



Actuarial Valuation Report

Educational Employees' Supplementary Retirement System of
Fairfax County

For the Fiscal Year Ending June 30, 2019

Based on a June 30, 2019 Measurement Date

Introduction

This report documents the results of the actuarial valuation for the fiscal year ending June 30, 2019 for the Educational Employees' Supplementary Retirement System of Fairfax County ("ERFC"). The plan is a single-employer plan and does not issue a separate financial statement. As a result, all reporting requirements are included in the employer's financial statement. These results are based on a Measurement Date of June 30, 2019. The information provided in this report is intended strictly for documenting information relating to ERFC and plan disclosure and reporting requirements.

Determinations for purposes other than the financial accounting requirements may be significantly different from the results in this report. Thus, the use of this report for purposes other than those expressed here may not be appropriate.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board. In addition, the valuation results are based on our understanding of the financial accounting and reporting requirements under U.S. Generally Accepted Accounting Principles as set forth in Government Accounting Standards Board Statement 68 (GASB 68) including any guidance or interpretations provided by ERFC and/or its audit partners prior to the issuance of this report. The information in this report is not intended to supersede or supplant the advice and interpretations of ERFC's auditors. Additional disclosures have been included as per GASB 67 requirements.

Future actuarial measurements may differ significantly from the current measurements presented in this report due (but not limited to) to such factors as the following:

- Plan experience differing from that anticipated by the economic or demographic assumptions;
- Changes in actuarial methods or in economic or demographic assumptions;
- Increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and
- Changes in plan provisions or applicable law.

Due to the limited scope of our assignment, we did not perform an analysis of the potential range of such future measurements.

Funded status measurements shown in this report are determined based on various measures of plan assets and liabilities. For entity and plan disclosure and reporting purposes, funded status is determined using plan assets measured at market value. Plan liabilities are measured based on the interest rates and other assumptions summarized in the Actuarial Assumptions and Methods section of this report.

These funded status measurements may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations, and funded status measurements for ERFC and plan disclosure and reporting purposes may not be appropriate for assessing the need for or the amount of future contributions.

In conducting the valuation, we have relied on personnel, plan design, and asset information supplied by ERFC as of the valuation date. While we cannot verify the accuracy of all the information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy or completeness of the information and believe that it has produced appropriate results.

The actuarial assumptions and methods used in this valuation are described in the Actuarial Assumptions and Methods section of this report. ERFC selected the economic and demographic assumptions and prescribed them for use for purposes of compliance with GASB 68. Aon provided guidance with respect to these assumptions, and it is our belief that the assumptions represent reasonable expectations of anticipated plan experience.

The undersigned are familiar with the near-term and long-term aspects of pension valuations and collectively meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. The information provided in this report is dependent upon various factors as documented throughout this report, which may be subject to change. Each section of this report is considered to be an integral part of the actuarial opinions.

To our knowledge, no colleague of Aon providing services to ERFC has any material direct or indirect financial interest in ERFC. Thus, we believe there is no relationship existing that might affect our capacity to prepare and certify this actuarial report for ERFC.



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Accounting Requirements

Development of GASB 68 Net Pension Expense

Calculation Details

The following table illustrates the Net Pension Liability under GASB 68.

	Fiscal Year Ending 06/30/2018	Fiscal Year Ending 06/30/2019
(1) Pension Liability	\$ 3,238,436,290	\$ 3,406,340,888
(2) Plan Fiduciary Net Position	<u>2,446,279,897</u>	<u>2,521,441,472</u>
(3) Net Pension Liability	\$ 792,156,393	\$ 884,899,416
(4) Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	75.54%	74.02%
(5) Deferred Outflow of Resources for Contributions Made After Measurement Date	\$ 0	\$ 0

Expense

The following table illustrates the pension expense under GASB 68.

	Fiscal Year Ending 06/30/2018	Fiscal Year Ending 06/30/2019
(1) Service Cost	\$ 88,599,697	\$ 90,633,074
(2) Interest Cost	221,106,804	231,477,042
(3) Expected Investment Return	(165,387,582)	(175,812,278)
(4) Employee Contributions	(44,169,100)	(46,645,396)
(5) Administrative Expense	4,300,927	4,262,159
(6) Plan Changes	0	0
(7) Amortization of Unrecognized		
(a) Liability (Gain)/Loss	(2,387,625)	1,708,604
(b) Asset (Gain)/Loss	5,072,238	48,689,414
(c) Assumption Change (Gain)/Loss	<u>10,447,431</u>	<u>10,447,431</u>
(8) Total Expense	\$ 117,582,790	\$ 164,760,050

Shown below are details regarding the calculation of Service and Interest Cost components of the Expense.

	Fiscal Year Ending 06/30/2018	Fiscal Year Ending 06/30/2019
(1) Development of Service Cost:		
(a) Normal Cost at Beginning of Measurement Period	\$ 88,599,697	\$ 90,633,074
(2) Development of Interest Cost:		
(a) Total Pension Liability at Beginning of Measurement Period	\$ 3,094,309,317	\$ 3,238,436,290
(b) Normal Cost at Beginning of Measurement Period	88,599,697	90,633,074
(c) Actual Benefit Payments	(177,720,296)	(181,932,073)
(d) Discount Rate, Beginning of Measurement Period	7.25%	7.25%
(e) Interest Cost	\$ 221,106,804	\$ 231,477,042
(3) Development of Expected Investment Return:		
(a) Plan Fiduciary Net Position at Beginning of Measurement Period	\$ 2,304,281,654	\$ 2,446,279,897
(b) Actual Contributions—Employer	91,704,877	96,982,911
(c) Actual Contributions—Employee	44,169,100	46,645,396
(d) Actual Benefit Payments	(177,720,296)	(181,932,073)
(e) Administrative Expenses	(4,300,927)	(4,262,159)
(f) Other	0	0
(g) Expected Return on Assets, Beginning of Measurement Period	7.25%	7.25%
(h) Expected Return	\$ 165,387,582	\$ 175,812,278

Reconciliation of Net Pension Liability

Shown below are details regarding the Total Pension Liability, Plan Fiduciary Net Position, and Net Pension Liability for the Measurement Period from June 30, 2018 to June 30, 2019:

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (c) = (a) – (b)
Balance Recognized at 06/30/2018 (Based on 06/30/2018 Measurement Date)	\$ 3,238,436,290	\$ 2,446,279,897	\$ 792,156,393
Changes Recognized for the Fiscal Year:			
Service Cost	\$ 90,633,074	N/A	\$ 90,633,074
Interest on the Total Pension Liability	231,477,042	N/A	231,477,042
Changes of Benefit Terms	0	N/A	0
Differences Between Expected and Actual Experience	27,726,555	N/A	27,726,555
Changes of Assumptions	0	N/A	0
Benefit Payments	(181,932,073)	(181,932,073)	0
Contributions From the Employer	N/A	96,982,911	(96,982,911)
Contributions From the Employee	N/A	46,645,396	(46,645,396)
Net Investment Income	N/A	117,727,500	(117,727,500)
Administrative Expense	N/A	(4,262,159)	4,262,159
Net Changes	\$ 167,904,598	\$ 75,161,575	\$ 92,743,023
Balance Recognized at 06/30/2019 (Based on 06/30/2019 Measurement Date)	\$ 3,406,340,888	\$ 2,521,441,472	\$ 884,899,416

Liability (Gain)/Loss

The following table illustrates the liability gain/loss under GASB 68.

	Fiscal Year Ending 06/30/2018	Fiscal Year Ending 06/30/2019
(1) Pension Liability at Beginning of Measurement Period	\$ 3,094,309,317	\$ 3,238,436,290
(2) Service Cost	88,599,697	90,633,074
(3) Interest on the Total Pension Liability	221,106,804	231,477,042
(4) Changes of Benefit Terms	0	0
(5) Changes of Assumptions	0	0
(6) Benefit Payments	<u>(177,720,296)</u>	<u>(181,932,073)</u>
(7) Expected Pension Liability at End of Measurement Period	\$ 3,226,295,522	\$ 3,378,614,333
(8) Actual Pension Liability at End of Measurement Period	<u>3,238,436,290</u>	<u>3,406,340,888</u>
(9) Pension Liability (Gain)/Loss	\$ 12,140,768	\$ 27,276,555
(10) Average Future Working Life Expectancy	6.5355	6.7688
(11) Total Pension Liability (Gain)/Loss Amortization	\$ 1,857,665	\$ 4,096,229
(12) Pension Overall Liability (Gain)/Loss Amortization	1,857,665	4,096,229
(13) Pension Assumption Change (Gain)/Loss Amortization	0	0

Liability (Gain)/Loss Impact on Expense

The following table details the allocation of the FY2019 liability gain/loss in the expense calculation under GASB 75.

	Fiscal Year Ending 6/30/2018	Fiscal Year Ending 6/30/2019
(1) Total OPEB Liability (Gain)/Loss	\$12,140,768	\$ 27,276,555
(2) Recognized in Current Year Expense	<u>1,857,665</u>	<u>4,096,229</u>
(3) Amount to be recognized in Future Years as Deferred Outflow (1. – 2.)	\$10,283,103	\$ 23,630,326

Assumptions Change Impact on Expense

The following table details the allocation of the FY2019 liability assumption change in the expense calculation under GASB 75.

	Fiscal Year Ending 6/30/2018	Fiscal Year Ending 6/30/2019
(1) Total OPEB Liability Assumption Change (Gain)/Loss	\$ 0	\$ 0
(2) Recognized in Current Year Expense	<u>0</u>	<u>0</u>
(3) Amount to be recognized in Future Years as Deferred Inflow (1. – 2.)	\$ 0	\$ 0

Asset (Gain)/Loss

The following table illustrates the asset gain/loss under GASB 68.

	Fiscal Year Ending 06/30/2018	Fiscal Year Ending 06/30/2019
(1) Pension Asset at Beginning of Measurement Period	\$ 2,304,281,654	\$ 2,446,279,897
(2) Contributions—Employer	91,704,877	96,982,911
(3) Contributions—Employee	44,169,100	46,645,396
(4) Expected Investment Income	165,387,582	175,812,278
(5) Benefit Payments	(177,720,296)	(181,932,073)
(6) Administrative Expense	(4,300,927)	(4,262,159)
(7) Other	<u>0</u>	<u>0</u>
(8) Expected Pension Asset at End of Measurement Period	\$ 2,423,521,990	\$ 2,579,526,250
(9) Actual Pension Asset at End of Measurement Period	<u>2,446,279,897</u>	<u>2,521,441,472</u>
(10) Pension Asset (Gain)/Loss	\$ (22,757,907)	\$ 58,084,778
(11) Amortization Factor	5	5
(12) Pension Asset (Gain)/Loss Amortization	\$ (4,551,581)	\$ 11,616,956

Asset (Gain)/Loss Impact on Expense

The following table details the allocation of the FY2019 asset gain/loss in the expense calculation under GASB 75.

	Fiscal Year Ending 6/30/2018	Fiscal Year Ending 6/30/2019
(1) Total OPEB Asset (Gain)/Loss	\$ (22,757,907)	\$ 58,084,778
(2) Recognized in Current Year Expense	<u>(4,551,581)</u>	<u>11,616,956</u>
(3) Amount to be recognized in Future Years as Deferred Inflows (1. – 2.)	\$ (18,206,326)	\$ 46,467,822

Deferred Outflows/Inflows

The following table illustrates the Deferred Inflows and Outflows as of June 30, 2019 under GASB 68.

	Deferred Outflows	Deferred Inflows
(1) Difference Between Actual and Expected Experience	\$ 42,939,388	\$ (9,676,371)
(2) Net Difference Between Expected and Actual Earnings on Pension Plan Investments	\$ 81,894,305	\$ (53,714,587)
(3) Assumption Changes	<u>30,811,546</u>	<u>0</u>
(4) Sub Total	\$ 155,645,239	\$ (63,390,958)
(5) Contributions Made in Fiscal Year Ending 2018 After Measurement Date	<u>0</u>	<u>0</u>
(6) Total	\$ 155,645,239	\$ (63,390,958)

Amortization of Deferred Inflows/Outflows

The table below lists the amortization bases included in the deferred inflows/outflows as of June 30, 2019.

Date Established	Type of Base	Period		Balance		Annual Payment
		Original	Remaining	Original	Remaining	
06/30/2013	Liability (Gain)/Loss	6.5151	0.5151	\$ (19,051,630)	\$ (1,506,268)	\$ (2,924,227) ¹
06/30/2014	Liability (Gain)/Loss	6.4496	1.4496	(17,051,192)	(3,832,392)	\$ (2,643,760)
06/30/2015	Liability (Gain)/Loss	6.5997	2.5997	(11,011,883)	(4,337,711)	\$ (1,668,543)
06/30/2015	Asset (Gain)/Loss (Net)	5.0000	1.0000	177,132,419	35,426,483	\$ 35,426,484 ²
06/30/2015	Assumptions	6.5997	2.5997	45,752,095	18,022,291	\$ 6,932,451
06/30/2016	Liability (Gain)/Loss	6.6385	3.6385	19,857,344	10,883,624	\$ 2,991,240
06/30/2016	Asset (Gain)/Loss (Net)	5.0000	2.0000	(100,149,602)	(40,059,842)	\$ (20,029,920)
06/30/2016	Assumptions	6.6385	3.6385	23,334,195	12,789,255	\$ 3,514,980
06/30/2017	Liability (Gain)/Loss	6.5355	4.5355	12,140,768	8,425,438	\$ 1,857,665
06/30/2017	Asset (Gain)/Loss (Net)	5.0000	3.0000	(22,757,907)	(13,654,745)	\$ (4,551,581)
06/30/2017	Liability (Gain)/Loss	6.7688	5.7688	27,726,555	23,630,326	\$ 4,096,229
06/30/2017	Asset (Gain)/Loss (Net)	5.0000	4.0000	<u>58,084,778</u>	<u>46,467,822</u>	\$ 11,616,956
	Total Charges			\$ 194,005,940	\$ 92,254,281	

Amounts Recognized in the deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in the pension expense as follows:

Year End December 31:

2020	\$ 36,035,932
2021	\$ 3,570,843
2022	\$ 22,682,251
2023	\$ 21,725,067
2024	\$ 5,091,007
Total Thereafter	\$ 2,127,662

¹ In the final year of amortization, the amount recognized is set equal to the outstanding amount of the base at the beginning of that year.

² In the final year of amortization, the amount recognized is set equal to the outstanding amount of the base at the beginning of that year.

Statement of Fiduciary Net Position

	Fiscal Year Ending June 30, 2018	Fiscal Year Ending June 30, 2019
Assets		
Cash Equivalents	\$ 197,335,330	\$ 209,727,176
Receivables		
Contributions	\$ 0	\$ 0
Investment Income	3,128,184	3,809,682
Accounts Receivable – Sale of Investments	2,844,020	8,109,883
Other receivables	0	0
Total Receivables	<u>\$ 5,972,204</u>	<u>\$ 11,919,565</u>
Investments		
Equities	\$ 710,610,287	\$ 670,619,312
Bonds and Mortgage Backed Securities	87,634,696	83,451,025
U.S. Government Obligations	8,645,113	20,877,635
Preferred Securities	4,505,494	5,189,750
Real Estate	200,098,771	218,025,785
Global Asset Allocation	240,779,487	247,355,510
Better Beta	121,560,075	130,756,594
Hedge Fund of Funds	118,564,588	117,526,120
Private Equity	88,913,409	115,300,063
Commingled Fixed Income Funds	558,234,827	575,050,619
Commingled Equity Funds	243,116,043	267,951,298
Total Investments	<u>\$ 2,382,662,760</u>	<u>\$ 2,452,103,711</u>
Prepaid Expenses	\$ 0	\$ 4,772
Other	\$ 39,369	\$ 38,238
Total Assets	<u>\$ 2,586,009,693</u>	<u>\$ 2,673,793,462</u>
Liabilities		
Payables		
Accounts Payable & Securities Purchased	\$ 5,921,045	\$ 8,702,006
Securities lending Collateral	133,787,644	143,637,529
Other	21,107	12,455
Total Liabilities	<u>\$ 139,729,796</u>	<u>\$ 152,351,990</u>
Net Position Restricted for Pensions	\$ 2,446,279,897	\$ 2,521,441,472

Statement of Change in Fiduciary Net Position

	Fiscal Year Ending June 30, 2018	Fiscal Year Ending June 30, 2019
Additions		
Contributions:		
Employer	\$ 91,704,877	\$ 96,982,911
Employee	44,169,100	46,645,396
	<hr/>	<hr/>
Total Contributions	\$ 135,873,977	\$ 143,628,307
Investment Income:		
Net Increase in Fair value of Investments	\$ 169,848,297	\$ 96,217,852
Interest and Dividends	29,445,533	30,432,169
Real Estate	2,498,060	4,227,412
Less Investment Expense	(14,366,955)	(13,768,175)
	<hr/>	<hr/>
Net Investment Income	\$ 187,424,935	\$ 117,109,258
Other	720,554	618,242
	<hr/>	<hr/>
Total Additions	\$ 324,019,466	\$ 261,355,807
Deductions		
Benefit Payments/Refunds	\$ 177,720,296	\$ 181,932,073
Administrative Expenses	4,300,927	4,262,159
Other	0	0
	<hr/>	<hr/>
Total Deductions	\$ 182,021,223	\$ 186,194,232
Net Increase in Net Position	\$ 141,998,243	\$ 75,161,575
Net Position restricted for Postemployment benefits Other than Pensions		
Beginning of year	\$ 2,304,281,654	\$ 2,446,279,897
	<hr/>	<hr/>
End of Year	\$ 2,446,279,897	\$ 2,521,441,472

Plan Fiduciary Net Position Projection

GASB Statement Number 67 includes specific instructions on how to determine the discount rate that should be used for the purposes of measuring the Total Pension Liability, by factoring in the ability of the plans assets to pay benefit obligations in future years. This is done by projecting employer contributions, employee contributions, benefit payments, expenses and investment return into the future. The Fiduciary Net Position (or fund assets) determined each year is then compared with the benefit obligations that are expected to be paid in those years. If the fund has sufficient assets to pay the projected benefit payments in a future year, the assumed expected return on plan assets is used. In years where assets are not projected to be sufficient to meet benefit payments, the use of a municipal bond rate is required, as described in the following paragraph.

The Single Discount Rate (SDR) is equivalent to applying these two rates to the benefits that are projected to be paid during the different time periods. The SDR reflects (1) the long-term expected rate of return on pension plan investments (during the period in which the fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the contributions for use with the long-term expected rate of return are not met).

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.25%; the municipal bond rate is 3.50%; and the resulting SDR is 7.25%. We have relied on the information provided by ERFC's investment advisors, SegalMarco Advisors, for purposes of determining the expected rate of return on pension plan investments. We believe the analysis reasonably supports the use of a 7.25% expected rate of return.

The tables in this section provide background for the development of the SDR.

The Projection of Contributions table shows the development of expected contributions in future years. Normal cost contributions for future hires are not included (nor are their liabilities).

The Projection of Plan Fiduciary Net Position table shows the development of expected asset levels in future years.

The Present Values of Projected Benefit Payments table shows the development of the SDR. It breaks down the benefit payments into present values for funded and unfunded portions and shows the equivalent total at the SDR.

Plan Fiduciary Net Position Projection

Projection of Contributions¹

Fiscal Year	Payroll for Current Employees	Contributions from Current Employees	Service Cost and Expense Contributions	UAL Contributions	Total Contributions
2019					
2020	1,604,620,331	48,138,610	47,015,376	56,322,174	151,476,160
2021	1,545,459,016	46,363,770	45,281,949	58,109,259	149,754,978
2022	1,493,446,059	44,803,382	43,757,970	63,858,806	152,420,158
2023	1,446,831,964	43,404,959	42,392,177	69,330,352	155,127,488
2024	1,402,810,523	42,084,316	41,102,348	74,458,513	157,645,177
2025	1,359,205,346	40,776,160	39,824,717	79,156,671	159,757,548
2026	1,315,132,619	39,453,979	38,533,386	83,375,238	161,362,603
2027	1,270,617,484	38,118,525	37,229,092	87,108,700	162,456,317
2028	1,227,564,755	36,826,943	35,967,647	90,490,624	163,285,214
2029	1,187,868,531	35,636,056	34,804,548	93,693,043	164,133,647
2030	1,151,365,600	34,540,968	33,735,012	96,754,193	165,030,173
2031	1,117,254,575	33,517,637	32,735,559	99,652,022	165,905,218
2032	1,084,977,855	32,549,336	31,789,851	102,370,941	166,710,128
2033	1,052,425,675	31,572,770	30,836,072	104,729,394	167,138,236
2034	1,017,914,240	30,537,427	29,824,887	106,546,870	166,909,184
2035	982,263,651	29,467,910	28,780,325	107,883,118	166,131,353
2036	946,238,373	28,387,151	27,724,784	108,808,411	164,920,346
2037	909,666,042	27,289,981	26,653,215	109,296,241	163,239,437
2038	872,799,591	26,183,988	25,573,028	109,369,834	161,126,850
2039	835,679,275	25,070,378	24,485,403	109,029,892	158,585,673
2040	798,556,925	23,956,708	23,397,718	108,306,639	155,661,065
2041	760,990,670	22,829,720	22,297,027	0	45,126,747
2042	720,905,519	21,627,166	21,122,532	0	42,749,698
2043	674,598,198	20,237,946	19,765,727	0	40,003,673
2044	622,307,646	18,669,229	18,233,614	0	36,902,843
2045	566,538,329	16,996,150	16,599,573	0	33,595,723
2046	509,194,089	15,275,823	14,919,387	0	30,195,210
2047	452,261,812	13,567,854	13,251,271	0	26,819,125
2048	395,516,965	11,865,509	11,588,647	0	23,454,156
2049	342,295,615	10,268,868	10,029,262	0	20,298,130
2050	296,112,529	8,883,376	8,676,097	0	17,559,473
2051	254,340,135	7,630,204	7,452,166	0	15,082,370
2052	211,325,895	6,339,777	6,191,849	0	12,531,626
2053	165,595,585	4,967,868	4,851,951	0	9,819,819
2054	122,435,709	3,673,071	3,587,366	0	7,260,437
2055	85,942,212	2,578,266	2,518,107	0	5,096,373
2056	55,982,447	1,679,473	1,640,286	0	3,319,759
2057	31,464,100	943,923	921,898	0	1,865,821
2058	13,319,229	399,577	390,253	0	789,830
2059	4,913,801	147,414	143,974	0	291,388
2060	2,947,165	88,415	86,352	0	174,767
2061	1,940,890	58,227	56,868	0	115,095
2062	1,281,188	38,436	37,539	0	75,975
2063	841,734	25,252	24,663	0	49,915
2064	550,625	16,519	16,133	0	32,652
2065	358,222	10,747	10,496	0	21,243
2066	230,480	6,914	6,753	0	13,667

¹ The projections in this report are strictly for the purposes of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Educational Employees' Supplementary Retirement System of Fairfax County
Proprietary & Confidential

Fiscal Year	Payroll for Current Employees	Contributions from Current Employees	Service Cost and Expense Contributions	UAL Contributions	Total Contributions
2067	145,653	4,370	4,268	0	8,638
2068	89,046	2,671	2,609	0	5,280
2069	51,517	1,546	1,509	0	3,055
2070	26,985	810	791	0	1,601
2071	11,261	338	330	0	668
2072	3,156	95	92	0	187
2073	515	15	15	0	30
2074	120	4	4	0	8
2075	46	1	1	0	2
2076	12	0	0	0	0
2077	0	0	0	0	0

Plan Fiduciary Net Position Projection

Projection of Plan Fiduciary Net Position Ending June 30, 2119¹

Fiscal Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.25%	Projected Ending Plan Net Position
2019						
2020	2,521,441,472	151,476,160	185,423,911	4,393,107	181,535,040	2,664,635,654
2021	2,664,635,654	149,754,978	190,485,612	4,642,595	191,665,064	2,810,927,489
2022	2,810,927,489	152,420,158	195,874,741	4,897,479	202,166,819	2,964,742,246
2023	2,964,742,246	155,127,488	203,539,456	5,165,470	213,134,000	3,124,298,808
2024	3,124,298,808	157,645,177	213,739,122	5,443,466	224,419,947	3,287,181,344
2025	3,287,181,344	159,757,548	224,188,678	5,727,256	235,923,228	3,452,946,186
2026	3,452,946,186	161,362,603	235,021,728	6,016,068	247,603,249	3,620,874,242
2027	3,620,874,242	162,456,317	247,146,550	6,308,649	259,375,425	3,789,250,784
2028	3,789,250,784	163,285,214	259,275,855	6,602,012	271,170,329	3,957,828,460
2029	3,957,828,460	164,133,647	270,435,384	6,895,725	283,015,050	4,127,646,049
2030	4,127,646,049	165,030,173	280,233,864	7,191,598	294,999,806	4,300,250,566
2031	4,300,250,566	165,905,218	289,164,274	7,492,327	307,216,580	4,476,715,763
2032	4,476,715,763	166,710,128	297,749,329	7,799,782	319,722,772	4,657,599,552
2033	4,657,599,552	167,138,236	306,172,309	8,114,936	332,541,150	4,842,991,692
2034	4,842,991,692	166,909,184	315,006,314	8,437,944	345,647,643	5,032,104,261
2035	5,032,104,261	166,131,353	322,628,451	8,767,435	359,046,905	5,225,886,633
2036	5,225,886,633	164,920,346	328,626,404	9,105,062	372,826,581	5,425,902,094
2037	5,425,902,094	163,239,437	334,193,024	9,453,549	387,056,098	5,632,551,056
2038	5,632,551,056	161,126,850	339,519,776	9,813,594	401,759,027	5,846,103,562
2039	5,846,103,562	158,585,673	345,261,345	10,185,666	416,931,724	6,066,173,948
2040	6,066,173,948	155,661,065	352,207,907	10,569,095	432,519,747	6,291,577,758
2041	6,291,577,758	45,126,747	360,687,336	10,961,816	444,538,665	6,409,594,018
2042	6,409,594,018	42,749,698	371,494,499	11,167,436	452,616,448	6,522,298,229
2043	6,522,298,229	40,003,673	384,174,422	11,363,800	460,229,361	6,626,993,041
2044	6,626,993,041	36,902,843	398,524,599	11,546,210	467,189,740	6,721,014,815
2045	6,721,014,815	33,595,723	414,450,047	11,710,024	473,313,405	6,801,763,872
2046	6,801,763,872	30,195,210	431,266,656	11,850,713	478,440,496	6,867,282,209
2047	6,867,282,209	26,819,125	449,527,437	11,964,866	482,413,755	6,915,022,786
2048	6,915,022,786	23,454,156	468,092,287	12,048,044	485,088,803	6,943,425,414
2049	6,943,425,414	20,298,130	485,260,784	12,097,530	486,420,356	6,952,785,586
2050	6,952,785,586	17,559,473	500,693,313	12,113,838	486,449,470	6,943,987,378
2051	6,943,987,378	15,082,370	515,494,109	12,098,509	485,195,209	6,916,672,339
2052	6,916,672,339	12,531,626	530,443,533	12,050,918	482,591,664	6,869,301,178
2053	6,869,301,178	9,819,819	544,671,157	11,968,383	478,555,164	6,801,036,622
2054	6,801,036,622	7,260,437	556,810,527	11,849,446	473,085,089	6,712,722,175
2055	6,712,722,175	5,096,373	566,053,644	11,695,576	466,280,124	6,606,349,452
2056	6,606,349,452	3,319,759	573,103,761	11,510,243	458,259,205	6,483,314,413
2057	6,483,314,413	1,865,821	578,099,269	11,295,879	449,116,175	6,344,901,261
2058	6,344,901,261	789,830	579,185,624	11,054,721	439,012,115	6,194,462,861
2059	6,194,462,861	291,388	577,249,898	10,792,613	428,165,540	6,034,877,278
2060	6,034,877,278	174,767	574,367,197	10,514,567	416,703,930	5,866,874,211
2061	5,866,874,211	115,095	570,753,646	10,221,855	404,660,669	5,690,674,474
2062	5,690,674,474	75,975	566,379,426	9,914,862	392,051,495	5,506,507,656
2063	5,506,507,656	49,915	560,863,432	9,593,988	378,906,341	5,315,006,492
2064	5,315,006,492	32,652	554,008,915	9,260,336	365,277,892	5,117,047,786
2065	5,117,047,786	21,243	545,980,451	8,915,432	351,223,697	4,913,396,842
2066	4,913,396,842	13,667	536,920,563	8,560,611	336,794,041	4,704,723,376

¹ The projections in this report are strictly for the purposes of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Educational Employees' Supplementary Retirement System of Fairfax County
Proprietary & Confidential

Fiscal Year	Projected Beginning Plan Net Position	Projected Total Contributions	Projected Benefit Payments	Projected Administrative Expenses	Projected Investment Earnings at 7.25%	Projected Ending Plan Net Position
2067	4,704,723,376	8,638	526,871,830	8,197,040	322,035,874	4,491,699,018
2068	4,491,699,018	5,280	515,824,904	7,825,887	306,998,150	4,275,051,656
2069	4,275,051,656	3,055	503,722,697	7,448,423	291,735,608	4,055,619,200
2070	4,055,619,200	1,601	490,561,439	7,066,105	276,309,067	3,834,302,324
2071	3,834,302,324	668	476,386,452	6,680,505	260,782,146	3,612,018,182
2072	3,612,018,182	187	461,235,851	6,293,219	245,219,922	3,389,709,221
2073	3,389,709,221	30	445,124,444	5,905,890	229,690,132	3,168,369,049
2074	3,168,369,049	8	428,133,780	5,520,249	214,261,839	2,948,976,867
2075	2,948,976,867	2	410,302,249	5,138,002	199,004,603	2,732,541,221
2076	2,732,541,221	0	391,632,658	4,760,907	183,991,381	2,520,139,037
2077	2,520,139,037	0	372,325,638	4,390,838	169,293,037	2,312,715,598
2078	2,312,715,598	0	352,431,635	4,029,444	154,976,249	2,111,230,768
2079	2,111,230,768	0	331,992,152	3,678,397	141,109,069	1,916,669,289
2080	1,916,669,289	0	311,127,929	3,339,413	127,758,530	1,729,960,477
2081	1,729,960,477	0	289,975,626	3,014,110	114,987,083	1,551,957,824
2082	1,551,957,824	0	268,819,334	2,703,976	102,846,434	1,383,280,948
2083	1,383,280,948	0	247,760,503	2,410,090	91,377,853	1,224,488,208
2084	1,224,488,208	0	226,919,817	2,133,426	80,617,490	1,076,052,455
2085	1,076,052,455	0	206,468,183	1,874,806	70,593,509	938,302,975
2086	938,302,975	0	186,482,415	1,634,805	61,327,028	811,512,783
2087	811,512,783	0	167,145,382	1,413,899	52,831,310	695,784,812
2088	695,784,812	0	148,619,146	1,212,266	45,108,039	591,061,440
2089	591,061,440	0	130,995,906	1,029,806	38,149,758	497,185,486
2090	497,185,486	0	114,386,950	866,246	31,941,118	413,873,408
2091	413,873,408	0	98,886,876	721,092	26,458,209	340,723,649
2092	340,723,649	0	84,573,165	593,643	21,669,184	277,226,025
2093	277,226,025	0	71,504,938	483,011	17,534,981	222,773,057
2094	222,773,057	0	59,720,036	388,137	14,010,248	176,675,132
2095	176,675,132	0	49,231,624	307,821	11,044,562	138,180,250
2096	138,180,250	0	40,026,643	240,751	8,583,914	106,496,770
2097	106,496,770	0	32,067,066	185,549	6,572,314	80,816,469
2098	80,816,469	0	25,292,405	140,807	4,953,371	60,336,628
2099	60,336,628	0	19,621,937	105,125	3,671,811	44,281,377
2100	44,281,377	0	14,958,978	77,151	2,674,877	31,920,125
2101	31,920,125	0	11,195,759	55,614	1,913,483	22,582,235
2102	22,582,235	0	8,218,442	39,345	1,343,105	15,667,553
2103	15,667,553	0	5,912,276	27,298	924,355	10,652,334
2104	10,652,334	0	4,164,912	18,560	623,297	7,092,159
2105	7,092,159	0	2,870,772	12,357	411,497	4,620,526
2106	4,620,526	0	1,935,138	8,050	265,780	2,943,118
2107	2,943,118	0	1,275,452	5,128	167,767	1,830,306
2108	1,830,306	0	821,709	3,189	103,318	1,108,725
2109	1,108,725	0	516,899	1,932	61,904	651,798
2110	651,798	0	316,718	1,136	35,935	369,879
2111	369,879	0	188,365	644	20,085	200,955
2112	200,955	0	108,402	350	10,696	102,899
2113	102,899	0	59,807	179	5,324	48,236
2114	48,236	0	30,656	84	2,402	19,899
2115	19,899	0	13,837	35	949	6,975
2116	6,975	0	5,127	12	323	2,159
2117	2,159	0	1,415	4	106	846
2118	846	0	292	1	51	604
2119	604	0	76	1	41	568

Plan Fiduciary Net Position Projection

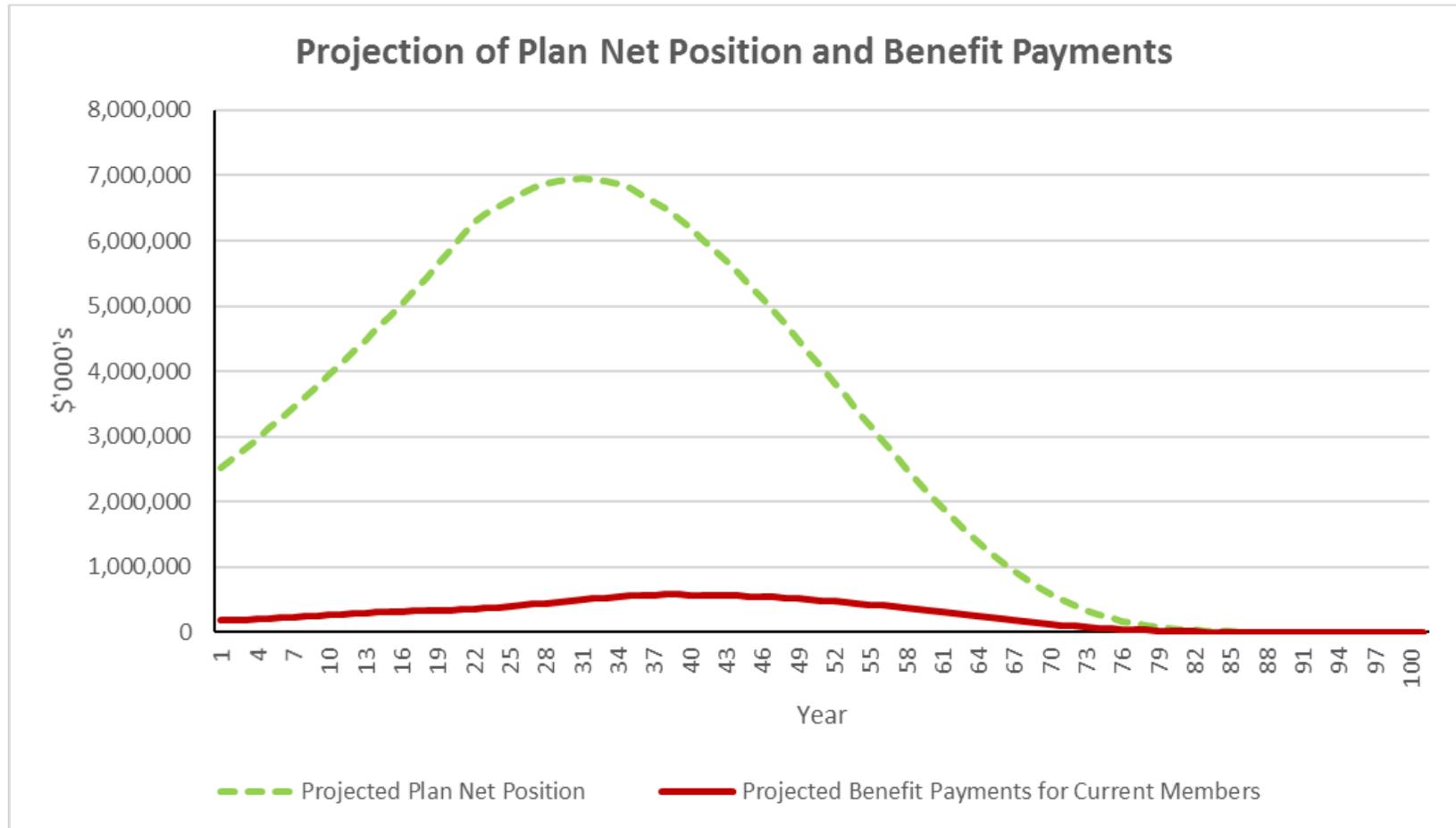
Present Values of Projected Benefits Ending June 30, 2119¹

Fiscal Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments Using Expected Return Rate	Present Value of Unfunded Benefit Payments Using Municipal Bond Rate	Present Value of Benefit Payments Using Single Discount Rate
2019							
2020	2,521,441,472	185,423,911	185,423,911	0	179,047,016	0	179,047,016
2021	2,664,635,654	190,485,612	190,485,612	0	171,500,830	0	171,500,830
2022	2,810,927,489	195,874,741	195,874,741	0	164,431,562	0	164,431,562
2023	2,964,742,246	203,539,456	203,539,456	0	159,315,509	0	159,315,509
2024	3,124,298,808	213,739,122	213,739,122	0	155,989,788	0	155,989,788
2025	3,287,181,344	224,188,678	224,188,678	0	152,555,729	0	152,555,729
2026	3,452,946,186	235,021,728	235,021,728	0	149,116,451	0	149,116,451
2027	3,620,874,242	247,146,550	247,146,550	0	146,209,232	0	146,209,232
2028	3,789,250,784	259,275,855	259,275,855	0	143,016,129	0	143,016,129
2029	3,957,828,460	270,435,384	270,435,384	0	139,087,838	0	139,087,838
2030	4,127,646,049	280,233,864	280,233,864	0	134,384,431	0	134,384,431
2031	4,300,250,566	289,164,274	289,164,274	0	129,293,197	0	129,293,197
2032	4,476,715,763	297,749,329	297,749,329	0	124,132,222	0	124,132,222
2033	4,657,599,552	306,172,309	306,172,309	0	119,015,177	0	119,015,177
2034	4,842,991,692	315,006,314	315,006,314	0	114,171,681	0	114,171,681
2035	5,032,104,261	322,628,451	322,628,451	0	109,029,620	0	109,029,620
2036	5,225,886,633	328,626,404	328,626,404	0	103,549,258	0	103,549,258
2037	5,425,902,094	334,193,024	334,193,024	0	98,184,880	0	98,184,880
2038	5,632,551,056	339,519,776	339,519,776	0	93,006,866	0	93,006,866
2039	5,846,103,562	345,261,345	345,261,345	0	88,186,192	0	88,186,192
2040	6,066,173,948	352,207,907	352,207,907	0	83,879,230	0	83,879,230
2041	6,291,577,758	360,687,336	360,687,336	0	80,091,961	0	80,091,961
2042	6,409,594,018	371,494,499	371,494,499	0	76,915,367	0	76,915,367
2043	6,522,298,229	384,174,422	384,174,422	0	74,163,783	0	74,163,783
2044	6,626,993,041	398,524,599	398,524,599	0	71,733,375	0	71,733,375
2045	6,721,014,815	414,450,047	414,450,047	0	69,557,029	0	69,557,029
2046	6,801,763,872	431,266,656	431,266,656	0	67,486,578	0	67,486,578
2047	6,867,282,209	449,527,437	449,527,437	0	65,588,913	0	65,588,913
2048	6,915,022,786	468,092,287	468,092,287	0	63,680,785	0	63,680,785
2049	6,943,425,414	485,260,784	485,260,784	0	61,553,793	0	61,553,793
2050	6,952,785,586	500,693,313	500,693,313	0	59,218,052	0	59,218,052
2051	6,943,987,378	515,494,109	515,494,109	0	56,847,154	0	56,847,154
2052	6,916,672,339	530,443,533	530,443,533	0	54,541,475	0	54,541,475
2053	6,869,301,178	544,671,157	544,671,157	0	52,218,549	0	52,218,549
2054	6,801,036,622	556,810,527	556,810,527	0	49,773,772	0	49,773,772
2055	6,712,722,175	566,053,644	566,053,644	0	47,179,508	0	47,179,508
2056	6,606,349,452	573,103,761	573,103,761	0	44,538,109	0	44,538,109
2057	6,483,314,413	578,099,269	578,099,269	0	41,889,352	0	41,889,352
2058	6,344,901,261	579,185,624	579,185,624	0	39,131,067	0	39,131,067
2059	6,194,462,861	577,249,898	577,249,898	0	36,363,902	0	36,363,902
2060	6,034,877,278	574,367,197	574,367,197	0	33,736,416	0	33,736,416
2061	5,866,874,211	570,753,646	570,753,646	0	31,257,966	0	31,257,966
2062	5,690,674,474	566,379,426	566,379,426	0	28,921,591	0	28,921,591
2063	5,506,507,656	560,863,432	560,863,432	0	26,703,890	0	26,703,890
2064	5,315,006,492	554,008,915	554,008,915	0	24,594,436	0	24,594,436
2065	5,117,047,786	545,980,451	545,980,451	0	22,599,556	0	22,599,556

¹ The projections in this report are strictly for the purposes of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Educational Employees' Supplementary Retirement System of Fairfax County
Proprietary & Confidential

Fiscal Year	Projected Beginning Plan Net Position	Projected Benefit Payments	Funded Portion of Benefit Payments	Unfunded Portion of Benefit Payments	Present Value of Funded Benefit Payments Using Expected Return Rate	Present Value of Unfunded Benefit Payments Using Municipal Bond Rate	Present Value of Benefit Payments Using Single Discount Rate
2066	4,913,396,842	536,920,563	536,920,563	0	20,722,185	0	20,722,185
2067	4,704,723,376	526,871,830	526,871,830	0	18,959,775	0	18,959,775
2068	4,491,699,018	515,824,904	515,824,904	0	17,307,455	0	17,307,455
2069	4,275,051,656	503,722,697	503,722,697	0	15,758,872	0	15,758,872
2070	4,055,619,200	490,561,439	490,561,439	0	14,309,673	0	14,309,673
2071	3,834,302,324	476,386,452	476,386,452	0	12,956,819	0	12,956,819
2072	3,612,018,182	461,235,851	461,235,851	0	11,696,738	0	11,696,738
2073	3,389,709,221	445,124,444	445,124,444	0	10,525,091	0	10,525,091
2074	3,168,369,049	428,133,780	428,133,780	0	9,439,013	0	9,439,013
2075	2,948,976,867	410,302,249	410,302,249	0	8,434,390	0	8,434,390
2076	2,732,541,221	391,632,658	391,632,658	0	7,506,395	0	7,506,395
2077	2,520,139,037	372,325,638	372,325,638	0	6,653,929	0	6,653,929
2078	2,312,715,598	352,431,635	352,431,635	0	5,872,632	0	5,872,632
2079	2,111,230,768	331,992,152	331,992,152	0	5,158,084	0	5,158,084
2080	1,916,669,289	311,127,929	311,127,929	0	4,507,153	0	4,507,153
2081	1,729,960,477	289,975,626	289,975,626	0	3,916,765	0	3,916,765
2082	1,551,957,824	268,819,334	268,819,334	0	3,385,550	0	3,385,550
2083	1,383,280,948	247,760,503	247,760,503	0	2,909,400	0	2,909,400
2084	1,224,488,208	226,919,817	226,919,817	0	2,484,543	0	2,484,543
2085	1,076,052,455	206,468,183	206,468,183	0	2,107,803	0	2,107,803
2086	938,302,975	186,482,415	186,482,415	0	1,775,078	0	1,775,078
2087	811,512,783	167,145,382	167,145,382	0	1,483,463	0	1,483,463
2088	695,784,812	148,619,146	148,619,146	0	1,229,871	0	1,229,871
2089	591,061,440	130,995,906	130,995,906	0	1,010,754	0	1,010,754
2090	497,185,486	114,386,950	114,386,950	0	822,937	0	822,937
2091	413,873,408	98,886,876	98,886,876	0	663,333	0	663,333
2092	340,723,649	84,573,165	84,573,165	0	528,967	0	528,967
2093	277,226,025	71,504,938	71,504,938	0	416,998	0	416,998
2094	222,773,057	59,720,036	59,720,036	0	324,729	0	324,729
2095	176,675,132	49,231,624	49,231,624	0	249,602	0	249,602
2096	138,180,250	40,026,643	40,026,643	0	189,215	0	189,215
2097	106,496,770	32,067,066	32,067,066	0	141,341	0	141,341
2098	80,816,469	25,292,405	25,292,405	0	103,945	0	103,945
2099	60,336,628	19,621,937	19,621,937	0	75,189	0	75,189
2100	44,281,377	14,958,978	14,958,978	0	53,446	0	53,446
2101	31,920,125	11,195,759	11,195,759	0	37,297	0	37,297
2102	22,582,235	8,218,442	8,218,442	0	25,528	0	25,528
2103	15,667,553	5,912,276	5,912,276	0	17,123	0	17,123
2104	10,652,334	4,164,912	4,164,912	0	11,247	0	11,247
2105	7,092,159	2,870,772	2,870,772	0	7,228	0	7,228
2106	4,620,526	1,935,138	1,935,138	0	4,543	0	4,543
2107	2,943,118	1,275,452	1,275,452	0	2,792	0	2,792
2108	1,830,306	821,709	821,709	0	1,677	0	1,677
2109	1,108,725	516,899	516,899	0	984	0	984
2110	651,798	316,718	316,718	0	562	0	562
2111	369,879	188,365	188,365	0	312	0	312
2112	200,955	108,402	108,402	0	167	0	167
2113	102,899	59,807	59,807	0	86	0	86
2114	48,236	30,656	30,656	0	41	0	41
2115	19,899	13,837	13,837	0	17	0	17
2116	6,975	5,127	5,127	0	6	0	6
2117	2,159	1,415	1,415	0	2	0	2
2118	846	292	292	0	0	0	0
2119	604	76	76	0	0	0	0



The projections in this report are strictly for the purposes of determining the GASB single discount rate and are different from a funding projection for the ongoing plan.

Investment Return Schedule

	Fiscal Year Ending June 30					
	2014	2015	2016	2017	2018	2019
Annual money-weighted rate of return, Net of investment expense ¹	15.91%	1.49%	(0.63%)	12.14%	8.29%	4.88%

¹ Annual money weighted rate or return, net of investment expense as supplied by ERFC Staff.

Sensitivity

The following table illustrates the impact of interest rate sensitivity on the Net Pension Liability for fiscal year ending June 30, 2018:

	1% Decrease (6.25%)	Current Rate (7.25%)	1% Increase (8.25%)
(1) Total Pension Liability	\$ 3,614,094,900	\$ 3,238,436,290	\$ 2,862,777,680
(2) Plan Fiduciary Net Position	<u>\$ 2,446,279,897</u>	<u>\$ 2,446,279,897</u>	<u>\$ 2,446,279,897</u>
(3) Net Pension Liability	\$ 1,167,815,003	\$ 792,156,393	\$ 416,497,783

The following table illustrates the impact of interest rate sensitivity on the Net Pension Liability for fiscal year ending June 30, 2019:

	1% Decrease (6.25%)	Current Rate (7.25%)	1% Increase (8.25%)
(1) Total Pension Liability	\$ 3,801,476,431	\$ 3,406,340,888	\$ 3,011,205,345
(2) Plan Fiduciary Net Position	<u>\$ 2,521,441,472</u>	<u>\$ 2,521,441,472</u>	<u>\$ 2,521,441,472</u>
(3) Net Pension Liability	\$ 1,280,034,959	\$ 884,899,416	\$ 489,763,873

Disclosure—Changes in the Net Pension Liability and Related Ratios

Changes in the Net Pension Liability and Related Ratios¹

	Fiscal Year Ending		
	2017	2018	2019
Total Pension Liability			
Service Cost	\$ 78,925,763	\$ 88,599,697	\$ 90,633,074
Interest Cost	\$ 209,515,536	\$ 221,106,804	\$ 231,477,042
Changes of Benefit Terms	\$ (1,038,793)	\$ 0	\$ 0
Differences Between Expected and Actual Experiences	\$ 19,857,344	\$ 12,140,768	\$ 27,726,555
Changes of Assumptions	\$ 23,334,195	\$ 0	\$ 0
Benefit Payments	\$ (173,385,583)	\$ (177,720,296)	\$ (181,932,073)
Net Change in Total Pension Liability	\$ 157,208,562	\$ 144,126,973	\$ 167,904,598
Total Pension Liability (Beginning)	\$ 2,937,100,755	\$ 3,094,309,317	\$ 3,238,436,290
Total Pension Liability (Ending)	\$ 3,094,309,317	\$ 3,238,436,290	\$ 3,406,340,888
Plan Fiduciary Net Position			
Contributions—Employer	\$ 80,094,538	\$ 91,704,877	\$ 96,982,911
Contributions—Member	\$ 43,062,632	\$ 44,169,100	\$ 46,645,396
Net Investment Income	\$ 250,981,777	\$ 188,145,489	\$ 117,727,500
Benefit Payments	\$ (173,385,583)	\$ (177,720,296)	\$ (181,932,073)
Administrative Expense	\$ (4,059,408)	\$ (4,300,927)	\$ (4,262,159)
Other	\$ 0	\$ 0	\$ 0
Net Change in Plan Fiduciary Net Position	\$ 196,693,956	\$ 141,998,243	\$ 75,161,575
Plan Fiduciary Net Position (Beginning)	\$ 2,107,587,698	\$ 2,304,281,654	\$ 2,446,279,897
Plan Fiduciary Net Position (Ending)	\$ 2,304,281,654	\$ 2,446,279,897	\$ 2,521,441,472
Net Pension Liability (Ending)	\$ 790,027,663	\$ 792,156,393	\$ 884,899,416
Net Position as a Percentage of Pension Liability	74.47%	75.54%	74.02%
Covered-Employee Payroll	\$ 1,430,259,607	\$ 1,469,629,439	\$ 1,549,247,780
Net Pension Liability as a Percentage of Payroll	55.24%	53.90%	57.12%

¹ GASB 68 was effective first the year beginning in 2014 and requires plan sponsors to report changes in Net Pension Liability for a rolling 10 year period

Disclosure—Contribution Schedule

Contributions

	Fiscal Year Ending		
	2017	2018	2019
Actuarially Determined Contribution	\$ 80,305,269	\$ 93,543,467	\$ 96,982,911
Contributions Made in Relation to the Actuarially Determined Contribution	\$ 80,094,538	\$ 91,704,877	\$ 96,982,911
Contribution Deficiency (Excess)	\$ 210,731	\$ 1,838,590	\$ 0
Covered-Employee Payroll	\$ 1,430,259,607	\$ 1,469,629,439	\$1,549,247,780
Contributions as a Percentage of Payroll ¹	5.60%	6.24%	6.26%

Notes to Schedule:

Valuation Date: Actuarial valuations performed as of odd numbered years typically determine the contribution rate for the two-year period beginning 18 months after the valuation date. The December 31, 2015 valuation was used to determine the funding policy contribution rates for Fiscal 2018 and 2019. Each actuarial valuation determines an ADEC for the period beginning 18 months after the valuation date. The December 31, 2016 valuation updated the ADEC determined for Fiscal 2019.

Methods and assumptions used to determine contribution rates:

Actuarial Cost Method	Entry Age Normal with 24-year closed amortization period for initial unfunded and subsequent actuarial gains/losses from July 1, 2016.
Asset Valuation Method	5-Year smoothed market; 25% corridor.
IRS Limit Increases	2.50%
Salary Increases	3.75% to 9.05% including inflation
Investment Rate of Return	7.25%.
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition.
Mortality	The mortality table used to measure retired life mortality was 90% of the male rates and 79% of the female rates of the RP-2014 mortality Total Data Set Healthy Annuitant Mortality tables, adjusted for mortality improvement back to the base year of 2006. Mortality rates for a particular calendar year are determined by applying the fully generational MP-2016 Mortality Improvement scale to the above- described tables. Tables were extended below age 50 with a cubic spline to the published Juvenile rates. The corresponding Disabled and Employee tables were used for disability and pre-retirement mortality, respectively.

¹ Covered payroll in 2016 and later is reported in accordance with GASB 82. The ratio in the last row cannot always be compared to contributions required by the ERFC Board's funding policy.

Appendix

Participant Data

The actuarial valuation was based on personnel information from ERFC records as of December 31, 2018. Following are some of the pertinent characteristics from the personnel data as of that date. Prior year characteristics are also provided for comparison purposes. Both age and service have been determined using years and months as of the valuation date.

	December 31, 2017	December 31, 2018
Active Participants	21,841	22,048
Inactives With Deferred Benefits	4,746	4,996
Inactives Receiving Payment	11,729	12,101
Total Participants	38,316	39,145

Asset Allocation

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of June 30, 2019 are summarized in the following table:

Asset Class¹	Segal Marco Advisors 20 Year Expected Real Arithmetic Rate of Return	Allocation
Domestic Equity (Large Cap)	6.20%	16.5%
Domestic Equity (Mid Cap)	6.80%	3.0%
Domestic Equity (Small Cap)	7.30%	3.0%
International Equity	7.00%	14.0%
Emerging International Equity	9.90%	3.0%
Global REITS	5.90%	3.5%
Core US Fixed Income	2.00%	26.0%
Emerging Market Debt	4.70%	3.0%
Multi-Asset Class Solutions (MACS)	5.20%	15.0%
Hedge Funds	3.80%	5.0%
Real Estate (Core)	4.80%	4.5%
Private Equity	10.40%	3.5%
Total		100.0%

The discount rate used to measure the total pension liability is 7.25%.

¹ These rates of return reflect ERFC's best estimate based on advice from Segal Marco, who also use an inflation assumption of 2.0%.

Actuarial Assumptions and Methods

Discount Rate	7.25% ¹
20-Year Municipal Bond Rate	3.87%, Beginning of Measurement Period 3.50%, End of Measurement Period
Municipal Bond Rate Basis	Bond Buyer GO 20-Bond Municipal Bond Index
Expected Return on Assets	7.25%
Salary Increases	See Table I.
General Inflation	2.75%
Retirement Age	
Active Participants	See Table II.
Terminated Vested Participants	At plan commencement age provided in terminated vested member data
Mortality Rates	
Healthy and Disabled	The mortality table used to measure retired life mortality was 90% of the male rates and 79% of the female rates of the RP-2014 mortality Total Data Set Healthy Annuitant Mortality tables, adjusted for mortality improvement back to the base year of 2006. Mortality rates for a particular calendar year are determined by applying the fully generational MP-2016 Mortality Improvement scale to the above-described tables. Tables were extended below age 50 with a cubic spline to the published Juvenile rates. The corresponding Disabled and Employee tables were used for disability and pre-retirement mortality, respectively.
Withdrawal Rates	See Table III.
Disability Rates	See Table IV.
Decrement Timing	Middle of year decrements, with 100% retirement occurring at beginning of year.
Surviving Spouse Benefit	It is assumed that 100% of males and 100% of females have an eligible spouse for purposes of death-in-service benefits, and that males are 3 years older than their spouse.

¹ Based on the prior actuaries analysis the employer's funding policy, projected assets are projected to always be sufficient to cover projected benefit payments, so the EROA is used as the discount rate.

Administrative Expenses	Actual administrative expenses during the measurement period are recognized in expense.
COLA Adjustment	Members hired prior to July 1, 2017: 3% (actual COLA). Members hired on/after July 1, 2017: 2.59% (long-term estimate of provision of 100% of CPI-U capped at 4%; see GRS letter dated November 22, 2016).
Asset Method	Fair market value.
Actuarial Cost Method	Entry Age Normal cost method.
Measurement Date	June 30, 2019
Measurement Period	June 30, 2018 to June 30, 2019
Valuation Date	December 31, 2018
Census Data	As of December 31, 2018.

Changes in Financial Accounting Methods/Assumptions Since the Prior Year

Method Changes

There have been no method changes in the financial accounting valuation since the prior year.

Assumption Changes

The financial accounting valuation reflects the following assumption changes:

- The municipal bond rate decreased from 3.87% to 3.50%

Reliance on Information from Prior Actuary

We have relied on the information provided by GRS in the Annual Actuarial Valuation Report as of December 31, 2017 for ERFC for purposes of the June 30, 2018 GASB results. Specifically, the pension liability, the normal cost, and covered payroll are based on information from the report. While we cannot verify the accuracy of all the information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy or completeness of the information and believe that it has produced appropriate results.

Actuarial Assumptions and Methods

Table I

Salary Increase Assumption

Pay Increase Assumption			
Service Index	Merit & Seniority	Base (Economy)	Increase Next Year
1	5.80%	3.25%	9.05%
2	4.00%	3.25%	7.25%
3	3.30%	3.25%	6.55%
4	3.10%	3.25%	6.35%
5	2.50%	3.25%	5.75%
6	2.40%	3.25%	5.65%
7	2.30%	3.25%	5.55%
8	1.70%	3.25%	4.95%
9	1.60%	3.25%	4.85%
10	1.40%	3.25%	4.65%
11	1.40%	3.25%	4.65%
12	1.40%	3.25%	4.65%
13	1.40%	3.25%	4.65%
14	1.40%	3.25%	4.65%
15	0.90%	3.25%	4.15%
16	0.80%	3.25%	4.05%
17	0.70%	3.25%	3.95%
18	0.50%	3.25%	3.75%
19	0.50%	3.25%	3.75%
20	0.40%	3.25%	3.65%
21	0.30%	3.25%	3.55%
22	0.20%	3.25%	3.45%
23	0.20%	3.25%	3.45%
24	0.20%	3.25%	3.45%
25	0.00%	3.25%	3.25%
Ref:	739	3.25%	

Table II

Retirement Rates

Ages	ERFC Legacy (Hired Before 07/01/2001)		ERFC 2001 Tier 1 (Hired 07/01/2001 – 06/30/2017)			ERFC 2001 Tier 2 (Hired On/After 07/01/2017)	
	Type of Retirement		Age Based	Service	Service Based	Age Based	
	Service	Reduced Service				Rule of 90 Met?	
			Yes	No			
45		2.0%					
46		2.0%					
47		2.0%					
48		2.0%					
49		2.0%					
50		2.0%					
51		3.0%					
52		6.0%					
53		7.0%					
54		8.0%					
55	35.0%	6.0%	17.5%	30	17.5%		
56	35.0%	4.0%	17.5%	31	17.5%	35.0%	0.0%
57	25.0%	4.0%	12.5%	32	12.5%	35.0%	0.0%
58	25.0%	4.0%	12.5%	33	12.5%	35.0%	0.0%
59	25.0%	4.0%	12.5%	34	12.5%	35.0%	0.0%
60	25.0%	7.0%	10.0%	35	10.0%	35.0%	0.0%
61	30.0%	8.0%	10.0%	36	10.0%	35.0%	0.0%
62	30.0%	13.0%	10.0%	37	10.0%	35.0%	0.0%
63	30.0%	13.0%	10.0%	38	25.0%	35.0%	0.0%
64	30.0%	13.0%	20.0%	39	40.0%	35.0%	0.0%
65	30.0%		25.0%	40 & Up	100.0%	35.0%	0.0%
66	30.0%		30.0%			35.0%	0.0%
67	25.0%		25.0%			35.0%	30.0%
68	25.0%		15.0%			35.0%	15.0%
69	20.0%		15.0%			35.0%	15.0%
70	20.0%		15.0%			35.0%	15.0%
71	20.0%		15.0%			35.0%	15.0%
72	20.0%		15.0%			35.0%	15.0%
73	30.0%		15.0%			35.0%	15.0%
74	30.0%		15.0%			35.0%	15.0%
75 & Over	100.0%		100.0%			100.0%	100.0%

* The probability is 60% at age 60 for people who first meet the Rule of 90 at age 60.

The age column index does not apply to the service-based retirements. In ERFC 2001 Tier 1, an individual can retire at 30 years of service regardless of age. In ERFC 2001 Tier 2, an individual would be able to retire at FSSA with 5 years of service or when the sum of age and service is greater than or equal to 90. FSSA is assumed to be age 67 for members hired on/after July 1, 2017

Table III

Withdrawal Rates

Service	% of Active Participants Withdrawing	
	Males	Females
0 - 1	13%	15%
1 - 2	12%	14%
2 - 3	11%	13%
3 - 4	9%	11%
4 - 5	7%	9%
5 - 6	6%	9%
6 - 7	5%	9%
7 - 8	4%	9%
8 - 9	4%	6%
9 - 10	4%	5%
10 - 11	4%	5%
11 - 12	3%	4%
12 - 13	3%	4%
13 - 14	3%	3%
14 - 15	2%	3%
15 - 16	2%	3%
16 - 17	1%	3%
17 - 18	1%	2%
18 - 19	1%	2%
19 - 20	1%	2%
20 - 21	1%	2%
21 - 22	1%	2%
22 - 23	1%	2%
23 - 24	1%	2%
24 - 25	1%	2%
Ref:	1671	1672

In addition, forfeiture occurs when a vested person separates from service and withdraws contributions thereby forfeiting future rights to an employer financed benefit. The total probability of forfeiture is obtained by multiplying the probability of withdrawal above by 10%. Forfeiture rates do not apply to individuals who are eligible for retirement at time of termination.

Table IV

Sample Rates of Separation From Active Employment

Ages in	% of Active Members Dying or Becoming Disabled within Next Year							
	Death*				Disability			
	Ordinary		Duty		Ordinary		Duty	
2017	Men	Women	Men	Women	Men	Women	Men	Women
20	0.0188%	0.0064%	0.0019%	0.0006%	0.0117%	0.0048%	0.0029%	0.0012%
21	0.0208%	0.0065%	0.0021%	0.0006%	0.0117%	0.0048%	0.0029%	0.0012%
22	0.0227%	0.0065%	0.0023%	0.0006%	0.0117%	0.0048%	0.0029%	0.0012%
23	0.0238%	0.0067%	0.0024%	0.0006%	0.0142%	0.0074%	0.0036%	0.0018%
24	0.0242%	0.0069%	0.0024%	0.0006%	0.0149%	0.0081%	0.0037%	0.0020%
25	0.0228%	0.0071%	0.0023%	0.0007%	0.0146%	0.0082%	0.0036%	0.0020%
26	0.0218%	0.0074%	0.0022%	0.0007%	0.0142%	0.0082%	0.0035%	0.0021%
27	0.0212%	0.0077%	0.0021%	0.0007%	0.0140%	0.0086%	0.0035%	0.0022%
28	0.0210%	0.0081%	0.0021%	0.0008%	0.0142%	0.0094%	0.0036%	0.0024%
29	0.0212%	0.0086%	0.0021%	0.0008%	0.0149%	0.0106%	0.0037%	0.0027%
30	0.0215%	0.0091%	0.0022%	0.0009%	0.0158%	0.0122%	0.0040%	0.0031%
31	0.0221%	0.0098%	0.0022%	0.0009%	0.0171%	0.0140%	0.0043%	0.0035%
32	0.0228%	0.0104%	0.0023%	0.0010%	0.0186%	0.0158%	0.0046%	0.0040%
33	0.0236%	0.0110%	0.0024%	0.0010%	0.0202%	0.0178%	0.0050%	0.0044%
34	0.0244%	0.0116%	0.0024%	0.0011%	0.0218%	0.0196%	0.0054%	0.0049%
35	0.0252%	0.0121%	0.0025%	0.0011%	0.0234%	0.0214%	0.0059%	0.0054%
36	0.0258%	0.0127%	0.0026%	0.0012%	0.0252%	0.0232%	0.0063%	0.0058%
37	0.0265%	0.0133%	0.0026%	0.0012%	0.0271%	0.0250%	0.0068%	0.0062%
38	0.0273%	0.0141%	0.0027%	0.0013%	0.0291%	0.0268%	0.0073%	0.0067%
39	0.0284%	0.0151%	0.0028%	0.0014%	0.0314%	0.0287%	0.0078%	0.0072%
40	0.0298%	0.0163%	0.0030%	0.0015%	0.0339%	0.0308%	0.0085%	0.0077%
41	0.0317%	0.0177%	0.0032%	0.0016%	0.0367%	0.0331%	0.0092%	0.0083%
42	0.0342%	0.0195%	0.0034%	0.0018%	0.0399%	0.0357%	0.0100%	0.0089%
43	0.0373%	0.0215%	0.0037%	0.0020%	0.0435%	0.0386%	0.0109%	0.0097%
44	0.0411%	0.0239%	0.0041%	0.0022%	0.0475%	0.0419%	0.0119%	0.0105%
45	0.0456%	0.0267%	0.0046%	0.0025%	0.0520%	0.0456%	0.0130%	0.0114%
46	0.0508%	0.0298%	0.0051%	0.0028%	0.0570%	0.0498%	0.0143%	0.0124%
47	0.0568%	0.0332%	0.0057%	0.0031%	0.0626%	0.0545%	0.0157%	0.0136%
48	0.0634%	0.0370%	0.0063%	0.0034%	0.0689%	0.0598%	0.0172%	0.0149%
49	0.0708%	0.0411%	0.0071%	0.0038%	0.0760%	0.0658%	0.0190%	0.0164%
50	0.0789%	0.0454%	0.0079%	0.0042%	0.0842%	0.0726%	0.0210%	0.0181%
55	0.1333%	0.0704%	0.0133%	0.0065%	0.1469%	0.1228%	0.0367%	0.0307%
60	0.2279%	0.1016%	0.0228%	0.0095%	0.2447%	0.1770%	0.0612%	0.0443%

Ref: $\frac{0.50}{sb} \times 2133$ $\frac{0.43}{sb} \times 2134$ $\frac{0.05}{sb} \times 2133$ $\frac{0.04}{sb} \times 2134$ 0.08 x 16 0.08 x 17 0.02 x 16 0.02 x 17

* Applicable to calendar year 2017. Rates in future years are determined by the MP-2016 projection scale

Actuarial Assumptions and Methods

Discussion of Actuarial Assumptions and Methods

ERFC selected the economic and demographic assumptions and prescribed them for use for purposes of compliance with GASB 68. Aon provided guidance with respect to these assumptions, and it is our belief that the assumptions represent reasonable expectations of anticipated plan experience.

Calculation of Normal Costs and Liabilities

The method used to calculate the service cost and projected benefit obligation for determining pension expense is the entry age normal cost method. Under this cost method, the actuarial accrued liability is based on a prorated portion of the present value of all benefits earned to date over expected future working life time as defined by GASB. The proration is determined so that the cost with respect to service accrued from date of hire is recognized as a level percentage of pay each year. The Normal Cost is equal to the prorated cost for the year of the valuation.

Accounting Information Under GASB 68

Benefit obligations and expense/(income) are calculated under U.S. Generally Accepted Accounting Principles as set forth in Government Accounting Standards Board Statement 68.

The total pension liability represents the actuarial present value of benefits based on the entry age normal cost method as of the measurement date. The service cost represents the actuarial present value of benefits that are attributed to the 2019 fiscal year, reflecting the effect of assumed future pay increases.

The pension expense is the annual amount to be recognized in the income statement as the cost of pension benefits for this plan for the period ending June 30, 2019.

Plan Provisions

Eligibility to Participate

ERFC Members Hired After July 1, 1988 but Before July 1, 2001

Contributions

Effective July 1, 2012, members contribute 3% of their salaries. Interest credits are 5% annually through June 30, 2017, and 4% annually thereafter. If a member leaves covered employment before becoming eligible to retire, accumulated contributions are returned upon request. Members who receive a refund of contributions and are later rehired become members of ERFC 2001 Tier 2.

Eligibility for Retirement

Normal Retirement

A member may retire any time after reaching the service retirement date, which is either (i) age 65 with 5 years of service or (ii) age 55 with 25 years of service

Early Retirement

A member with 25 years of service but younger than age 55 may retire after age 45. A member with less than 25 years of service and younger than age 65 may retire after age 55.

Disability Retirement

An active member with 5 or more years of service who becomes totally and permanently disabled may be retired and receive a disability pension. The 5-year service requirement is waived if the disability is service-connected.

Normal Retirement Benefit

For payment periods during the retired member's lifetime 103% times (i) minus (ii) where:

- (i) means 1.85 percent of the FAC multiplied by years of credited service, and
- (ii) means 1.65 percent of the portion of VRS FAC in excess of \$1,200, multiplied by applicable years of creditable Virginia service; provided if the member is younger than age 65 and if creditable Virginia service is less than 30 years, the result of such multiplication shall be reduced for each month before the earlier of:
 - (1) attainment of age 65; and
 - (2) the date when 30 years of service would have been completed.

The reduction shall be one-half of 1% for each of the first 60 months and four-tenths of one percent for each month beyond 60 months, if any.

For payment periods, if any, before the age the member becomes eligible for full Social Security benefits, an additional temporary benefit equal to 103% times 1.00 percent of the FAC multiplied by years of credited service.

Early Retirement Benefit

Accrued benefit to early retirement date payable at normal retirement date reduced according to the following schedule:

After 25 years of service: Service Retirement amount reduced to reflect retirement age younger than age 55.

After 5 years of service, but before 25 years of service: For payment periods during the retired member's lifetime, the Service Retirement amount payable at age 65 reduced to reflect retirement age younger than age 65. For payment periods before the age the member becomes eligible for full Social Security benefits, an additional temporary benefit equal to the Service Retirement temporary benefit reduced to reflect retirement age younger than age 65.

Disability Benefit

The amount is 103% times a lifetime pension equal to 0.25 percent of the FAC multiplied by years of credited service. Credited service shall be increased by the time period from disability retirement to the date when the member would have reached the service retirement date. The minimum pension payable is 2.5 percent of FAC.

Vested Deferred Benefit
Eligibility

An inactive member with 5 or more years of service will be entitled to a pension with payments beginning at age 55, provided she/he does not withdraw accumulated member contributions.

Amount

Calculated in the same manner as early retirement benefits.

Final Average Compensation (FAC)

A member's final average compensation is the average of the 3 highest consecutive years of salary during eligible employment.

Forms of Payment

Normal Form

The assumed normal form of benefit is the straight life form.

Optional Forms

Option A: 100% Joint and Survivor benefit. Benefit is 85% of the straight life amount adjusted for the difference in age between the retiree and beneficiary. The maximum benefit is 94% of the straight life amount.

Option B: 50% Joint and Survivor benefit. Benefit is 91% of the straight life amount adjusted for the difference in age between the retiree and beneficiary. The maximum benefit is 97% of the straight life amount.

Option C: 10 years Certain and Life. Benefit is 96% of the straight life amount.

Option D: Single sum payment not exceeding member's accumulated contribution balance, plus a single life annuity actuarially reduced from the pension amount otherwise payable.

Post-Retirement Increases

The amount of the monthly benefit is adjusted each March 31st, by 3% compounded annually, beginning with the March 31st which is more than three full months after the member's effective retirement date. Pensions of members that retire in the immediately preceding calendar year are increased by 1.489% (one-half a year's increase).

Spouse's Preretirement Death Benefit

Statutory Death Benefits

Eligibility

An active member with 5 or more years of service who dies will have benefits payable to the surviving spouse or other eligible beneficiary. The 5-year service requirement is waived if the death is service-connected.

Amount

If the member is eligible for a service or reduced service retirement then an eligible named beneficiary will receive such benefits reduced based upon an Option A (in the case of a spouse or an ex-spouse subject to a DRO) or Option B (in case of another eligible beneficiary) election. If not, the eligible named beneficiary will receive an amount equal to 103% times a lifetime pension equal of 0.25% of the FAC multiplied by years of credited service, and also reduced in connection with an Option A or Option B election. Credited service shall be increased by the time period from the date of death to the date when the member would have reached service retirement with a minimum of 10 years of service used, provided the death was service-connected. If a named beneficiary is not eligible for either of these types of benefits, the named beneficiary will receive a refund of the member's accumulated contributions.

Alternative Benefits Available to Members with Some Service Before July 1, 1988

Service Retirement: Alternate Amount
After Full Social Security Age

A member with service before 7/1/1988 may elect, at time of retirement, to receive an alternate benefit amount for payment periods after full Social Security age. The Alternative Guarantee amount is the amount that would have been received after the individual reached eligibility for full Social Security benefits under the Old Plan (pre – July 1, 1988) formulas. The amount is 103% of the total of:

- (i) the amount payable under June 30, 1987 benefit provisions,
- (ii) plus, if the retiring member is younger than full Social Security age and if creditable Virginia service is less than 30 years, 1.65 percent of VRS average final compensation in excess of \$1,200, multiplied by years of creditable Virginia service, and further multiplied by a certain percent based upon the number of months that retirement occurs before reaching the earlier of the above two conditions; such percent is one half of one percent for each of the first 60 such months and four-tenths of one percent for each of the next 60 such months, if any.

Reduced Service Retirement: Alternate
Amount with 25 Years or more Years of
Service

By election at time of retirement, such a member may elect to receive 103% of the following combination of benefits:

- (i) To age 55, 2.85 percent of the 3-year average annual salary multiplied by years of credited service, then actuarially reduced to reflect retirement age younger than age 55;
- (ii) From age 55 to 65, the amount to age 55 reduced by: 1.65 percent of the portion of VRS average final compensation in excess of \$1,200, multiplied by applicable years of creditable Virginia service; provided if creditable Virginia service is less than 30 years, the result of such multiplication shall be actuarially reduced for each month before the earlier of (1) attainment of age 65; and (2) the date when 30 years' service would have been completed; and
- (iii) From age 65 for life, the amount payable at age 65 according to June 30, 1987 provisions or the amount payable at age 65 according to July 1, 1988 provisions.

Plan Changes Since the Prior Year

The financial accounting valuation does not reflect any plan changes.

Eligibility to Participate	Members Hired On/After July 1, 2001 but Before July 1, 2017 (ERFC 2001 Tier 1)
Contributions	Effective July 1, 2012, members contribute 3% of their salaries. Interest credits are 5% annually through June 30, 2017, and 4% annually thereafter. If a member leaves covered employment before becoming eligible to retire, accumulated contributions are returned upon request. Members who receive a refund of contributions and are later rehired become members of ERFC 2001 Tier 2.
Eligibility for Retirement Normal Retirement	A member may retire at age 60 with 5 or more years of credited service, or after 30 years of credited service regardless of age.
Normal Retirement Benefit	The amount is a lifetime pension equal to 0.8% (eight-tenths of one percent) of FAC at retirement multiplied by years of credited service. If necessary, the pension will be increased to make the reserve value of the pension equal to the member's accumulated contributions as of the retirement effective date.
Vested Deferred Benefit Eligibility	Any member with 5 or more years of credited service who terminates employment prior to the service retirement date, will be eligible to receive a deferred vested pension commencing at age 60, provided accumulated contributions are left on deposit with the Plan.
Amount	The amount is a lifetime pension equal to 0.8% (eight-tenths of one percent) of FAC at termination multiplied by years of credited service. If necessary, the pension will be increased to make the reserve value of the pension equal to the member's accumulated contributions as of the effective retirement date
Final Average Compensation (FAC)	A member's Final Average Compensation is the average of the 3 highest years of salary during eligible employment.
Forms of Payment Normal Form	The assumed normal form of benefit is the straight life form.
Optional Forms	Option A: 100% Joint and Survivor benefit. Benefit is 85% of the straight life amount adjusted for the difference in age between the retiree and beneficiary. The maximum benefit is 94% of the straight life amount. Option B: 50% Joint and Survivor benefit. Benefit is 91% of the straight life amount adjusted for the difference in age between the retiree and beneficiary. The maximum benefit is 97% of the straight life amount.

Option C: 10 years Certain and Life. Benefit is 96% of the straight life amount.

Post-Retirement Increases

The amount of the monthly benefit is adjusted each March 31st, by 3% compounded annually, beginning with the March 31st which is more than three full months after the member's effective retirement date. Pensions of members that retire in the immediately preceding calendar year are increased by 1.489% (one-half a year's increase).

Spouse's Preretirement Death Benefit Statutory Death Benefits Eligibility

Any member with 5 or more years of credited service who dies before beginning to receive a pension will have benefits payable to the named beneficiary..

Amount

The amount is a lifetime pension equal to 0.8% (eight-tenths of one percent) of FAC multiplied by years of credited service at the date of death. If necessary, the pension will be increased to make the reserve value of the pension equal to the member's accumulated contributions as of the date of death. The pension will be adjusted in accordance with an Option A (in the case of a spouse or an ex-spouse subject to a DRO) or Option B (in case of another eligible beneficiary) election payable immediately unless the member did not reach the service retirement eligibility prior to death, in which case the pension is reduced for each month that the member was younger than age 60 on the date of death in the following manner:

- a. One-half of 1% for each of the first 60 months and four-tenths of one percent for each month beyond 60 months (the number of months used for reduction is not to exceed the difference between the member's credited service at death and 30 years).

Plan Changes Since the Prior Year

The financial accounting valuation does not reflect any plan changes.

Eligibility to Participate	Members Hired On/After July 1, 2017 (ERFC 2001 Tier 2)
Contributions	Members contribute 3% of their salaries. Interest credits are 4% annually. If a member leaves covered employment before becoming eligible to retire, accumulated contributions are returned upon request.
Eligibility for Retirement Normal Retirement	A member may retire at Full Social Security Age (FSSA) with 5 or more years of credited service, or when the sum of age plus service is greater than or equal to 90 (i.e., "Rule of 90").
Normal Retirement Benefit	The amount is a lifetime pension equal to 0.8% (eight-tenths of one percent) of FAC at retirement multiplied by years of credited service. If necessary, the pension will be increased to make the reserve value of the pension equal to the member's accumulated contributions as of the retirement effective date.
Vested Deferred Benefit Eligibility	Any member with 5 or more years of credited service who terminates employment prior to the service retirement date, will be eligible to receive a deferred vested pension commencing at FSSA, provided accumulated contributions are left on deposit with the Plan.
Amount	The amount is a lifetime pension equal to 0.8% (eight-tenths of one percent) of FAC at termination multiplied by years of credited service. If necessary, the pension will be increased to make the reserve value of the pension equal to the member's accumulated contributions as of the effective retirement date.
Final Average Compensation (FAC)	A member's Final Average Compensation is the average of the 5 highest years of salary during eligible employment.
Forms of Payment Normal Form	The assumed normal form of benefit is the straight life form.
Optional Forms	Before the effective retirement date, a retiring member may elect one of the following options: Option A: 100% Joint and Survivor benefit. Benefit is 85% of the straight life amount adjusted for the difference in age between the retiree and beneficiary. The maximum benefit is 94% of the straight life amount.

Option B: 50% Joint and Survivor benefit. Benefit is 91% of the straight life amount adjusted for the difference in age between the retiree and beneficiary. The maximum benefit is 97% of the straight life amount.

Option C: 10 years Certain and Life. Benefit is 96% of the straight life amount

Post-Retirement Increases

The amount of the monthly benefit is adjusted each March 31st, by 100% of the Consumer Price Index (CPI-U) (with a cap of 4%) compounded annually, beginning with the March 31st which is more than three full months after the member's effective retirement date. Pensions of members that retire in the immediately preceding calendar year are increased by one-half a year's increase.

Spouse's Preretirement Death Benefit Statutory Death Benefits Eligibility

Any member with 5 or more years of credited service who dies before beginning to receive a pension will have benefits payable to the named beneficiary..

Amount

The amount is a lifetime pension equal to 0.8% (eight-tenths of one percent) of FAC multiplied by years of credited service at the date of death. If necessary, the pension will be increased to make the reserve value of the pension equal to the member's accumulated contributions as of the date of death. The pension will be adjusted in accordance with Option A (in the case of a spouse or an ex-spouse subject to a DRO) or Option B (in case of another eligible beneficiary) election payable immediately unless the member did not reach the service retirement eligibility prior to death, in which case the pension is reduced for each month that the member was younger than service retirement eligibility on the date of death in the following manner:

One-half of 1% for each of the first 60 months and four-tenths of one percent for each month beyond 60 months (the number of months used for reduction is based on the lesser of FSSA or the age the member would have attained "Rule of 90").

Plan Changes Since the Prior Year

The financial accounting valuation does not reflect any plan changes.