$ 3,831,179,295	100%	100%	26%
2017	380,179,076	3,216,480,052	1,771,072,393	3,930,924,191	100%	100%	19%
2018	397,692,499	3,444,004,357	1,749,526,935	4,070,486,587	100%	100%	13%
2019	404,341,900	3,624,784,344	1,762,554,326	4,220,420,263	100%	100%	11%
2020	419,154,588	3,719,369,617	1,822,541,878	4,349,257,826	100%	100%	12%
2021	409,477,095	3,995,179,306	1,925,153,122	4,997,549,929	100%	100%	31%

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

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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 reasonableness and consistency in accordance with Actuarial Standards of Practice No. 23 – Data Quality. The data was collected as of December 31, 2020.

Data reported in this Appendix is as of the December 31, 2020 data collection date. Covered payroll and benefits in pay status reported elsewhere in this report have been adjusted to approximate the June 30, 2021 values.

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 December 31, 2020

		Active Members *		
		Count	Average Age	Average Salary
School	Plan A	1,374	54.97	\$ 35,630
	Plan B	1,480	55.20	41,272
	Plan C	1,189	49.38	27,005
	Plan D	883	50.03	29,503
	Plan E	<u>588</u>	<u>44.35</u>	<u>27,058</u>
	Total	5,514	51.90	\$ 33,389
County	Plan A	1,412	50.70	\$ 70,437
	Plan B	2,742	50.87	76,742
	Plan C	853	40.77	57,330
	Plan D	2,356	42.38	69,438
	Plan E	<u>1,138</u>	<u>38.76</u>	<u>57,195</u>
	Total	8,501	45.85	\$ 69,106
Total Systems	Plan A	2,786	52.81	\$ 53,271
	Plan B	4,222	52.39	64,308
	Plan C	2,042	45.78	39,673
	Plan D	3,239	44.47	58,551
	Plan E	<u>1,726</u>	<u>40.66</u>	<u>46,928</u>
	Total	14,015	48.23	\$ 55,054

* Excludes DROP participants.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

APPENDIX A - MEMBERSHIP INFORMATION

	Inactive Members		
	School	County	Total
Service Retirement			
Count	3,640	5,619	9,259
Annual Basic Benefit	\$ 65,964,403	\$ 191,671,746	\$ 257,636,148
Annual Supplements	10,280,071	29,671,797	39,951,869
Service – Connected Disability			
Count	69	65	134
Annual Basic Benefit ¹	\$ 1,489,878	\$ 1,883,122	\$ 3,373,000
Ordinary Disability			
Count	191	148	339
Annual Basic Benefit	\$ 1,997,586	\$ 2,336,391	\$ 4,333,976
Beneficiaries			
Count	42	473	515
Annual Basic Benefit	\$ 612,008	\$ 8,173,202	\$ 8,785,210
DROP			
Count	262	491	753
Annual Basic Benefit	\$ 5,570,106	\$ 19,252,849	\$ 24,822,954
Annual Supplements	2,541,877	8,690,719	11,232,596
Vested Former Members			
Count	1,106	1,288	2,394
Annual Basic Benefit ²	\$ 6,132,245	\$ 11,995,523	\$ 18,127,768

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

² Benefits are payable at age 65.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

APPENDIX A - MEMBERSHIP INFORMATION

Membership Statistics						
The number of retired members, beneficiaries, and disabled members can be analyzed as follows:						
	<u>December 31, 2019</u>		<u>December 31, 2020</u>		<u>% Change</u>	
		Average Monthly Benefit		Average Monthly Benefit		Average Monthly Benefit
Inactive Members	Count		Count		Count	
Service Retirement						
Basic Benefit	8,841	\$ 2,340	9,259	\$ 2,348	4.7%	0.3%
Supplement	1,950	1,565	2,119	1,571	8.7%	0.4%
Service-Connected Disability	140	2,473	134	2,431	-4.3%	-1.7%
Ordinary Disability	351	1,083	339	1,079	-3.4%	-0.4%
Beneficiaries	<u>492</u>	<u>1,430</u>	<u>515</u>	<u>1,439</u>	<u>4.7%</u>	<u>0.7%</u>
Total/Average (Basic Benefit)	9,824	2,252	10,247	2,261	4.3%	0.4%

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

APPENDIX A - MEMBERSHIP INFORMATION

Data Reconciliation from June 30, 2020 to June 30, 2021								
	Active	DROP	Terminated Vested	Retired	Service- Connected Disability	Ordinary Disability	Beneficiary	Total
Participant count as of July 1, 2020	14,204	785	2,349	8,841	140	351	492	27,162
New Hires / Re-hires	1,176		(27)					1,149
Terminated Vested	(212)		212					0
DROP	(304)	304						0
Retired	(209)	(334)	(94)	637				0
Deceased with beneficiary	(5)		(43)				48	0
Deceased without beneficiary	(16)	(2)	(5)	(169)	(7)	(19)	(23)	(241)
Benefits Expired			(7)			(1)	(2)	(10)
Ordinary Disability	(6)		(2)			8		0
Service-Connected Disability	(2)				2			0
Vested Return of Contributions			(44)		(1)			(45)
Terminated Not Vested	(611)							(611)
Corrections			<u>5</u>					<u>5</u>
Change	(189)	(32)	45	418	(6)	(12)	23	247
Participant count as of June 30, 2021	14,015	753	2,394	9,259	134	339	515	27,409

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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	0	0	0	0	0	0	0	0	0
25 to 29	0	0	1	0	0	0	0	0	0	1
30 to 34	0	2	34	15	0	0	0	0	0	51
35 to 39	0	5	41	86	19	0	0	0	0	151
40 to 44	0	2	27	76	83	21	0	0	0	209
45 to 49	0	1	27	53	57	67	16	4	4	225
50 to 54	0	3	31	59	54	72	60	26	26	305
55 to 59	0	4	39	40	48	59	25	33	33	248
60 to 64	0	4	28	43	34	21	8	11	11	149
65 & up	1	11	10	21	9	6	7	8	8	73
Total	1	32	238	393	304	246	116	82	82	1,412

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	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	52,401	0	0	0	0	0	0	52,401
30 to 34	0	97,812	1,877,239	832,538	0	0	0	0	0	2,807,589
35 to 39	0	174,383	2,282,208	5,333,983	1,224,121	0	0	0	0	9,014,695
40 to 44	0	42,926	1,564,841	5,207,188	6,059,781	1,508,889	0	0	0	14,383,625
45 to 49	0	73,720	1,744,014	3,768,870	4,001,611	5,534,673	1,437,769	328,696	328,696	16,889,353
50 to 54	0	83,277	1,831,830	3,811,747	3,678,112	6,038,219	5,924,733	2,051,404	2,051,404	23,419,322
55 to 59	0	61,272	1,993,320	2,796,063	3,321,862	4,952,395	2,264,007	3,097,964	3,097,964	18,486,883
60 to 64	0	93,092	1,357,680	2,773,926	2,463,376	1,471,069	848,730	939,455	939,455	9,947,328
65 & up	52,254	192,150	432,831	1,143,033	626,317	550,191	672,118	786,466	786,466	4,455,360
Total	\$ 52,254	\$ 818,632	\$ 13,136,364	\$ 25,667,348	\$ 21,375,180	\$ 20,055,436	\$ 11,147,357	\$ 7,203,985	\$ 7,203,985	\$ 99,456,556



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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	0	0	0	0	0	0	0	0
25 to 29	0	0	2	0	0	0	0	0	2
30 to 34	0	2	79	36	1	0	0	0	118
35 to 39	0	4	107	155	61	5	0	0	332
40 to 44	0	5	79	138	103	29	1	0	355
45 to 49	1	4	75	148	109	80	11	1	429
50 to 54	0	1	84	146	130	103	34	15	513
55 to 59	0	6	71	159	142	94	20	14	506
60 to 64	0	5	71	132	87	25	5	6	331
65 & up	0	2	34	51	36	26	5	2	156
Total	1	29	602	965	669	362	76	38	2,742

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	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	100,890	0	0	0	0	0	100,890
30 to 34	0	58,417	5,111,592	2,277,409	45,305	0	0	0	7,492,723
35 to 39	0	166,266	7,430,117	10,796,410	4,004,603	324,001	0	0	22,721,397
40 to 44	0	231,769	6,052,173	10,309,928	7,527,035	2,287,748	74,853	0	26,483,506
45 to 49	16,746	114,769	4,998,669	11,740,939	8,959,362	6,862,068	999,529	73,869	33,765,951
50 to 54	0	30,737	5,577,234	11,693,894	10,884,540	9,703,343	3,433,230	1,388,972	42,711,950
55 to 59	0	168,251	4,234,742	11,887,649	11,324,025	8,585,014	1,935,611	1,438,044	39,573,336
60 to 64	0	292,582	4,772,938	10,248,376	7,444,287	1,784,326	442,803	658,634	25,643,946
65 & up	0	42,367	2,113,410	4,103,540	2,804,045	2,244,728	448,888	176,136	11,933,114
Total	\$ 16,746	\$ 1,105,158	\$ 40,391,765	\$ 73,058,145	\$ 52,993,202	\$ 31,791,228	\$ 7,334,914	\$ 3,735,655	\$ 210,426,813

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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	1	13	0	0	0	0	0	0	14
25 to 29	3	113	14	0	0	0	0	0	130
30 to 34	3	135	57	0	0	0	0	0	195
35 to 39	4	99	49	0	0	0	0	0	152
40 to 44	2	66	24	1	0	0	0	0	93
45 to 49	0	57	24	0	0	0	0	0	81
50 to 54	0	31	22	0	0	0	0	0	53
55 to 59	1	45	24	0	1	0	0	0	71
60 to 64	0	25	16	0	0	0	0	0	41
65 & up	1	19	3	0	0	0	0	0	23
Total	15	603	233	1	1	0	0	0	853

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	\$ 3,197	\$ 540,737	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 543,934
25 to 29	56,872	5,462,263	782,171	0	0	0	0	0	6,301,306
30 to 34	58,656	7,095,951	3,768,116	0	0	0	0	0	10,922,723
35 to 39	41,996	5,891,568	3,236,069	0	0	0	0	0	9,169,633
40 to 44	73,415	3,622,106	1,574,484	75,271	0	0	0	0	5,345,276
45 to 49	0	3,229,958	1,670,734	0	0	0	0	0	4,900,692
50 to 54	0	1,663,882	1,702,887	0	0	0	0	0	3,366,769
55 to 59	18,363	2,826,161	1,646,316	0	76,198	0	0	0	4,567,038
60 to 64	0	1,299,013	1,231,770	0	0	0	0	0	2,530,783
65 & up	5,627	991,751	256,673	0	0	0	0	0	1,254,051
Total	\$ 258,126	\$ 32,623,390	\$ 15,869,220	\$ 75,271	\$ 76,198	\$ 0	\$ 0	\$ 0	\$ 48,902,205

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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	1	16	0	0	0	0	0	0	17
25 to 29	2	221	46	0	0	0	0	0	269
30 to 34	1	314	158	0	0	0	0	0	473
35 to 39	2	234	156	0	0	0	0	0	392
40 to 44	2	186	127	2	0	0	0	0	317
45 to 49	1	182	87	0	0	0	0	0	270
50 to 54	1	141	78	1	0	0	0	0	221
55 to 59	0	114	85	0	0	0	0	0	199
60 to 64	1	91	60	1	1	0	0	0	154
65 & up	0	18	26	0	0	0	0	0	44
Total	11	1,517	823	4	1	0	0	0	2,356

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	\$ 3,563	\$ 762,630	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 766,193
25 to 29	78,757	12,220,623	2,769,288	0	0	0	0	0	15,068,668
30 to 34	17,668	19,227,691	10,425,456	0	0	0	0	0	29,670,815
35 to 39	59,852	16,059,785	11,060,281	0	0	0	0	0	27,179,918
40 to 44	77,455	13,375,384	10,215,238	169,939	0	0	0	0	23,838,016
45 to 49	18,363	12,908,182	7,143,437	0	0	0	0	0	20,069,982
50 to 54	111,861	9,963,141	5,992,332	87,908	0	0	0	0	16,155,242
55 to 59	0	8,375,140	6,577,925	0	0	0	0	0	14,953,065
60 to 64	7,492	6,377,402	5,358,903	155,199	206,118	0	0	0	12,105,114
65 & up	0	1,189,676	2,599,827	0	0	0	0	0	3,789,503
Total	\$ 375,011	\$ 100,459,654	\$ 62,142,687	\$ 413,046	\$ 206,118	\$ 0	\$ 0	\$ 0	\$ 163,596,516

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

APPENDIX A - MEMBERSHIP INFORMATION

Distribution of Active Participants - - County Plan E

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	54	19	0	0	0	0	0	0	0	73
25 to 29	188	69	0	0	0	0	0	0	0	257
30 to 34	134	59	0	0	0	0	0	0	0	193
35 to 39	90	57	0	0	0	0	0	0	0	147
40 to 44	96	41	0	1	0	0	0	0	0	138
45 to 49	71	31	0	0	0	0	0	0	0	102
50 to 54	75	26	0	0	0	0	0	0	0	101
55 to 59	51	22	0	0	0	0	0	0	0	73
60 to 64	29	12	0	0	0	0	0	0	0	41
65 & up	11	2	0	0	0	0	0	0	0	13
Total	799	338	0	1	0	0	0	0	0	1,138

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	\$ 2,239,833	\$ 887,878	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 3,127,711
25 to 29	8,906,438	3,701,153	0	0	0	0	0	0	0	12,607,591
30 to 34	7,622,395	3,379,474	0	0	0	0	0	0	0	11,001,869
35 to 39	5,419,782	3,946,794	0	0	0	0	0	0	0	9,366,576
40 to 44	6,204,524	2,698,579	0	66,552	0	0	0	0	0	8,969,655
45 to 49	4,357,305	2,148,625	0	0	0	0	0	0	0	6,505,930
50 to 54	4,388,920	1,596,996	0	0	0	0	0	0	0	5,985,916
55 to 59	2,935,749	1,354,067	0	0	0	0	0	0	0	4,289,816
60 to 64	1,540,773	1,115,174	0	0	0	0	0	0	0	2,655,947
65 & up	420,648	156,460	0	0	0	0	0	0	0	577,108
Total	\$ 44,036,367	\$ 20,985,200	\$ 0	\$ 66,552	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 65,088,119

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	3	8	5	0	0	0	0	0	16
35 to 39	0	7	25	12	5	0	0	0	0	49
40 to 44	2	20	35	32	16	4	0	0	0	109
45 to 49	1	30	76	48	48	17	0	0	0	220
50 to 54	1	36	98	57	43	23	5	1	1	264
55 to 59	1	35	111	95	48	22	6	4	4	322
60 to 64	0	36	89	79	34	11	1	3	3	253
65 & up	0	14	61	43	13	6	4	0	0	141
Total	5	181	503	371	207	83	16	8	8	1,374

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	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	0	0	0	0	0	0	0	0
30 to 34	0	62,100	426,574	290,198	0	0	0	0	0	778,872
35 to 39	0	222,498	833,716	590,838	292,333	0	0	0	0	1,939,385
40 to 44	28,447	529,544	1,174,297	1,372,951	989,148	269,823	0	0	0	4,364,210
45 to 49	16,624	769,779	2,239,694	2,011,844	2,381,142	1,084,950	0	0	0	8,504,033
50 to 54	22,277	798,973	2,825,808	2,248,710	2,067,951	1,362,679	337,732	50,950	0	9,715,080
55 to 59	16,783	582,983	2,862,849	3,917,364	2,290,420	1,202,522	289,066	272,457	0	11,434,444
60 to 64	0	671,787	2,263,811	2,834,887	1,522,977	602,279	51,402	284,321	0	8,231,464
65 & up	0	170,755	1,335,265	1,453,181	551,773	268,745	208,347	0	0	3,988,066
Total	\$ 84,131	\$ 3,808,419	\$ 13,962,014	\$ 14,719,973	\$ 10,095,744	\$ 4,790,998	\$ 886,547	\$ 607,728	\$ 0	\$ 48,955,554



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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	0	0	0	0	0	0	0	0	0
25 to 29	0	0	2	0	0	0	0	0	0	2
30 to 34	0	1	14	7	0	0	0	0	0	22
35 to 39	1	3	13	24	12	0	0	0	0	53
40 to 44	0	6	35	34	20	7	2	0	0	104
45 to 49	1	19	46	52	47	24	9	2	2	200
50 to 54	0	16	85	73	65	46	9	4	4	298
55 to 59	0	32	113	92	69	33	18	4	4	361
60 to 64	0	12	86	84	62	24	8	1	1	277
65 & up	0	21	54	48	23	6	6	5	5	163
Total	2	110	448	414	298	140	52	16	16	1,480

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	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0
25 to 29	0	0	120,618	0	0	0	0	0	0	120,618
30 to 34	0	6,855	647,762	417,315	0	0	0	0	0	1,071,932
35 to 39	31,520	63,161	522,876	1,342,396	657,655	0	0	0	0	2,617,608
40 to 44	0	139,486	1,477,744	1,933,126	1,234,228	430,201	126,492	0	0	5,341,277
45 to 49	7,122	445,676	1,549,190	2,630,410	2,382,194	1,588,369	686,001	233,602	0	9,522,564
50 to 54	0	177,756	2,462,913	3,197,589	3,290,687	2,920,888	680,876	388,853	0	13,119,562
55 to 59	0	386,330	2,635,165	3,692,255	3,526,786	1,945,824	1,289,933	349,076	0	13,825,369
60 to 64	0	208,208	2,152,864	3,381,411	2,823,119	1,186,450	447,568	114,617	0	10,314,237
65 & up	0	195,608	1,433,460	1,590,352	861,431	315,822	319,332	432,686	0	5,148,691
Total	\$ 38,642	\$ 1,623,080	\$ 13,002,592	\$ 18,184,854	\$ 14,776,100	\$ 8,387,554	\$ 3,550,202	\$ 1,518,834	\$ 0	\$ 61,081,858



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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	0	8	0	0	0	0	0	0	0	8
25 to 29	3	29	6	0	0	0	0	0	0	38
30 to 34	7	61	15	0	0	0	0	0	0	83
35 to 39	13	89	17	0	0	0	0	0	0	119
40 to 44	13	126	24	0	0	0	0	0	0	163
45 to 49	24	144	27	0	0	0	1	0	0	196
50 to 54	9	145	29	0	0	0	0	0	0	183
55 to 59	15	135	35	0	0	0	0	0	0	185
60 to 64	7	107	18	0	0	0	0	0	0	132
65 & up	2	71	9	0	0	0	0	0	0	82
Total	93	915	180	0	0	0	1	0	0	1,189

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	\$ 231,794	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 231,794
25 to 29	38,556	734,694	219,773	0	0	0	0	0	0	993,023
30 to 34	122,403	1,547,876	644,609	0	0	0	0	0	0	2,314,888
35 to 39	246,732	2,520,009	675,066	0	0	0	0	0	0	3,441,807
40 to 44	188,071	3,505,412	948,823	0	0	0	0	0	0	4,642,306
45 to 49	368,541	3,450,822	1,081,902	0	0	0	101,453	0	0	5,002,718
50 to 54	131,132	3,469,690	1,180,364	0	0	0	0	0	0	4,781,186
55 to 59	223,811	3,371,226	1,410,042	0	0	0	0	0	0	5,005,079
60 to 64	133,245	2,705,993	725,308	0	0	0	0	0	0	3,564,546
65 & up	47,557	1,804,076	280,238	0	0	0	0	0	0	2,131,871
Total	\$ 1,500,048	\$ 23,341,592	\$ 7,166,125	\$ 0	\$ 0	\$ 0	\$ 101,453	\$ 0	\$ 0	\$ 32,109,218

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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	0	12	1	0	0	0	0	0	0	13
25 to 29	4	23	8	0	0	0	0	0	0	35
30 to 34	4	38	13	0	0	0	0	0	0	55
35 to 39	9	56	8	0	0	0	0	0	0	73
40 to 44	13	69	17	1	0	0	0	0	0	100
45 to 49	21	89	21	0	0	0	0	0	0	131
50 to 54	16	107	30	0	0	0	0	0	0	153
55 to 59	9	110	37	0	0	0	0	0	0	156
60 to 64	6	70	20	0	1	0	0	0	0	97
65 & up	8	48	14	0	0	0	0	0	0	70
Total	90	622	169	1	1	0	0	0	0	883

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	\$ 346,074	\$ 44,160	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 390,234
25 to 29	73,162	704,593	309,672	0	0	0	0	0	0	1,087,427
30 to 34	53,306	1,363,486	666,016	0	0	0	0	0	0	2,082,808
35 to 39	132,843	1,758,503	289,786	0	0	0	0	0	0	2,181,132
40 to 44	198,573	2,035,212	812,232	56,974	0	0	0	0	0	3,102,991
45 to 49	300,077	2,449,016	938,771	0	0	0	0	0	0	3,687,864
50 to 54	227,809	2,794,321	1,302,833	0	0	0	0	0	0	4,324,963
55 to 59	129,923	2,950,682	1,520,180	0	0	0	0	0	0	4,600,785
60 to 64	65,239	1,859,247	756,057	0	37,685	0	0	0	0	2,718,228
65 & up	90,201	1,299,456	484,789	0	0	0	0	0	0	1,874,446
Total	\$ 1,271,133	\$ 17,560,590	\$ 7,124,496	\$ 56,974	\$ 37,685	\$ 0	\$ 0	\$ 0	\$ 0	\$ 26,050,878



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

APPENDIX A - MEMBERSHIP INFORMATION

Distribution of Active Participants - - School Plan E

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	4	0	0	0	0	0	0	0	30
25 to 29	48	8	0	0	0	0	0	0	0	56
30 to 34	54	9	0	0	0	0	0	0	0	63
35 to 39	55	5	0	0	0	0	0	0	0	60
40 to 44	76	12	0	0	0	0	0	0	0	88
45 to 49	65	16	0	0	0	0	0	0	0	81
50 to 54	78	12	0	0	0	0	0	0	0	90
55 to 59	60	11	0	0	0	0	0	0	0	71
60 to 64	31	1	0	0	0	0	0	0	0	32
65 & up	17	0	0	0	0	0	0	0	0	17
Total	510	78	0	0	0	0	0	0	0	588

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	\$ 574,083	\$ 150,784	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 724,867
25 to 29	1,182,877	267,868	0	0	0	0	0	0	0	1,450,745
30 to 34	1,550,289	381,791	0	0	0	0	0	0	0	1,932,080
35 to 39	1,493,455	186,853	0	0	0	0	0	0	0	1,680,308
40 to 44	1,913,484	496,175	0	0	0	0	0	0	0	2,409,659
45 to 49	1,686,174	545,515	0	0	0	0	0	0	0	2,231,689
50 to 54	1,870,970	466,808	0	0	0	0	0	0	0	2,337,778
55 to 59	1,573,713	392,801	0	0	0	0	0	0	0	1,966,514
60 to 64	724,739	37,298	0	0	0	0	0	0	0	762,037
65 & up	414,278	0	0	0	0	0	0	0	0	414,278
Total	\$ 12,984,062	\$ 2,925,893	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 15,909,955



**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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	82	72	1	0	0	0	0	0	155
25 to 29	248	463	79	0	0	0	0	0	790
30 to 34	203	624	378	63	1	0	0	0	1,269
35 to 39	174	559	416	277	97	5	0	0	1,528
40 to 44	204	533	368	285	222	61	3	0	1,676
45 to 49	185	573	383	301	261	188	37	7	1,935
50 to 54	180	518	457	336	292	244	108	46	2,181
55 to 59	137	514	515	386	308	208	69	55	2,192
60 to 64	74	363	388	339	219	81	22	21	1,507
65 & up	40	206	211	163	81	44	22	15	782
Total	1,527	4,425	3,196	2,150	1,481	831	261	144	14,015

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	\$ 2,820,676	\$ 2,919,897	\$ 44,160	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 5,784,733
25 to 29	10,336,662	23,091,194	4,354,813	0	0	0	0	0	37,782,669
30 to 34	9,424,717	33,221,453	23,567,364	3,817,460	45,305	0	0	0	70,076,299
35 to 39	7,426,180	30,989,820	26,330,119	18,063,627	6,178,712	324,001	0	0	89,312,459
40 to 44	8,683,969	26,676,593	23,819,832	19,191,929	15,810,192	4,496,661	201,345	0	98,880,521
45 to 49	6,770,952	26,136,062	21,366,411	20,152,063	17,724,309	15,070,060	3,224,752	636,167	111,080,776
50 to 54	6,752,969	21,045,581	22,876,201	21,039,848	19,921,290	20,025,129	10,376,571	3,880,179	125,917,768
55 to 59	4,898,342	20,468,913	22,880,539	22,293,331	20,539,291	16,685,755	5,778,617	5,157,541	118,702,329
60 to 64	2,471,488	14,659,796	18,619,331	19,393,799	14,497,562	5,044,124	1,790,503	1,997,027	78,473,630
65 & up	1,030,565	6,042,299	8,936,493	8,290,106	4,843,566	3,379,486	1,648,685	1,395,288	35,566,488
Total	\$ 60,616,520	\$ 205,251,608	\$ 172,795,263	\$ 132,242,163	\$ 99,560,227	\$ 65,025,216	\$ 23,020,473	\$ 13,066,202	\$ 771,577,672

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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 Mortality Projected to 2021		
Age	Male	Female
50	47	37
55	62	41
60	84	49
65	114	66
70	170	104
75	281	182
80	493	333
85	876	621
90	1,497	1,172
95	2,288	1,913
100	3,217	2,853

The PubG-2010 Healthy Annuitant Head-Count Weighted Mortality Table for males and females, respectively, projected using the MP-2020 model, with an ultimate rate of 0.85% for ages 20-80 grading down to an ultimate rate of 0% for ages 114-120 and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.

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

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

b. Disabled Mortality

Annual Deaths Per 10,000 Members Mortality Projected to 2021		
Age	Male	Female
45	114	96
50	160	140
55	217	180
60	284	216
65	344	236
70	405	282
75	518	394
80	738	602

The PubG-2010 Disabled Head-Count Weighted Annuitant Mortality Table for males and females, respectively, projected using the MP-2020 model, with an ultimate rate of 0.85% for ages 20-80 grading down to an ultimate rate of 0% for ages 114-120 and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are projected through the valuation date.

c. Active Separation From Service Due to Death

Annual Deaths Per 10,000 Members Mortality Projected to 2021		
Age	Male	Female
20	4	2
25	4	2
30	6	3
35	9	4
40	10	5
45	12	6

The PubG-2010 Employee Head-Count Weighted Mortality Table for males and females, respectively, projected using the MP-2020 model, with an ultimate rate of 0.85% for ages 20-80 grading down to an ultimate rate of 0% for ages 114-120 and convergence to the ultimate rate in the year 2027. The valuation uses fully generational projection of mortality improvements. Sample rates shown are those projected through the valuation date.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

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

Annual Termination Rates Per 1,000 Members - County	
Service	Termination
0	162
5	71
10	35
15	15
20	6
25	2
30	0

Annual Termination Rates Per 1,000 Members - Schools	
Service	Termination
0	281
5	68
10	36
15	18
20	9
25	7
30	0

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 drop to zero three years prior to approaching Rule of 80 (or Rule of 85 for Plans C, D, and E) retirement.

e. Disability

Annual Disabilities Per 10,000 Members*		
Age	Male	Female
20	1	1
25	1	1
30	1	1
35	1	1
40	1	1
45	4	3
50	7	6
55	11	9
60	13	11

* 20% of disabilities are assumed to be service connected. Of these, 31% are assumed to receive Workers' Compensation benefits.

No disability is assumed to occur once members reach eligibility for retirement.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

f. Retirement/DROP

Annual Retirements/DROPs Per 1,000 Eligible Members	
Age	Normal
50	300
51	250
52	250
53	250
54	250
55	250
56	250
57	250
58	250
59	250
60	250
61	275
62	300
63	350
64	275
65	300
66	275
67	250
68	200
69	200
70	250
71	250
72	250
73	250
74	250
75	1,000

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

g. Deferred Retirement Option Program (DROP)

Retirees are assumed to enter DROP instead of immediate retirement in accordance with the rates below. DROP participants are assumed to remain in DROP for three years and receive interest at 5% per annum on their DROP deferrals.

Annual DROP entrances per 100 Eligible Members (Male and Female)	
Age	DROP
50	70
55	68
60	63
65	30
70	30
75	30

h. Merit/Seniority Salary Increase (in addition to General Wage Increases)

Merit/Seniority Salary Increases - County	
Service	Increase
0	2.30%
5	2.45
10	1.85
15	1.55
20	1.45
25	1.20
30	0.90

Merit/Seniority Salary Increases - Schools	
Service	Increase
0	7.50%
5	3.25
10	2.50
15	2.00
20	1.50
25	0.50
30	0.00

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

i. 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.

j. Sick Leave Credit

Unused sick leave balances as reported for each active member are used as of the valuation date. Future sick leave accruals are assumed to accrue at 100% of each participant's annual average but are capped at 124 hours per year for members hired on or after January 1, 2013.

2. Economic Assumptions

a. Rate of Investment Return:	6.75%
b. Rate of General Wage Increase:	2.25%*
c. Rate of Increase in Cost of Living:	2.10%**
d. Rate of Increase in Total Payroll (for Amortization):	2.25%
e. Administrative Expenses as a Percentage of Payroll:	0.30%

* 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 2021. The results of this study were presented in a report dated October 2021 and are incorporated into this report by reference.

4. Changes Since Last Valuation

All of the assumptions were reviewed as part of the experience study performed in early 2021. The assumptions that were changed since the last valuation include healthy and disabled mortality rates, termination, disability, retirement and DROP rates, salary increases, sick leave credit, investment return (decreased by 0.50%), general wage increase (decreased by 0.50%), cost-of-living adjustments, total payroll increase, and administrative expenses as a percentage of payroll.

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

B. Actuarial Methods

1. Funding Method

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

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

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

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

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 a 15-year level percent of pay amortization of the UAL that existed on June 30, 2018 other than prior unamortized amendment and assumption change bases. In the future, additional amortization bases will be created each year. Finally, the rate includes an 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.

In 2021, there was an additional recognition of \$236 million of the remaining balance of past investment gains.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

APPENDIX B - ACTUARIAL ASSUMPTIONS AND METHODS

3. Valuation Timing

All participant data is collected as of the December 31 prior to the valuation date. Initial valuation runs are performed as of December 31, and the resulting liabilities are then adjusted for six months to the June 30 valuation date. The adjustment takes into account the actual July 1 cost-of-living increase and any other changes that are known to have occurred in that six-month period.

4. Changes Since Last Valuation and Rationale for Changes

There was an additional recognition of \$236 million of the past investment gains.

5. Rationale for Change in Asset Smoothing Method

This one-time adjustment to the asset smoothing method was made to recognize both the fact that market returns on investments were extraordinarily high this year and the desire to make changes to the actuarial assumptions while maintaining a level contribution rate. The County has established a policy of not allowing the contribution rate to go down until the System has paid off its unfunded actuarial liability. Absent recognizing these additional gains that rate would have increased with this valuation report and not recognizes the anticipated reductions that would occur in future valuations as the remaining investment gains flow through the asset smoothing method.

6. Statement of Disclosures Regarding Models Used

Cheiron utilizes and relies on the actuarial software program known as ProVal for the intended purpose of calculating liabilities and projected benefit payments. ProVal is a produce of Winklevoss Technologies.

The projected expected results of future valuations in this report were developed using P-scan, our proprietary tool for the intended purpose of developing projections.

As part of the review process for this actuarial valuation, we have performed a number of tests to verify that the results are reasonable and appropriate. We are not aware of any material inconsistencies, unreasonable output resulting from the aggregation of assumptions, material limitations or known weaknesses that would affect this report.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

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 and prior to July 1, 2019 may elect to join Plan C or Plan D. Members hired on or after July 1, 2019 will join Plan E.

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, D, and E: 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 (\$142,800 in 2021).

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 JUNE 30, 2021

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%.

Plan E Benefits: 2% of average final compensation multiplied by credited service.

Plans A, B, C, and D: 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 reaches his/her SSRA (age 65, 66, or 67).

Plan E: Early Age Option of 0.5% of average final compensation up to the Social Security breakpoint times credited service. This benefit is payable from retirement age until the participant reaches his/her SSRA (age 65, 66, or 67). After SSRA, the base benefit would be reduced to account for the accelerated pre-SSRA benefit.

8. Early Retirement

Eligibility

- (i) Age 50 with 25 years of service, or
- (ii) 10 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 JUNE 30, 2021

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-connected benefit.

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021

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 100% of Virginia Workers' Compensation benefit

11. Ordinary Disability

Eligibility

Five years of credited service

Benefit

Plan A, B, C, and D: 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%.

Plan E: 2% of average final compensation times years of credited service; maximum is 60% of average final compensation; minimum is \$300 per year.

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

FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021

APPENDIX C - SUMMARY OF PLAN PROVISIONS

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

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.

**FAIRFAX COUNTY EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION AS OF JUNE 30, 2021**

APPENDIX C - SUMMARY OF PLAN PROVISIONS

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