

**EDUCATIONAL EMPLOYEES' SUPPLEMENTARY
RETIREMENT SYSTEM OF FAIRFAX COUNTY (ERFC)**

**33RD ANNUAL ACTUARIAL VALUATION
DECEMBER 31, 2012**

REPORT OF THE DECEMBER 31, 2012 ACTUARIAL VALUATION OUTLINE OF CONTENTS

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June 3, 2013

The Board of Trustees
Educational Employees' Supplementary
Retirement System of Fairfax County
Fairfax, Virginia

Dear Board Members:

Submitted in this report are the results of our 33rd annual actuarial valuation of the Educational Employees' Supplementary Retirement System of Fairfax County (ERFC), based on data as of ***December 31, 2012***.

The purpose of this valuation was to measure the system's funding progress and to determine actuarial information for Governmental Accounting Standards Board (GASB) Statement Nos. 25 and 27. The results of the valuation may not be applicable for other purposes.

Individual member statistical data, together with the necessary financial data on which the valuation was based, was furnished by your Executive Director and staff. Their efforts in furnishing this material are acknowledged with our appreciation.

The actuarial assumptions used in making the actuarial valuation are shown in Section G of this report. The assumptions were adopted by the Trustees following a study of experience covering the five-year period ending December 31, 2009.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as: plan experience differing from that anticipated by the economic and demographic assumptions; changes 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 or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Due to the limited scope of the actuary's assignment, the actuary did not perform an analysis of the potential range of such future measurements.

This valuation was completed in accordance with actuarial procedures proscribed by the Actuarial Standards Board. The Actuaries involved have extensive experience in performing valuations of public employee retirement systems.

The signing actuaries are independent of the plan sponsor.

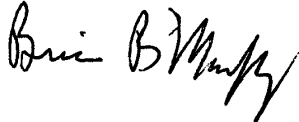
The Actuaries submitting this report are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The Board of Trustees
June 3, 2013
Page 2

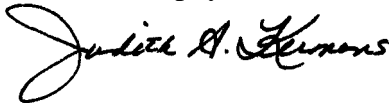
Your attention is directed particularly to:

COMMENTS on page 3;
Computed Employer Contribution Rate on page B-2;
Comparative Statement on page B-5;
Short Condition Test on page B-7.

Respectfully submitted,



Brian B. Murphy, FSA, EA, FCA, MAAA



Judith A. Kermans, EA, FCA, MAAA

BBM/JAK:elh

COMMENTS

Funding Policy: The ERFC funding policy, as stated in the ERFC Plan Document is “*to establish and receive contributions which will remain approximately level from generation to generation of citizens, and which when combined with other assets and investment return thereon, will be sufficient to pay benefits when due while providing a reasonable margin for adverse experience.*”

Contribution Rate Policy: Actuarial valuations as of odd numbered years (2011, 2013, etc.), are used to set the employer contribution rate for the two-year period beginning 18 months after the valuation date. The December 31, 2011 valuation is used to determine the contribution rate for the period July 1, 2013 to June 30, 2015. Actuarial valuations as of even numbered years, such as this valuation, provide an interim measure of the financial condition of ERFC and are also used for financial reporting in connection with Governmental Accounting Standards Board (GASB) Statements No. 25 and No. 27, including the determination of the “Annual Required Contribution” (ARC) in accordance with parameters specified by the GASB. The December 31, 2012 valuation determines the GASB ARC for the second year of the biennium (Fiscal 2015). For funding purposes, unfunded accrued liabilities are currently being amortized over a closed 30 year period ending on June 30, 2040. The remaining amortization period in the December 31, 2012 valuation is 26 years.

Contribution Rate: The contribution rate for the two-year period beginning July 1, 2013 was calculated in the December 31, 2011 valuation to be 5.51% of payroll. The rate estimated to be the minimum amount that would avoid a Net Pension Obligation (NPO) for the two-year funding period (July 1, 2013 to June 30, 2015) was 5.60% based on the following assumptions: 1) investment return of 7.5% in all future years, 2) 3.75% pay increases in all future years and 3) benefit provisions remain unchanged and other plan experience is in line with expectations. Therefore, the funding policy contribution of 5.60% included the calculated ARC of 5.51% for Fiscal Year 2014 plus a contingency contribution of 0.09%. The December 31, 2011 valuation report stated that if plan experience in 2012 was worse than this scenario, the 5.60% rate could result in a Net Pension Obligation (NPO) under current GASB standards in Fiscal Year 2015. Based on the December 31, 2012 valuation results, the GASB ARC contribution rate was calculated to be 5.58%; this means that the contingency reserve in Fiscal Year 2015 is 2 basis points.

Plan Experience: ERFC’s market value rate of return as measured by the actuary was 13.8%, which was favorable. Although losses from 2011 are still being phased in, the market value of assets is only \$13 million below the funding value. Plan liabilities grew about as expected, but payroll grew less than expected. The funded percent is now 75.4%, which is lower than last year’s funded percent of 75.6%. Even if the market value of assets had grown only as expected (earning 7.5%) during 2012, there still would have been downward pressure on the funded percent due to the continued phase-in of the 2011 asset loss. Since the plan earned more than 7.5%, the decrease in the funded percent was small. If the market value of assets were the basis for the measurement (as opposed to the funding value with five-year smoothing of gains and losses and a 25% corridor), the funded percent would be 74.9% and the ARC for Fiscal 2014 would be 5.64% of payroll.

Financial Status: Based upon the December 31, 2012 valuation, the Fairfax County ERFC is operating in accordance with its funding policy and with actuarial principles of level percent of payroll financing. ERFC is fortunate that its long standing commitment to excellence in funding has resulted in financial strength that enabled it to weather continued market downturns.

SECTION A

FINANCIAL PRINCIPLES

FINANCIAL PRINCIPLES AND OPERATIONAL TECHNIQUES

Promises Made, and Eventually Paid. As each year is completed, the plan in effect hands an “IOU” to each member then acquiring a year of service credit --- The “IOU” says: “The Educational Employees’ Supplementary Retirement System of Fairfax County owes you one year’s worth of retirement benefits, payments in cash commencing when you qualify for retirement.”

The related ***key financial questions*** are:

Which generation of taxpayers contributes the money to cover the IOU?

The present taxpayers, who receive the benefit of the member’s present year of service?

Or the future taxpayers, who happen to be in Fairfax County at the time the IOU becomes a cash demand?

The law governing plan financing intends that this year’s taxpayers contribute the money to cover the IOUs being handed out this year. By following this principle, ***the employer contribution rate will remain approximately level from generation to generation*** --- your children and grandchildren will contribute the same percents of active payroll you contribute now.

(There are systems which have a design for deferring contributions to future taxpayers, lured by a lower contribution rate now and putting aside the consequence that the contribution rate must then relentlessly grow much greater over decades of time --- consume now, and let your children face higher contributions after you retire.)

An inevitable by-product of the level-cost design is the accumulation of reserve assets for decades, and the income produced when the assets are invested. ***Invested assets are a by-product and not the objective.*** ***Investment return*** becomes, in effect, the third contributor for benefits to employees, and is interlocked with the contribution amounts required from employees and employers.

Translated to actuarial terminology, this level-cost objective means that the contribution rates must total at least the following:

Current Cost (the cost of members' service being rendered this year)

... plus ...

Interest on Unfunded Accrued Liabilities (unfunded accrued liabilities are the difference between (i) liabilities for service already rendered and (ii) the accrued assets of the plan).

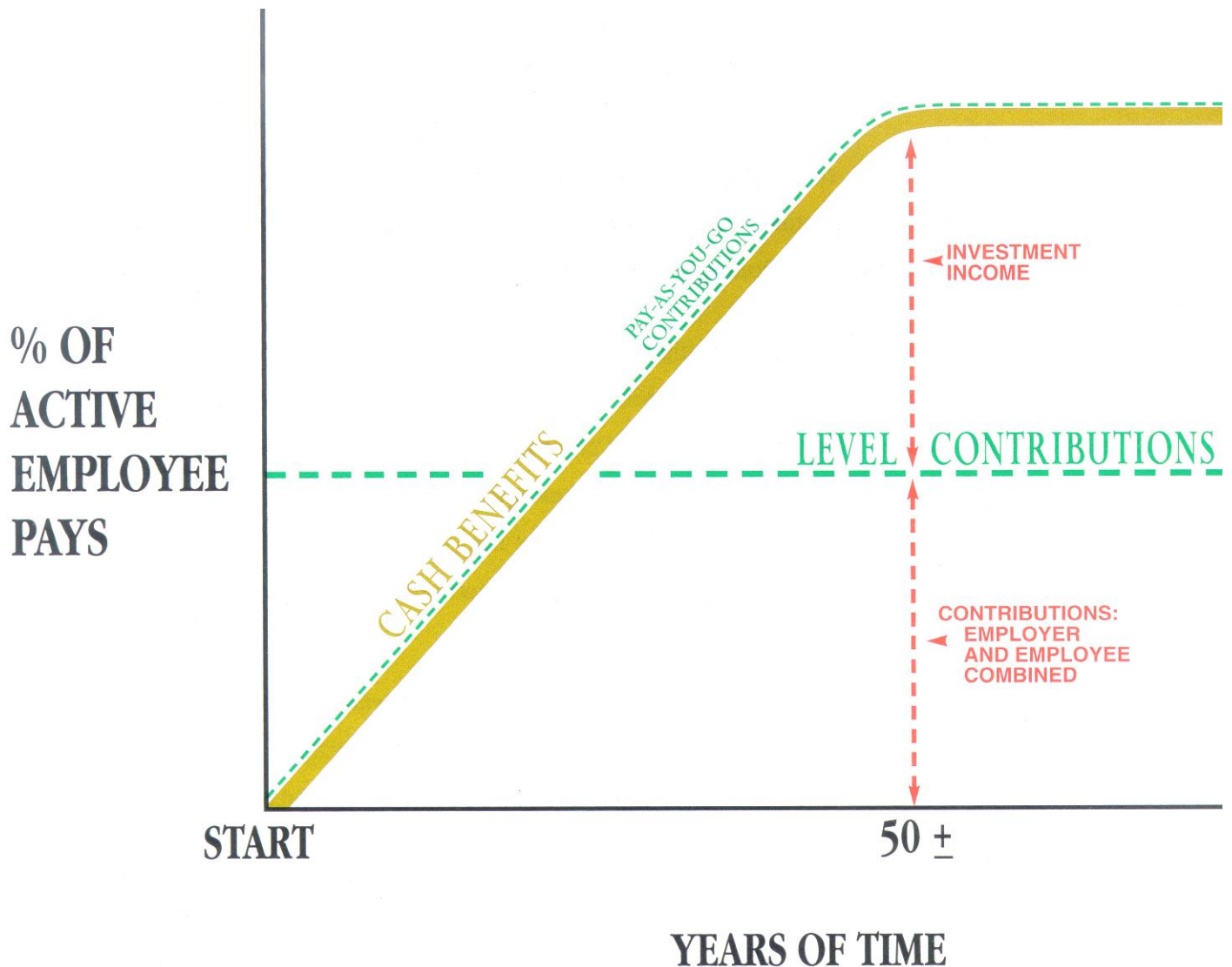
Computing Contributions to Support Plan Benefits. From a given schedule of benefits and from the employee data and asset data furnished, the actuary determines the contribution rates to support the benefits, by means of ***an actuarial valuation and a funding method.***

An actuarial valuation has a number of ingredients such as: the rate of investment return which plan assets are assumed to earn; the rates of withdrawal of active members who leave covered employment before qualifying for any monthly benefit; the rates of mortality; the rates of disability; the rates of pay increases; and the assumed age or ages at actual retirement.

In preparing an actuarial valuation, assumptions must be made as to what the above rates will be for the next year and for decades in the future. Only the subsequent actual experience of the plan can indicate the degree of accuracy of the assumptions.

Reconciling Differences Between Assumed Experience and Actual Experience. Once actual experience has occurred and been observed, it will not coincide exactly with assumed experience, regardless of the wisdom of the assumptions and regardless of the skill of the actuary and the millions of calculations made. The demographic future can be predicted with considerable but not 100% precision. However, ***inflation rates seem to defy reliable prediction.***

The plan copes with these continually changing differences by having periodic actuarial valuations. Each actuarial valuation is a complete recalculation of assumed future experience, taking into account all past differences between assumed and actual experience. The result is ***continuing adjustments in financial position.***



CASH BENEFITS LINE. This relentlessly increasing line is the fundamental reality of retirement plan financing. It happens each time a new benefit is added for future retirements (and happens regardless of the design for contributing for benefits).

LEVEL CONTRIBUTION LINE. Determining the level contribution line requires detailed assumptions concerning a variety of experiences in future decades, including:

Economic Risk Areas

- Rates of investment return
- Rates of pay increase
- Changes in active member group size

Non-Economic Risk Areas

- Ages at actual retirement
- Rates of mortality
- Rates of withdrawal of active members (turnover)
- Rates of disability

THE ACTUARIAL VALUATION PROCESS

The financing diagram on the opposite page shows the relationship between the two fundamentally different philosophies of paying for retirement benefits: the method where contributions match cash benefit payments (or barely exceed cash benefit payments, as in the Federal Social Security program) and is thus an *increasing contribution method*; and the *level contribution method* which equalizes contributions between the generations.

The actuarial valuation is the mathematical process by which the level contribution rate is determined, and the flow of activity constituting the valuation may be summarized as follows:

Covered Person Data, furnished by plan administrator

Retired lives now receiving benefits

Former employees with vested benefits not yet payable

Active employees

+ *Asset Data* (cash and investments), furnished by plan administrator

+ *Assumptions concerning future financial experiences in various risk areas*,
which assumptions are established by the Board of Trustees after consulting with the actuary

+ *The funding method* for employer contributions (the long-term, planned pattern for employer contributions)

+ *Mathematically combining the assumptions, the funding method, and the data*

= Determination of:

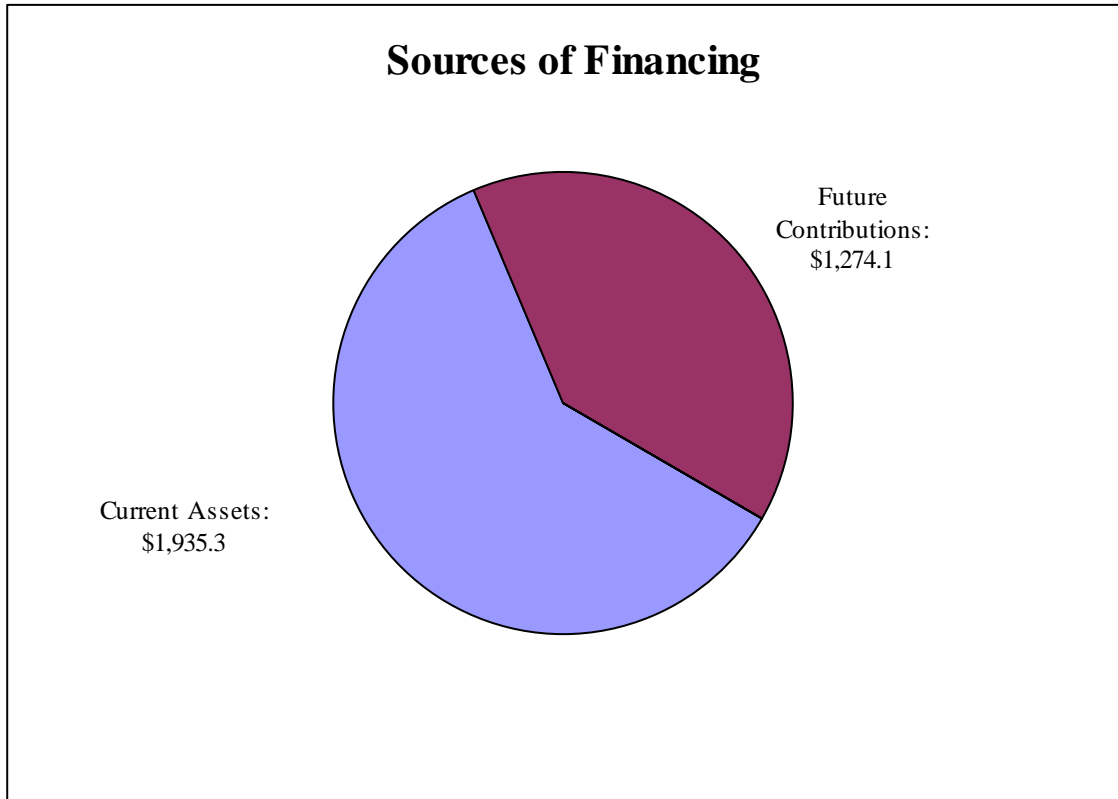
Plan Financial Position

and/or *New Employer Contribution Rate*

SECTION B

RESULTS OF THE VALUATION

FINANCING \$3,209.4 MILLION OF BENEFIT PROMISES
DECEMBER 31, 2012
(\$ IN MILLIONS)



The pie chart above shows that the total amount of benefit promises made to members in *ERFC* and *ERFC 2001* is \$3,209.4 million, based on plan assumptions as of December 31, 2012. In actuarial terms this is called the present value of future benefit payments. It represents the amount of money, shown in today's dollars, needed to pay benefits to current and future retirees based on plan assumptions. These assumptions are outlined in Section G of this report. The \$3,209.4 million would be sufficient to pay promised benefits if plan members leave active employment as expected (retire, quit, etc.), and live exactly according to plan mortality assumptions. A major assumption in calculating the \$3,209.4 million number is that investments earn 7.50% per year. Investment return during 2012, as measured by the actuary, was 13.8% on a market value basis.

**COMPUTED EMPLOYER CONTRIBUTION RATES
(AS PERCENTS OF ACTIVE MEMBER PAYROLL)**

Valuation Date	December 31, 2012	December 31, 2011
Contributions for Period Ending June 30	2015	2014
Normal Cost (current cost):		
Service Retirement	3.87%	3.82%
Reduced Service Retirement	0.54%	0.60%
Casualty Benefits	0.10%	0.10%
Separation Benefits	1.27%	1.24%
Totals	5.78%	5.76%
Member Contributions	3.00%	3.00%
Employer Normal Cost	2.78%	2.76%
Unfunded Actuarial Accrued Liability	2.80%	2.75%
Annual Required Contribution (GASB 25)	5.58%	5.51%
Contingency Contribution	0.02%	0.09%
Funding Policy Contribution	5.60%	5.60%

Unfunded liability was amortized as a level percent of payroll over 26 years in the December 31, 2012 valuation and 27 years in the December 31, 2011 valuation. If this schedule is continued, unfunded liabilities will be fully amortized on June 30, 2040.

The funding policy contribution for the two-year period beginning July 1, 2014 was determined by the December 31, 2011 valuation. The contribution rate was calculated to be 5.60% of payroll (5.51% ARC plus 0.09% Contingency Contribution). This rate was estimated to be the minimum amount that would be sustainable for the period July 1, 2013 to June 30, 2015 based on the following assumptions: 1) investment return of 7.5% in all future years, 2) 3.75% pay increases in all future years and 3) benefit provisions remain unchanged and other plan experience is in line with expectations. The ARC for Fiscal Year 2015 was calculated to be 5.58%, which is lower than the 5.60% Funding Policy rate.

CONTRIBUTION RATE HISTORY

Fiscal Year	Valuation Date Used	Employee Rate	Adopted Employer Rate		ARC Rate
			Support	Educational	
1991	1989	2.00%	5.08%	5.53%	
1992	1990	2.00%	5.08%	5.53%	
1993	1991	2.00%	5.08%	5.53%	
1994	1992	2.00%	5.08%	5.53%	
1995	1993	2.00%	5.08%	5.53%	
1996	1994	2.00%	5.08%	5.53%	
1997	1995	2.00%	5.58%	6.03%	
1998	1996	2.00%	5.58%	6.03%	
1999	1997	2.00%	5.58%	6.03%	
			Combined July 1, 1999		
2000	1998	2.00%	4.99%		
2001	1999	2.00%	3.69%		
2002	2000	2.00%	3.69%		
2003	2001	2.00%	4.00%		
2004	2002	2.00% / 4.00%	4.29% / 2.53%		
2005	2003	4.00%	3.37%		
2006	2004	4.00%	3.37%		
2007	2004	4.00%	3.37%		
2008	2005	4.00%	3.37%		3.37%
2009	2005	4.00%	3.37%		3.14%
2010	2007	4.00%	3.20%		2.97%
2011	2007	4.00%	4.04%		4.04%
2012	2009	4.00%	4.34%		4.16%
2013	2009	3.00%	5.34%		5.38%
2014	2011	3.00%	5.60%		5.51%
2015	2011	3.00%	5.60%		5.58%

- Notes:
1. In June of 2004, the member rate was increased to 4% and the employer rate was decreased to 2.53%.
 2. The valuation date was June until 2004 when it was changed to December.
 3. Rate for FY 2011 was increased to the ARC. The funding policy would have resulted in 3.20%.
 4. On July 1, 2012, the member rate was decreased to 3.0% in conjunction with a restructuring of the VRS employee contribution rate.

ACTUARIAL ACCRUED LIABILITIES

Accrued liabilities for	Amounts at December 31	
	2012	2011
Present Active Members	\$ 1,057,402,350	\$ 1,017,979,938
Present Inactive Vested Members	60,434,450	51,106,867
Present Retirees and Beneficiaries	1,448,291,098	1,401,876,706
Total Actuarial Accrued Liabilities	\$2,566,127,898	\$2,470,963,511
Funding Value of Assets	1,935,292,175	1,866,952,015
Unfunded Actuarial Accrued Liability	\$ 630,835,723	\$ 604,011,496
Actuarial Funded Percent	75.42%	75.56%
Market Value Funded Percent	74.92%	70.60%

**ASSETS AND LIABILITIES
COMPARATIVE STATEMENT**

Valuation Date	Active Member Payroll	Computed Liabilities			Valuation Assets	Unfunded Accrued Liabilities	Funded %
		Retired	Other Members	Total			
(\$ in thousands)							
2/29/1980	\$ 169,924	\$ 38,288	\$ 138,708	\$ 176,996	\$ 74,173	\$ 102,823	41.9%
6/30/1985	251,691	96,588	240,351	336,939	221,656	115,283	65.8%
6/30/1986@	277,545	116,773	264,611	381,384	284,195	97,189	74.5%
6/30/1987	305,051	136,073	293,170	429,243	325,127	104,116	75.7%
6/30/1988\$#	340,946	163,959	343,523	507,482	359,069	148,413	70.8%
6/30/1989	369,575	203,394	357,569	560,963	405,317	155,646	72.3%
6/30/1990	411,970	240,122	404,751	644,873	461,450	183,423	71.6%
6/30/1991	451,873	285,618	432,109	717,727	510,825	206,902	71.2%
6/30/1992	447,474	318,072	445,498	763,570	563,644	199,926	73.8%
6/30/1993#@	450,530	344,160	564,207	908,367	717,701	190,666	79.0%
6/30/1994	480,995	374,849	597,230	972,079	766,480	205,599	78.8%
6/30/1995\$	521,044	395,249	677,287	1,072,536	839,930	232,606	78.3%
6/30/1996	531,060	436,181	694,363	1,130,544	934,571	195,973	82.7%
6/30/1997	553,709	464,345	751,022	1,215,367	1,045,412	169,955	86.0%
6/30/1998#	582,755	490,261	788,111	1,278,372	1,194,556	83,816	93.4%
6/30/1999	626,015	539,917	805,742	1,345,659	1,365,417	(19,758)	101.5%
6/30/2000	678,937	614,739	752,632	1,367,371	1,505,231	(137,860)	110.1%
6/30/2001\$	759,906	667,605	884,953	1,552,558	1,599,219	(46,661)	103.0%
6/30/2002	781,756	699,251	994,705	1,693,956	1,619,889	74,067	95.6%
6/30/2003\$	866,502	903,963	868,455	1,772,418	1,597,459	174,959	90.1%
12/31/2004#	977,817	1,083,988	851,594	1,935,582	1,643,020	292,562	84.9%
12/31/2005	1,050,217	1,130,378	892,584	2,022,962	1,718,399	304,563	84.9%
12/31/2006	1,111,828	1,176,979	928,573	2,105,552	1,818,930	286,622	86.4%
12/31/2007	1,161,432	1,221,969	964,832	2,186,801	1,924,886	261,915	88.0%
12/31/2008@	1,211,140	1,237,613	1,017,685	2,255,298	1,733,946	521,352	76.9%
12/31/2009#	1,208,093	1,314,885	1,024,984	2,339,869	1,769,540	570,329	75.6%
12/31/2010@	1,191,290	1,355,093	1,028,968	2,384,061	1,822,603	561,458	76.5%
12/31/2011\$	1,246,973	1,401,877	1,069,087	2,470,964	1,866,952	604,012	75.6%
12/31/2012	1,297,537	1,448,291	1,117,837	2,566,128	1,935,292	630,836	75.4%

@ After change in asset valuation method.

\$ After change in benefits or contribution rates (member contribution rate decrease in Fiscal 2012).

After changes in actuarial assumptions.

**ASSETS AND LIABILITIES
EXPRESSED AS PERCENTS OF ACTIVE MEMBER PAYROLL
COMPARATIVE STATEMENT**

Valuation Date	Active Member Payroll (\$ thousands)	As Percents of Active Member Payroll		
		Computed Liabilities	Valuation Assets	Unfunded Liabilities
2/29/1980	\$ 169,924	104%	44%	61%
6/30/1985	251,691	134%	88%	46%
6/30/1986@	277,545	137%	102%	35%
6/30/1987	305,051	141%	107%	34%
6/30/1988\$#	340,946	149%	105%	44%
6/30/1989	369,575	152%	110%	42%
6/30/1990	411,970	157%	112%	45%
6/30/1991	451,873	159%	113%	46%
6/30/1992	447,474	171%	126%	45%
6/30/1993#@	450,530	202%	159%	42%
6/30/1994	480,995	202%	159%	42%
6/30/1995\$	521,044	206%	161%	45%
6/30/1996	531,060	213%	176%	37%
6/30/1997	553,709	219%	189%	30%
6/30/1998#	582,755	219%	205%	14%
6/30/1999	626,015	215%	218%	(3)%
6/30/2000	678,937	201%	222%	(21)%
6/30/2001\$	759,906	204%	210%	(6)%
6/30/2002	781,756	217%	207%	10%
6/30/2003\$	866,502	205%	184%	21%
12/31/2004#	977,817	198%	168%	30%
12/31/2005	1,050,217	193%	164%	29%
12/31/2006	1,111,828	189%	164%	25%
12/31/2007	1,161,432	188%	166%	22%
12/31/2008@	1,211,140	186%	143%	43%
12/31/2009#	1,208,093	194%	146%	48%
12/31/2010@	1,191,290	200%	153%	47%
12/31/2011\$	1,246,973	198%	150%	48%
12/31/2012	1,297,537	198%	149%	49%

@ After change in asset valuation method.

\$ After changes in benefits or contribution rates (member contribution rate decrease in Fiscal 2012).

After changes in actuarial assumptions.

In an inflationary economy the value of dollars is decreasing. Since observation of only the dollar amounts of key facts can be misleading, observation of relationships among key facts tells a more relevant story of the changes in financial strength. ***The smaller the ratio of unfunded liabilities to active member payroll, the stronger the system.*** Observation of this relative index over a period of years indicates changes in strength.

SHORT CONDITION TEST

If the contributions to ERFC are level in concept and soundly executed, the System will be able to *pay all promised benefits when due -- the ultimate test of financial soundness*. Testing for level contribution rates is *the long-term test*. A *short condition test* is one means of checking a system's progress under its funding program. In a short condition test, the plan's present assets (cash and investments) are compared with:

- 1) Active member contributions on deposit;
- 2) The liabilities for future benefits to present retired lives;
- 3) The liabilities for service already rendered by active members.

In a system that has been following the discipline of level percent of payroll financing, the liabilities for active member contributions on deposit (Liability 1) and the liabilities for future benefits to present retired lives (Liability 2) will be fully covered by present assets (except in rare circumstances). In addition, the liabilities for service already rendered by active members (Liability 3) will be partially covered by the remainder of present assets. The larger the funded portion of Liability 3, the stronger the condition of the system.

Valuation Date	Aggregate Actuarial Accrued Liabilities For			Valuation Assets	Portion of Accrued Liabilities Covered by Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
	Member Contributions	Retirees and Beneficiaries	Members (Employer Financed Portion)				
	(... \$1,000s ...)						
6/30/1993#@	\$ 115,312	\$ 344,160	\$448,895	\$ 717,701	100%	100%	58%
6/30/1994	129,428	374,849	467,802	766,480	100%	100%	56%
6/30/1995\$	143,150	395,249	534,137	839,930	100%	100%	56%
6/30/1996	146,228	436,181	548,135	934,571	100%	100%	64%
6/30/1997	144,063	464,345	606,959	1,045,412	100%	100%	72%
6/30/1998#	149,220	490,261	638,891	1,194,556	100%	100%	87%
6/30/1999	154,582	539,917	651,160	1,365,417	100%	100%	103%
6/30/2000	157,148	614,739	595,484	1,505,231	100%	100%	123%
6/30/2001\$	178,564	667,605	706,389	1,599,219	100%	100%	107%
6/30/2002	170,849	699,251	823,856	1,619,889	100%	100%	91%
6/30/2003\$	176,648	903,963	691,807	1,597,459	100%	100%	75%
12/31/2004#	227,725	1,083,988	623,869	1,643,020	100%	100%	53%
12/31/2005	257,142	1,130,378	635,442	1,718,399	100%	100%	52%
12/31/2006	239,780	1,176,979	688,793	1,818,930	100%	100%	58%
12/31/2007	269,404	1,221,969	695,428	1,924,886	100%	100%	62%
12/31/2008@	302,910	1,237,613	714,775	1,733,946	100%	100%	27%
12/31/2009#	342,663	1,314,885	682,321	1,769,540	100%	100%	16%
12/31/2010@	374,086	1,355,093	654,882	1,822,603	100%	100%	14%
12/31/2011\$	402,847	1,401,877	666,240	1,866,952	100%	100%	9%
12/31/2012	426,609	1,448,291	691,228	1,935,292	100%	100%	9%

@ After change in asset valuation method.

\$ After change in benefits or contribution rates (member contribution rate decrease in Fiscal 2012).

After changes in actuarial assumptions.

**CHANGE IN UNFUNDED ACCRUED LIABILITIES
DURING THE YEAR ENDING DECEMBER 31, 2012
(\$ IN MILLIONS)**

	As of December 31	
	2012	2011
1. UAAL* at start of year	\$ 604.0	\$ 561.5
2. Normal Cost (5.76% of payroll for 2012)	74.7	73.7
3. Member and employer contributions	103.9	97.4
4. Interest accrual	44.2	41.2
5. Expected UAAL before changes: (1. + 2. - 3. + 4.)	619.0	579.0
6. Change from non-recurring activities and benefit changes	4.0	9.3
7. Expected UAAL after changes: (5. + 6.)	623.0	588.3
8. Actual UAAL at end of year	630.8	604.0
9. Gain (loss): (7. - 8.)	\$ (7.8)	\$(15.7)
Gain (loss) as percent of actuarial accrued liabilities at start of year	(0.3)%	0.7%

* *Unfunded actuarial accrued liability.*

The above schedule estimates the total gain or loss on the Retirement System activities for the year. The next page shows the breakdown of the total gain or loss by Source. Risk areas related to Assumptions include Economic Risks and Demographic Risks. Economic Risks relate to Pay Increases and Investment Return. Demographic Risks relate to rates of retirement, death, disability, and other terminations. Risks not directly related to assumptions include granted additional service credit, data adjustments, timing of financial transactions, etc.

**CHANGE IN UNFUNDED ACCRUED LIABILITIES
GAINS AND LOSSES BY RISK AREA
DURING THE YEAR ENDING DECEMBER 31, 2012**

Type of Risk Area	Gain (Loss) in Period			
	\$ in millions			Percent of Liabilities
	<i>ERFC</i>	<i>ERFC</i> 2001	Totals	
Risks Related to Assumptions				
Economic Risk Areas:				
Pay Increases	\$7.2	\$5.1	\$ 12.3	0.5%
Investment Return			(10.8)	(0.4)%
Demographic Risk Areas:				
Full and Reduced Service Retirements	4.4	0.2	4.6	0.2%
Vested Deferred Retirements	(2.6)	1.7	(0.9)	0.0%
Ordinary Death Benefits	0.2	0.0	0.2	0.0%
Service-Connected Death Benefits	0.0	0.0	0.0	0.0%
Ordinary Disability Benefits	(0.2)	(0.2)	(0.4)	0.0%
Service-Connected Disability Benefits	(0.1)	0.0	(0.1)	0.0%
Terminated with Refund	(1.3)	(1.2)	(2.5)	(0.1)%
Post-Retirement Mortality	(1.1)	(0.1)	(1.2)	0.0%
Data Adjustments and Miscellaneous			(9.0)	(0.4) %
Total Gain (or Loss) During Period			(7.8)	(0.3)%
Beginning of Year Accrued Liabilities			2,471.0	100.0%

EXPERIENCE GAINS & LOSSES BY RISK AREA
COMPARATIVE STATEMENT
(\$ IN MILLIONS)

Experience Period	Pay Increases	Investment Return	Retirement	Disability & Death-In Service	Other Separations	Other ^{&}	Total Gain (Loss)	
							\$	Percent of Liabilities
1991-1992	\$21.2	\$21.7	\$(28.4)	\$(6.0)	\$ (4.0)	\$2.3	\$ 6.8	0.9 %
1992-1993	15.1	34.6	(16.3)	(1.0)	(6.5)	(17.3)	8.6	1.1 %
1993-1994#	(4.1)	4.7	(1.6)	(3.7)	3.5	(15.2)	(16.4)	(1.8)%
1994-1995	(9.7)	25.2	5.1	(1.4)	(4.4)	(5.5)	9.3	0.9 %
1995-1996	(7.7)	45.4	4.1	(1.8)	(5.6)	4.3	38.7	3.6 %
1996-1997	9.9	53.5	2.9	(1.7)	(4.5)	(8.7)	51.4	4.5 %
1997-1998#	(2.6)	81.1	5.9	(0.5)	6.4	(13.9)	76.4	6.3 %
1998-1999*	(8.4)	95.4	0.3	(1.0)	6.5	(3.8)	89.0	7.0 %
1999-2000	(17.6)	62.3	3.8	(1.2)	12.9	38.9	99.1	7.4 %
2000-2001	(9.1)	17.6	(0.3)	(1.0)	13.0	(19.5)	0.7	0.0 %
2001-2002	3.0	(50.4)	3.5	(1.1)	2.6	(29.9)	(72.3)	(4.7)%
2002-2003	18.5	(92.5)	11.0	(0.3)	4.0	(23.3)	(82.6)	(4.9)%
2003-2004#@								
2005	(7.1)	1.9	1.0	0.1	0.0	(3.2)	(7.3)	(0.4)%
2006	(4.7)	23.6	2.0	0.0	(0.8)	2.6	22.7	1.1 %
2007	10.0	25.1	1.9	(0.2)	(2.2)	(7.2)	27.4	1.4 %
2008	4.1	(277.5)	5.2	(0.4)	(4.0)	13.5	(259.1)	(11.8)%
2009	45.0	(34.6)	8.8	(0.8)	(10.0)	(11.6)	(3.2)	(0.1)%
2010#	53.1	(16.9)	5.2	0.2	(5.3)	(4.2)	32.1	1.4 %
2011	18.8	(30.6)	5.3	(0.2)	(4.2)	(4.8)	(15.7)	(0.7)%
2012	12.3	(10.8)	4.6	(0.3)	(3.4)	(10.2)	(7.8)	(0.3)%

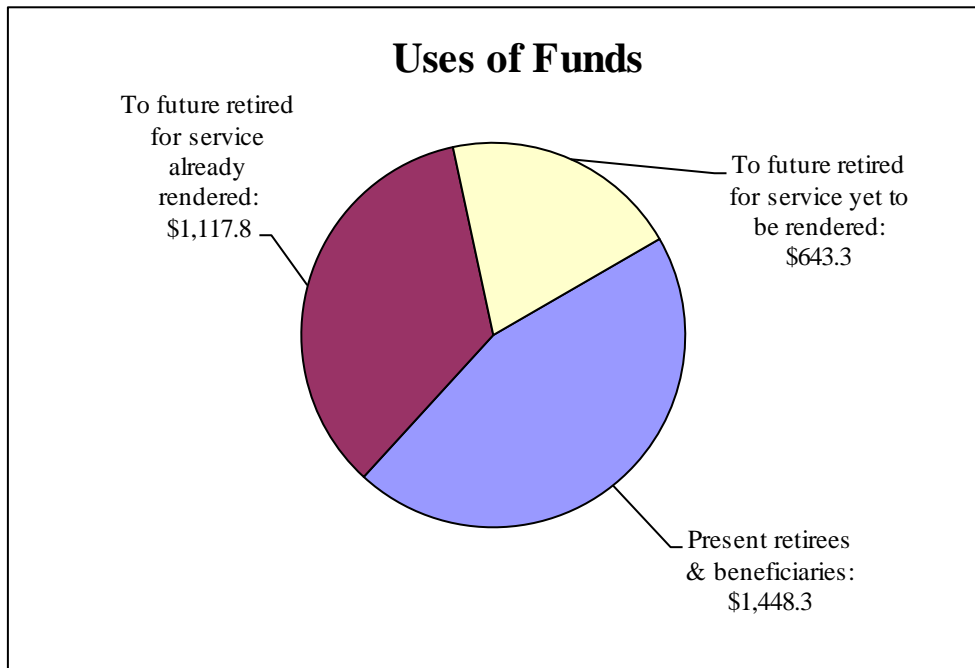
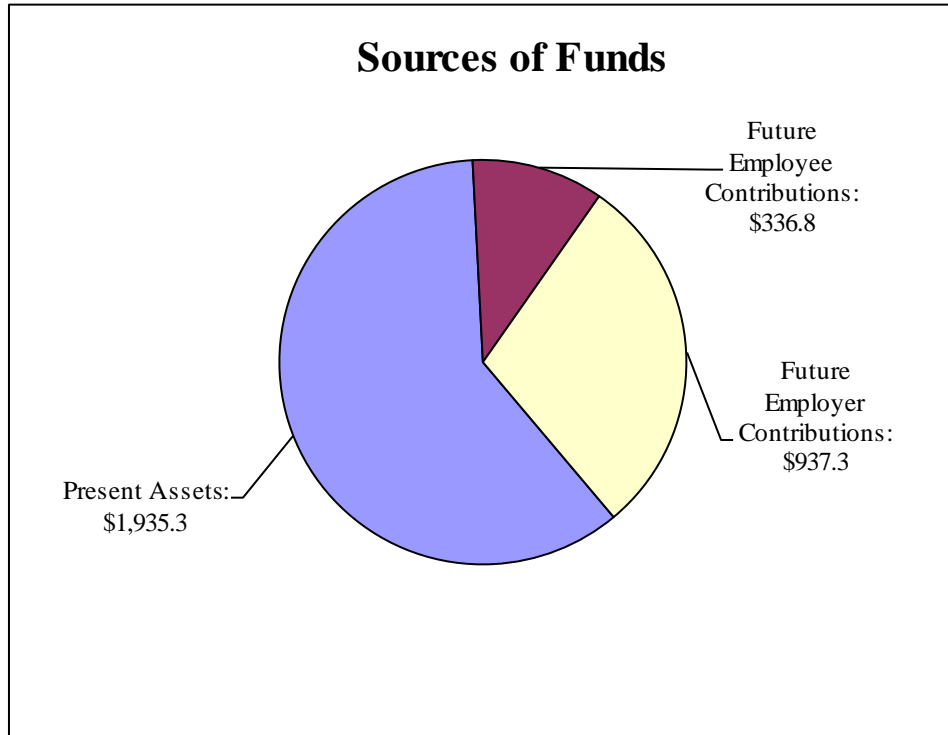
Experience Study.

* Updated Gain Formulas.

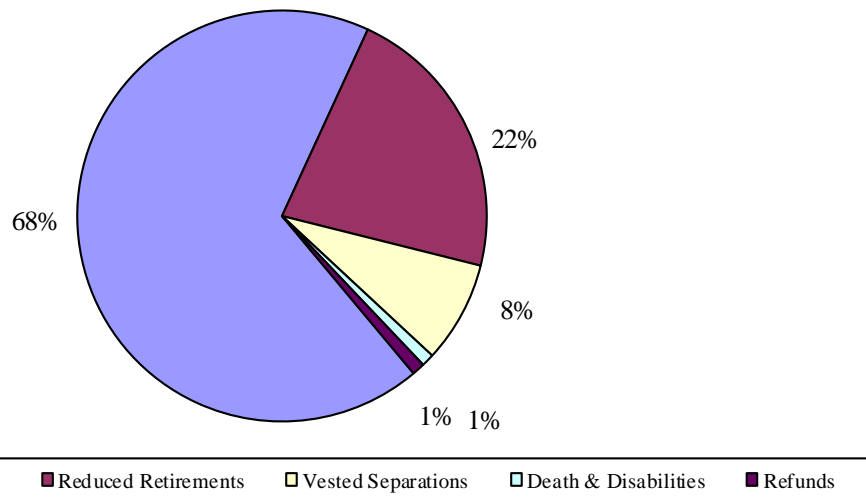
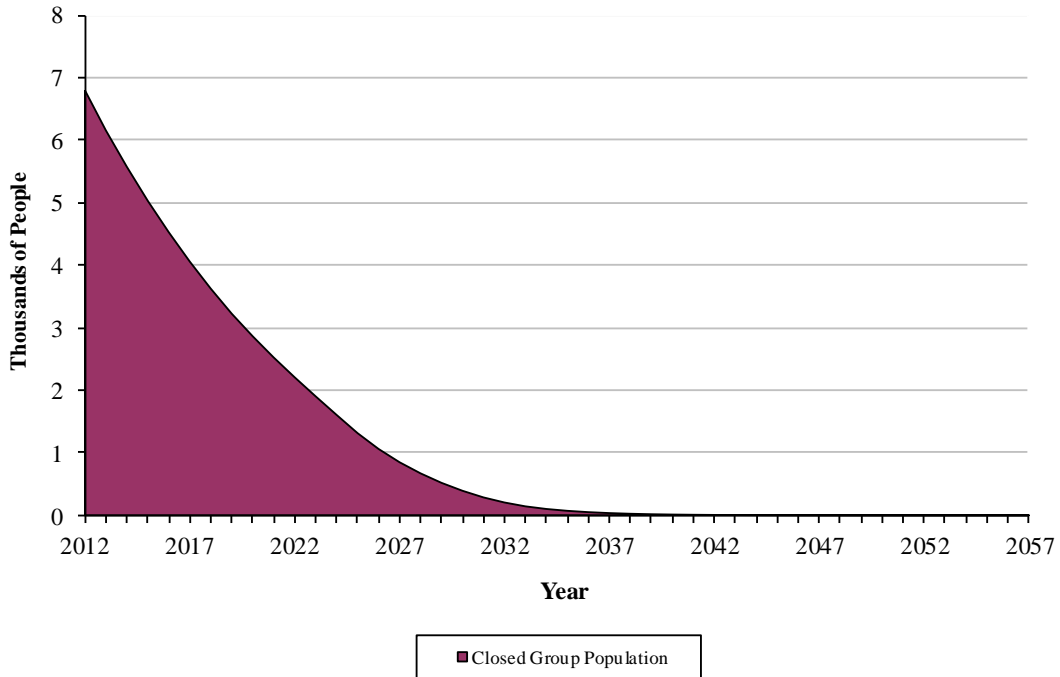
@ Gain (Loss) Analysis not performed.

& Includes post-retirement mortality.

**FINANCING \$3,209.4 MILLION OF BENEFIT PROMISES
DECEMBER 31, 2012
(\$ IN MILLIONS)**

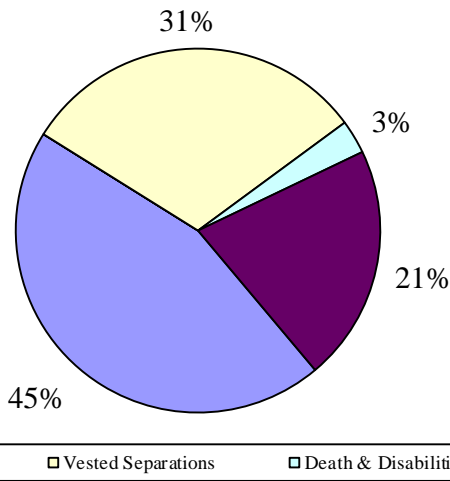
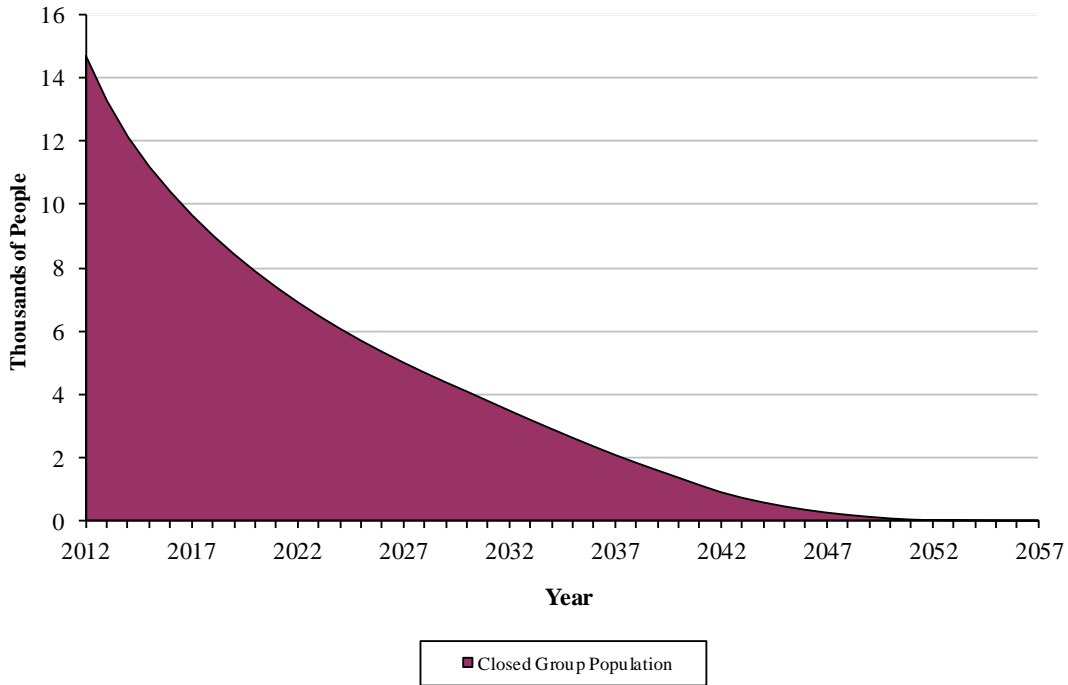


EXPECTED DEVELOPMENT OF PRESENT POPULATION – ERFC DECEMBER 31, 2012



The charts show the expected future development of the present population in simplified terms. ERFC presently covers 6,801 active members. Eventually, 1% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. Approximately 98% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by separating from service without withdrawing contributions. 1% of the present population is expected to become eligible for death-in-service or disability benefits. Within 7 years, over half of the current membership will have left the group.

EXPECTED DEVELOPMENT OF PRESENT POPULATION – ERFC 2001 DECEMBER 31, 2012



The charts show the expected future development of the present population in simplified terms. ERFC 2001 presently covers 14,718 active members. Eventually, 21% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. Approximately 76% of the present population is expected to receive monthly retirement benefits either by retiring directly from active service, or by separating from service without withdrawing contributions. 3% of the present population is expected to become eligible for death-in-service or disability benefits. Within 10 years, over half of the current membership will have left the group. The proportion of new hires in this plan will increase more rapidly than normal because the ERFC legacy plan is closed to new hires.

SECTION C

SUMMARY OF BENEFITS

SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2012
MEMBERS HIRED AFTER JULY 1, 1988 BUT BEFORE JULY 1, 2001
ERFC

1. **Service Retirement Eligibility.** 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.
2. **Reduced Service Retirement Eligibility.** 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.
3. **Deferred Retirement 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.
4. **Death-In-Service Benefit 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.
5. **Disability Retirement Eligibility.** 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.
6. **Final Average Compensation (FAC).** A member's final average compensation is the average of the 3 highest consecutive years of salary during eligible employment.
7. **Service Retirement Amount.** 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.

SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2012
MEMBERS HIRED AFTER JULY 1, 1988 BUT BEFORE JULY 1, 2001
ERFC

Service Retirement Amount (Continued)

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 1.00 percent of the FAC multiplied by years of credited service.

8. **Reduced Service Retirement Amount After 25 Years Service.** Service Retirement amount reduced to reflect retirement age younger than age 55.
9. **Reduced Service Retirement Amount After 5-24 Years 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.
10. **Deferred Retirement Amount.** Calculated in the same manner as reduced service retirement.
11. **Death-In-Service Benefit 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.

SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2012
MEMBERS HIRED AFTER JULY 1, 1988 BUT BEFORE JULY 1, 2001
ERFC

12. **Disability Retirement Amount.** 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.
13. **Post-Retirement Increases.** The amount of the monthly benefit is adjusted each March 31, by 3% compounded annually, beginning with the March 31 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).
14. **Member Contributions.** Effective July 1, 2012, members contribute 3% of their salaries. Interest credits are 5% annually. If a member leaves covered employment before becoming eligible to retire, accumulated contributions are returned upon request.
15. **Lifetime Level Benefit (for Retirements after July 1, 2004).** Members are eligible for a lifetime level benefit (LLB) that is calculated by determining the annuitized value of the greater of their accumulated contribution balance or the present value of the currently provided benefit.
16. **Optional Forms of Payment.**
- 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. Actuarial equivalent factors are described on page G-15.

SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2012
ALTERNATE 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 7/1/88 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:

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; and

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

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.

SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2012
MEMBERS HIRED JULY 1, 2001 OR LATER
ERFC 2001

1. **Service Retirement Eligibility.** 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.
2. **Deferred Retirement Eligibility.** Any member with 5 or more years of credited service that 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.
3. **Death Benefit Eligibility.** Any member with 5 or more years of credited service that dies before beginning to receive a pension will have benefits payable to the named beneficiary.
4. **Final Average Compensation (FAC).** A member's final average compensation is the average of the 3 highest years of salary during eligible employment.
5. **Service Retirement Pension.** 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.
6. **Deferred Retirement Pension.** 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.

SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2012
MEMBERS HIRED JULY 1, 2001 OR LATER
ERFC 2001

7. **Survivor Death Benefit.** 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).
8. **Cost-of-Living Adjustments.** The amount of the monthly benefit is adjusted each March 31, by 3% compounded annually, beginning with the March 31 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).
9. **Members' Contributions.** Effective July 1, 2012, members contribute 3% of their salaries. Interest credits are 5% annually. If a member leaves covered employment before becoming eligible to retire, accumulated contributions are returned upon request.
10. **Optional Methods of Payment.** 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.

**SAMPLE BENEFIT COMPUTATION
FOR *ERFC* MEMBER RETIRING JUNE 30, 2012**

Data:

A.	<u>7/1/1957</u>	Date of Birth
B.	<u>7/1/2012</u>	Effective Date
C.	<u>7/1/1985</u>	Membership Date
D.	<u>27.00</u>	ERFC Credited Service
E.	<u>27.00</u>	VRS Creditable Service
F.	<u>55.00</u>	Age
G.	<u>Service</u>	Retirement Type
H.	<u>\$60,000.00</u>	3-Year Average Salary
I.	<u>\$60,000.00</u>	5-Year Average Salary

***ERFC* Monthly Benefit Calculation**

Lifetime Portion of Full Service Benefit

J. <i>ERFC</i> Formula Benefit: $1.85\% \times 27 \text{ yrs.} \times \$60,000 =$	\$ 29,970.00
K. minus VRS Adjustment of: $1.65\% \times 27 \text{ yrs.} \times (\$60,000 - \$1,200) \times 82\% =$ (82% is the VRS Early Service Retirement Reduction Factor for 2 years prior to the earlier of age 65 or 30 years of service)	<u>21,480.23</u>
L. Sub Total	8,489.77
M. plus additional 3% benefit adjustment	<u>254.69</u>
N. Total of Lifetime Portion	8,744.47

Additional Temporary Benefit until age SSRA (Social Security Retirement Age)

O. Temporary Benefit Formula: $1\% \times 27 \text{ yrs.} \times \$60,000 =$	16,200.00
P. plus additional 3% benefit adjustment	<u>486.00</u>
Q. Total of Additional Temporary Benefit	16,686.00
R. Monthly benefit effective 06/30/2012 at age 55 payable until SSRA, $(N + Q)/12 =$	\$ 2,119.21
S. Monthly benefit effective 07/01/2023 at SSRA payable for life, $N/12 =$	\$ 728.71

The above computation does not reflect the alternative “guarantee” benefit which this member might elect. Members are eligible for a lifetime level benefit (LLB) that is calculated by determining the annuitized value of the greater of their accumulated contribution balance or the present value of the currently provided benefit.

**SAMPLE BENEFIT COMPUTATION
FOR *ERFC 2001* MEMBER**

Data:

A.	<u>07/01/1970</u>	Date of Birth
B.	<u>07/01/2030</u>	Effective Date
C.	<u>07/01/2001</u>	Membership Date
D.	<u>29.00</u>	ERFC Credited Service
E.	<u>60.00</u>	Age
F.	<u>Service</u>	Retirement Type
G.	<u>\$60,000.00</u>	3 -Year Average Salary

***ERFC 2001* Monthly Benefit Calculation**

Lifetime Monthly Benefit

ERFC 2001 Formula Benefit: $0.80\% \times 29 \text{ yrs.} \times \$60,000 / 12 =$ \$ 1,160.00

SECTION D

FINANCIAL INFORMATION

SUMMARY OF FINANCIAL INFORMATION
DECEMBER 31, 2012

Revenues and Expenditures

	December 31	
	2012	2011
REVENUES:		
a. Member Contributions	\$ 44,699,941	\$ 47,880,636
b. Employer Contributions	59,160,799	49,499,117
c. Donated Fixed Assets	0	0
d. Investment Return		
1. Interest and Dividends	46,860,897	41,021,778
2. Net Appreciation	201,411,066	(49,539,117)
3. Investment Expense	(10,361,827)	(9,115,850)
4. Net Securities Lending	393,178	250,151
5. Real Estate	2,122,206	2,276,848
6. Miscellaneous	57,408	110,061
7. Total Investment Return	240,482,928	(14,996,129)
e. Total Revenues	344,343,668	82,383,624
EXPENDITURES:		
a. Refunds of Member Contributions	4,272,444	4,197,966
b. Retirement Benefits Paid	158,222,265	152,703,450
c. Administrative Expense	3,938,416	3,422,200
d. Total Expenditures	166,433,125	160,323,616
RESERVE INCREASE:		
Total Revenues Minus Total Expenditures	\$177,910,543	\$ (77,939,992)

Market Value of Assets

	December 31	
	2012	2011
Invested Assets		
Bonds	\$ 154,177,044	\$ 144,630,516
Stocks		
a. Common	555,660,189	531,773,566
b. Preferred	6,911,740	6,141,627
Real Estate	151,167,727	140,212,932
Global Asset Allocation	287,893,090	271,024,679
Hedge Fund of Funds	144,682,750	132,259,441
Private Equity	21,054,072	12,990,487
Commingled Funds	563,430,919	468,116,753
Total Invested Assets	1,884,977,531	1,707,150,001
Short-term Investments and Cash	69,592,193	116,370,839
Receivables and Pre-Paid Expenses	71,086,273	48,692,516
Other Assets (furniture and equipment)	113,821	113,821
Total Assets	2,025,769,818	1,872,327,177
Liabilities	103,262,187	127,730,089
Net Assets	\$1,922,507,631	\$1,744,597,088

PORTFOLIO COMPOSITION AT MARKET VALUE

The Market Value of the Portfolio was reported to the Actuary as follows:

	Year Ended December 31			
	2012		2011	
	Value	% of Total	Value	% of Total
Bonds	\$ 154,177,044	8.0 %	\$ 144,630,516	8.3 %
Stocks				
a. Common	555,660,189	28.9 %	531,773,566	30.5 %
b. Preferred	6,911,740	0.4 %	6,141,627	0.4 %
Real Estate	151,167,727	7.9 %	140,212,932	8.0 %
Commingled Funds	563,430,919	29.3 %	468,116,753	26.8 %
Hedge Fund of Funds	144,682,750	7.5 %	132,259,441	7.6 %
Private Equity	21,054,072	1.1 %	12,990,487	0.7 %
Global Asset Allocation / Better Beta	287,893,090	15.0 %	271,024,679	15.5 %
Net Short-term Investments and Cash	(33,669,994)	(1.8)%	(11,384,042)	(0.6)%
Receivables, Pre-Paid Expenses and Other	71,200,094	3.7 %	48,831,129	2.8 %
Total Assets	\$1,922,507,631	100.0 %	\$1,744,597,088	100.0 %

In performing an actuarial valuation, values must be determined for the assets held by the system on the valuation date. This value may be:

- Cost (or amortized costs);
- Current market value; or
- A value produced by a smoothing formula which recognizes the long-term validity of market value without overreacting to the marketplace's short-term moods.

The value used in the actuarial valuation may thus differ from the value used in the system's financial statements. This does not mean that one is "right" and the other is "wrong;" each is appropriate for the purpose for which it is used.

A smoothing formula has been in use for ERFC valuations since 1986, which in its present form is illustrated on page D-4. In the December 31, 2005 valuation, a new requirement was instituted to prevent unreasonably large differences between the market value and the funding value of assets. Currently, the recognized assets must always be between 75% and 125% of the market value (see Page D-3).

DEVELOPMENT OF FUNDING VALUE OF RETIREMENT SYSTEM ASSETS

Year Ended December 31:	2012#	2013	2014	2015	2016
A. Funding Value Beginning of Year	\$1,866,952,015	\$1,935,292,175			
B. Market Value End of Year	1,922,507,631				
C. Market Value Beginning of Year	1,744,597,088				
D. Non-Investment Net Cash Flow	(58,633,969)				
E. Investment Return Assumed Rate:	7.5%				
1. Market Total: B-C-D	236,544,512				
2. Amount for Immediate Recognition	137,822,627				
3. Amount for Phased-in Recognition: (E1-E2)	98,721,885				
F. Phased-in Recognition of Investment Return:					
1. Current year: 0.20 x E3	19,744,377				
2. First Prior Year	(30,576,304)	19,744,377			
3. Second Prior Year	(16,571)	(30,576,304)	\$ 19,744,377		
4. Third Prior Year	0	(16,571)	(30,576,304)	\$ 19,744,377	
5. Fourth Prior year	0	0	(16,571)	(30,576,302)	\$19,744,377
6. Total Phased-In	(10,848,498)	(10,848,498)	(10,848,498)	(10,831,925)	19,744,377
G. Funding Value End of Year:					
G1. Preliminary Funding Value End of Year: A+D+E2+F6	1,935,292,175				
G2. Upper Corridor Limit: 125% x B	2,403,134,539				
G3. Lower Corridor Limit: 75% x B	1,441,880,723				
G4. Funding Value End of Year	1,935,292,175				
H. Actual/Projected Difference Between Market Value and Funding Value	(12,784,544)	(1,936,046)	8,912,452	19,744,377	0
I. Market Rate of Return	13.8%				
J. Ratio of Funding Value to Market Value	100.7%				

Reflects collapsing of bases for future gains and losses implemented in 2010 valuation.

The Funding Value of Assets recognizes assumed investment return (line E2) fully each year. Differences between actual and assumed investment return (line E3) are phased in over a closed 5-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than Market Value. The Funding Value of Assets is *unbiased* with respect to Market Value. If assumed rates are exactly realized for 4 consecutive years, Funding Value will become equal to Market Value.

FUNDING VALUE HISTORY

Year Ended December 31:	2008	2009	2010	2011#
A. Funding Value Beginning of Year	\$1,924,885,815	\$1,733,946,104	\$1,769,539,999	\$1,822,603,363
B. Market Value End of Year	1,387,156,883	1,654,434,106	1,822,537,079	1,744,597,088
C. Market Value Beginning of Year	1,999,905,552	1,387,156,883	1,654,434,106	1,822,537,079
D. Non-Investment Net Cash Flow	(55,764,873)	(57,646,288)	(60,475,118)	(59,521,663)
E. Investment Return Assumed Rate:	7.5%	7.5%	7.5%	7.5%
E1. Market Total: B-C-D	(556,983,796)	324,923,511	228,578,091	(18,418,328)
E2. Amount for Immediate Recognition	142,275,253	127,884,222	130,447,683	134,463,190
E3. Amount for Phased-in Recognition: (E1 - E2)	(699,259,049)	197,039,289	98,130,408	(152,881,518)
F. Phased-in Recognition of Investment Return:				
F1. Current year: 0.20 x E3	(139,851,810)	39,407,858	19,626,082	(30,576,304)
F2. First Prior Year	1,550,155	(99,172,171)	39,407,858	(16,571)
F3. Second Prior Year	21,678,875	1,550,155	(99,172,171)	0
F4. Third Prior Year	1,891,244	21,678,875	1,550,155	0
F5. Fourth Prior year	0	1,891,244	21,678,875	0
F6. Total Recognized Investment Gain or Loss	(114,731,536)	(34,644,039)	(16,909,201)	(30,592,875)
G. Funding Value End of Year:				
G1. Preliminary Funding Value End of Year: A+D+E2+F6	1,896,664,659	1,769,539,999	1,822,603,363	1,866,952,015
G2. Upper Corridor Limit: 125% x B	1,733,946,104	2,068,042,633	2,278,171,349	2,180,746,360
G3. Lower Corridor Limit: 75% x B	1,040,367,662	1,240,825,580	1,366,902,809	1,308,447,816
G4. Funding Value End of Year	1,733,946,104	1,769,539,999	1,822,603,363	1,866,952,015
H. Actual/Projected Difference Between Market Value and Funding Value	(346,789,221)	(115,105,893)	(66,284)	(122,354,927)
I. Market Rate of Return	(28.2)%	23.9%	14.1%	(1.0)%
J. Ratio of Funding Value to Market Value	125.0%	107.0%	100.0%	107.0%

Reflects collapsing of bases for future gains and losses implemented in 2010 valuation.

SECTION E

COVERED MEMBER DATA

ERFC MEMBERS
WOMEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2012
BY ATTAINED AGE AND YEARS OF SERVICE

Age Group	Years of Service to Valuation Date							Totals		Average
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Salary	
30-34	1	3	32					36	\$ 2,203,444	\$61,207
35-39	4	38	325	43				410	28,506,312	69,528
40-44	9	72	313	277	26	1		698	51,864,358	74,304
45-49	8	42	270	193	162	37	1	713	54,009,845	75,750
50-54	4	34	302	228	206	148	20	942	70,621,599	74,970
55-59	3	20	407	303	252	125	51	1,161	84,896,050	73,123
60		2	87	61	57	26	11	244	17,611,094	72,177
61	2	5	84	55	36	27	13	222	15,966,413	71,921
62		1	59	70	52	16	10	208	15,525,953	74,644
63			57	58	40	26	13	194	14,632,480	75,425
64		1	46	52	40	16	6	161	11,182,603	69,457
65	1	1	40	38	37	13	4	134	9,489,504	70,817
66		2	24	30	30	9	4	99	7,036,436	71,075
67			5	16	17	6	1	45	3,632,934	80,732
68			15	7	9	5	2	38	2,765,867	72,786
69			5	6	7	3	2	23	1,578,824	68,645
70			7	8	10	4	3	32	2,273,952	71,061
71				1	4	3	3	11	708,183	64,380
72			1	4	2		3	10	648,769	64,877
73			2	3				5	237,552	47,510
74			1	1		1		3	157,440	52,480
75 & Over				1	3	2	2	8	490,384	61,298
Totals	32	221	2,082	1,455	990	468	149	5,397	\$396,039,996	\$73,382

While not used in the financial computations the following group averages are computed and shown because of their general interest.

Age: 52.9 years

Service: 17.4 years

Annual Pay: \$73,382

ERFC MEMBERS
MEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2012
BY ATTAINED AGE AND YEARS OF SERVICE

Age Group	Years of Service to Valuation Date							Totals		Average
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Salary	
30-34		1	3					4	\$ 238,753	\$59,688
35-39		5	114	8				127	9,631,755	75,841
40-44	1	7	139	150	11			308	25,246,815	81,970
45-49	1	2	94	119	60	5		281	22,731,607	80,895
50-54		2	66	80	62	56	3	269	23,179,428	86,169
55-59			62	41	35	44	18	200	17,889,577	89,448
60			12	9	11	7	3	42	3,870,279	92,150
61			11	9	5	3	1	29	2,381,741	82,129
62			4	9	4	2	5	24	1,965,634	81,901
63			12	7	6	3	2	30	2,544,438	84,815
64			6	6	4	4	1	21	1,826,411	86,972
65		1	7	4	4			16	1,363,550	85,222
66			6	3	1			10	780,161	78,016
67			5	5	2			12	1,066,446	88,871
68			3	2	3			8	698,848	87,356
69			2	3	1	1		7	571,072	81,582
70			6	1	2			9	760,507	84,501
71				1				1	89,127	89,127
72			2					2	103,148	51,574
73			1	1		1		3	217,277	72,426
75 & Over			1					1	35,635	35,635
Totals	2	18	556	458	211	126	33	1,404	\$117,192,209	\$83,470

While not used in the financial computations the following group averages are computed and shown because of their general interest.

Age: 49.9 years
Service: 17.6 years
Annual Pay: \$83,470

ERFC 2001 MEMBERS
WOMEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2012
BY ATTAINED AGE AND YEARS OF SERVICE

Age Group	Years of Service to Valuation Date							Totals		Average
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Salary	
15-19	1							1	\$ 34,769	\$34,769
20-24	623							623	26,729,912	42,905
25-29	2,116	307						2,423	117,304,196	48,413
30-34	1,050	1,196	140					2,386	128,985,735	54,059
35-39	504	586	180					1,270	73,522,820	57,892
40-44	629	480	124					1,233	67,543,808	54,780
45-49	572	480	111					1,163	58,904,737	50,649
50-54	463	604	187					1,254	62,010,154	49,450
55-59	283	467	216					966	53,004,902	54,870
60	30	66	30					126	6,632,072	52,635
61	20	69	29					118	6,803,814	57,659
62	20	47	25					92	5,130,847	55,770
63	22	48	23					93	5,278,371	56,757
64	18	40	22					80	4,548,239	56,853
65	8	28	10					46	2,400,825	52,192
66	7	15	9					31	2,001,269	64,557
67	4	11	4					19	1,078,969	56,788
68	5	12	3					20	970,361	48,518
69	1	7	1					9	628,414	69,824
70	2	4	2					8	345,368	43,171
71	2	4						6	287,847	47,975
75 & Over		1						1	31,248	31,248
Totals	6,380	4,472	1,116					11,968	\$624,178,677	\$52,154

While not used in the financial computations the following group averages are computed and shown because of their general interest.

Age: 39.3 years
Service: 4.8 years
Annual Pay: \$52,154

ERFC 2001 MEMBERS
MEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2012
BY ATTAINED AGE AND YEARS OF SERVICE

Age Group	Years of Service to Valuation Date							Totals		Average
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Salary	
15-19	1							1	\$ 19,912	\$19,912
20-24	91							91	3,707,070	40,737
25-29	384	53						437	20,255,435	46,351
30-34	256	319	36					611	33,257,715	54,432
35-39	144	202	84					430	25,961,440	60,375
40-44	106	154	67					327	21,042,537	64,350
45-49	77	121	40					238	16,032,370	67,363
50-54	78	117	30					225	14,728,493	65,460
55-59	69	78	37					184	11,990,643	65,167
60	7	22	2					31	2,145,980	69,225
61	10	12	3					25	1,454,578	58,183
62	8	13	6					27	1,872,481	69,351
63	10	17	1					28	1,544,371	55,156
64	6	13	4					23	1,804,957	78,476
65	4	8	6					18	1,045,430	58,079
66	3	14	1					18	1,204,408	66,912
67	3	2	1					6	352,245	58,708
68	4	3	1					8	452,141	56,518
69		4	2					6	374,693	62,449
70		3						3	185,583	61,861
71		4						4	230,232	57,558
72	1	2	1					4	218,279	54,570
74			1					1	84,939	84,939
75 & Over		3	1					4	159,693	39,923
Totals	1,262	1,164	324					2,750	\$160,125,625	\$58,228

While not used in the financial computations the following group averages are computed and shown because of their general interest.

Age: 39.9 years
Service: 5.3 years
Annual Pay: \$58,228

ALL ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2012
BY ATTAINED AGE AND YEARS OF SERVICE

Age Group	Years of Service to Valuation Date							Totals		Average
	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Salary	
15-19	2							2	\$ 54,681	\$ 27,341
20-24	714							714	30,436,982	42,629
25-29	2,500	360						2,860	137,559,631	48,098
30-34	1,307	1,519	211					3,037	164,685,647	54,226
35-39	652	831	703	51				2,237	137,622,327	61,521
40-44	745	713	643	427	37	1		2,566	165,697,518	64,574
45-49	658	645	515	312	222	42	1	2,395	151,678,559	63,331
50-54	545	757	585	308	268	204	23	2,690	170,539,674	63,398
55-59	355	565	722	344	287	169	69	2,511	167,781,172	66,818
60	37	90	131	70	68	33	14	443	30,259,425	68,306
61	32	86	127	64	41	30	14	394	26,606,546	67,529
62	28	61	94	79	56	18	15	351	24,494,915	69,786
63	32	65	93	65	46	29	15	345	23,999,660	69,564
64	24	54	78	58	44	20	7	285	19,362,210	67,938
65	13	38	63	42	41	13	4	214	14,299,309	66,819
66	10	31	40	33	31	9	4	158	11,022,274	69,761
67	7	13	15	21	19	6	1	82	6,130,594	74,763
68	9	15	22	9	12	5	2	74	4,887,217	66,043
69	1	11	10	9	8	4	2	45	3,153,003	70,067
70	2	7	15	9	12	4	3	52	3,565,410	68,566
71	2	8		2	4	3	3	22	1,315,389	59,790
72	1	2	4	4	2		3	16	970,196	60,637
73			3	4		1		8	454,829	56,854
74			2	1		1		4	242,379	60,595
75 & Over		4	2	1	3	2	2	14	716,960	51,211
Totals	7,676	5,875	4,078	1,913	1,201	594	182	21,519	\$1,297,536,507	\$60,297

While not used in the financial computations the following group averages are computed and shown because of their general interest.

Age: 43.5 years

Service: 8.8 years

Annual Pay: \$60,297

ACTIVE MEMBERS BY YEARS OF SERVICE
DECEMBER 31, 2012

Service Years	Number of Members			Annual Pays	
	Males	Females	Total	Total	Average
0	356	1,708	2,064	\$ 94,200,970	\$45,640
1	335	1,687	2,022	95,842,062	47,400
2	232	1,225	1,457	71,219,569	48,881
3	158	842	1,000	49,719,119	49,719
4	183	950	1,133	59,500,286	52,516
5	218	1,086	1,304	68,870,989	52,815
6	240	1,002	1,242	69,369,427	55,853
7	266	999	1,265	72,506,029	57,317
8	254	879	1,133	67,500,273	59,577
9	204	727	931	58,724,651	63,077
10	182	628	810	51,365,521	63,414
11	186	764	950	63,308,721	66,641
12	197	684	881	58,398,492	66,287
13	189	601	790	54,389,674	68,848
14	126	521	647	45,242,468	69,927
15	104	368	472	34,302,473	72,675
16	80	332	412	31,435,065	76,299
17	84	225	309	24,169,092	78,217
18	96	276	372	29,636,802	79,669
19	94	254	348	27,729,713	79,683
20	44	197	241	19,536,961	81,066
21	34	179	213	17,523,447	82,270
22	55	233	288	24,295,375	84,359
23	39	174	213	18,043,745	84,712
24	39	207	246	20,666,731	84,011
25	22	114	136	11,862,504	87,224
26	32	110	142	12,964,111	91,297
27	31	114	145	13,239,699	91,308
28	23	71	94	8,172,224	86,939
29	18	59	77	6,968,259	90,497
30 & Up	33	149	182	16,832,055	92,484
Totals	4,154	17,365	21,519	\$1,297,536,507	\$60,297

PERSONS IN VALUATIONS - COMPARATIVE STATEMENT

Active Members

Valuation Date	Number			Average Pay	Annual Increase In Average Pay		Price Inflation (CPI-U)
	ERFC	ERFC 2001	Total		Last Year	Last 5 Years	Last Year
2/28/1974	7,429		7,429	\$13,087			
2/28/1975	8,075		8,075	13,693			
2/28/1976	8,609		8,609	15,929			
2/29/1980	8,990		8,990	18,901			
6/30/1983	9,359		9,359	24,104			
6/30/1985	9,596		9,596	26,229			
6/30/1986	10,084		10,084	27,523	4.9 %		1.8 %
6/30/1987	10,560		10,560	28,887	5.0 %		3.7 %
6/30/1988	10,727		10,727	31,784	10.0 %		4.0 %
6/30/1989	11,019		11,019	33,540	5.5 %		5.2 %
6/30/1990	11,539		11,539	35,702	6.4 %	6.4 %	4.7 %
6/30/1991	12,313		12,313	36,699	2.8 %	5.9 %	4.7 %
6/30/1992	12,308		12,308	36,356	(0.9)%	4.7 %	3.1 %
6/30/1993	12,330		12,330	36,539	0.5 %	2.8 %	3.0 %
6/30/1994	12,873		12,873	37,365	2.3 %	2.2 %	2.5 %
6/30/1995	13,287		13,287	39,215	5.0 %	1.9 %	3.0 %
6/30/1996	13,110		13,110	40,508	3.3 %	2.0 %	2.8 %
6/30/1997	13,473		13,473	41,098	1.5 %	2.5 %	2.3 %
6/30/1998	13,806		13,806	42,210	2.7 %	2.9 %	1.7 %
6/30/1999	14,449		14,449	43,326	2.6 %	3.0 %	2.0 %
6/30/2000	15,050		15,050	45,112	4.1 %	2.8 %	3.7 %
6/30/2001	15,955		15,955	47,628	5.6 %	3.3 %	3.2 %
6/30/2002	15,363	711	16,074	48,635	2.1 %	3.4 %	1.1 %
6/30/2003	13,934	3,804	17,738	48,850	0.4 %	3.0 %	2.1 %
12/31/2004	11,856	6,864	18,720	52,234	6.9 %	3.8 %	3.3 %
12/31/2005	10,895	8,186	19,081	55,040	5.4 %	4.1 %	3.4 %
12/31/2006	10,065	9,306	19,371	57,396	4.3 %	3.8 %	2.5 %
12/31/2007	9,350	10,249	19,599	59,260	3.2 %	4.0 %	4.1 %
12/31/2008	8,791	10,940	19,731	61,383	3.6 %	4.7 %	0.1 %
12/31/2009	8,417	11,474	19,891	60,736	(1.1)%	3.1 %	2.7 %
12/31/2010	7,900	12,241	20,141	59,148	(2.6)%	1.4 %	1.5 %
12/31/2011	7,353	13,623	20,976	59,448	0.5 %	0.7 %	3.0 %
12/31/2012	6,801	14,718	21,519	60,297	1.4 %	0.3 %	1.7 %

PERSONS IN VALUATIONS - COMPARATIVE STATEMENT

Retired Lives

Valuation Date	Number	Average Annual Benefit	Total Benefits	Active Member Payroll	Total Benefits as % of Payroll
2/28/1974	-	\$ -	\$ -	\$ 97,221,025	
2/28/1975	195	3,463	675,344	110,571,258	0.61%
2/28/1976	456	3,270	1,491,310	137,131,905	1.09%
2/29/1980	1,012	4,238	4,288,395	169,924,320	2.52%
6/30/1983	1,448	5,136	7,437,571	225,592,433	3.30%
6/30/1985	1,823	6,220	11,339,462	251,691,261	4.51%
6/30/1986	2,047	6,614	13,539,032	277,545,288	4.88%
6/30/1987	2,232	7,007	15,639,820	305,050,734	5.13%
6/30/1988	2,425	7,629	18,502,289	340,945,603	5.43%
6/30/1989	2,679	8,671	23,230,719	369,574,756	6.29%
6/30/1990	2,932	9,354	27,428,027	411,970,032	6.66%
6/30/1991	3,209	10,146	32,559,349	451,872,668	7.21%
6/30/1992	3,311	10,960	36,289,308	447,473,936	8.11%
6/30/1993	3,486	11,307	39,417,339	450,530,273	8.75%
6/30/1994	3,775	11,285	42,600,996	480,995,439	8.86%
6/30/1995	3,927	11,529	45,274,131	521,044,021	8.69%
6/30/1996	4,225	11,843	50,036,473	531,060,397	9.42%
6/30/1997	4,478	11,908	53,322,514	553,709,472	9.63%
6/30/1998	4,773	12,156	58,018,744	582,754,912	9.96%
6/30/1999	5,113	12,383	63,312,850	626,015,364	10.11%
6/30/2000	5,344	13,201	70,548,074	678,937,233	10.39%
6/30/2001	5,766	13,167	75,922,636	759,905,510	9.99%
6/30/2002	6,375	13,645	86,985,606	781,756,005	11.13%
6/30/2003	6,729	14,493	97,522,562	866,501,799	11.25%
12/31/2004	7,430	14,767	110,029,000	977,817,281	11.25%
12/31/2005	7,710	15,077	116,242,812	1,050,216,544	11.07%
12/31/2006	8,029	15,370	123,402,840	1,111,827,576	11.10%
12/31/2007	8,354	15,598	130,307,079	1,161,431,668	11.22%
12/31/2008	8,595	15,631	134,346,260	1,211,140,009	11.09%
12/31/2009	8,772	15,697	137,692,304	1,208,092,606	11.40%
12/31/2010	9,081	15,677	142,366,660	1,191,290,190	11.95%
12/31/2011	9,467	15,707	148,697,364	1,246,973,240	11.92%
12/31/2012	9,788	15,594	152,634,070	1,297,536,507	11.76%

Total benefits as a % of payroll are much higher than total contributions as a % of payroll. This is an expected condition in a well-funded plan such as ERFC.

ORIGINAL BENEFIT FORMULAS (BEFORE JULY 1, 1988)
RETIREES AND BENEFICIARIES DECEMBER 31, 2012
BY TYPE OF BENEFIT BEING PAID

Type of Pension Being Paid	No.	Annual Amounts		
		Payable for Life	Temporary Supplement	Current Benefits
Age and Service - Normal:				
Straight Life	517	\$ 8,362,363		\$8,362,363
Optional Forms	22	411,405		411,405
Age and Service - Early:				
Straight Life	371	3,903,492	\$68,006	3,971,498
Optional Forms	17	244,144		244,144
Age and Service Totals	927	12,921,404	68,006	12,989,410
Duty Disability:				
Straight Life	7	213,645		213,645
Non-Duty Disability				
Straight Life	46	434,855		434,855
Age and Service Survivor Beneficiary, Duty Death, and Non-Duty Death	50	462,384		462,384
Other Totals	103	1,110,884		1,110,884
Total Benefits	1,030	\$14,032,288	\$68,006	\$14,100,294

**BENEFIT FORMULAS (EFFECTIVE JULY 1, 1988)
RETIREES AND BENEFICIARIES DECEMBER 31, 2012
BY TYPE OF BENEFIT BEING PAID**

Type of Pension Being Paid	No.	Annual Amounts		
		Payable for Life	Temporary Supplement	Current Benefits
Age and Service - Normal:				
Straight Life	4,083	\$57,696,446	\$30,645,554	\$88,342,000
Optional Forms	546	7,530,332	4,326,833	11,857,165
Age and Service - Early:				
Straight Life	3,361	16,348,601	16,907,369	33,255,970
Optional Forms	244	1,346,584	1,380,952	2,727,536
Age and Service Totals	8,234	82,921,963	53,260,708	136,182,671
Duty Disability:				
Straight Life	13	47,062		47,062
Optional Forms	1	1,820		1,820
Non-Duty Disability:				
Straight Life	133	505,328	21,973	527,301
Optional Forms	14	49,410		49,410
Age and Service Survivor Beneficiary, Duty Death, and Non-Duty Death	99	544,495	219,675	764,170
Other Totals	260	1,148,115	241,648	1,389,763
Total Benefits	8,494*	\$84,070,078*	\$53,502,356	\$137,572,434

* Includes benefits split in DROs.

**BENEFIT FORMULAS (EFFECTIVE JULY 1, 2001)
 RETIREES AND BENEFICIARIES DECEMBER 31, 2012
 BY TYPE OF BENEFIT BEING PAID**

Type of Pension Being Paid	No.	Annual Amounts
Age and Service - Normal: Straight Life	229	\$847,125
Optional Forms	30	98,589
Age and Service - Early: Straight Life		
Optional Forms		
Age and Service Totals	259	945,714
Duty Disability: Straight Life		
Optional Forms		
Non-Duty Disability: Straight Life		
Optional Forms		
Age and Service Survivor: Beneficiary, Duty Death, and Non-Duty Death	5	15,628
Other Totals	5	15,628
Total Benefits	264	\$961,342

ORIGINAL BENEFIT FORMULAS (BEFORE JULY 1, 1988)
RETIREES AND BENEFICIARIES DECEMBER 31, 2012
CURRENT ANNUAL BENEFITS - TABULATED BY ATTAINED AGES

Attained Ages	No.	Annual Amount
57	1	\$ 1,899
59	4	19,294
60	2	5,394
61	3	20,179
62	3	24,423
63	2	9,446
64	2	23,157
65	1	6,811
66	1	29,895
67	3	46,281
68	2	20,295
69	2	15,253
70	2	20,117
71	5	56,159
72	3	35,406
73	15	171,436
74	24	334,939
75	36	578,299
76	45	879,600
77	64	1,221,414
78	55	1,081,773
79	54	1,063,238
80-84	290	4,663,550
85-89	260	2,709,393
90 & Up	151	1,062,643
Total	1,030	\$14,100,294

BENEFIT FORMULAS (EFFECTIVE JULY 1, 1988)
RETIREES AND BENEFICIARIES DECEMBER 31, 2012
CURRENT ANNUAL BENEFITS - TABULATED BY ATTAINED AGES

Attained Ages	No.	Annual Amount
Under 40	5	\$ 15,260
40-44	6	30,617
45		
46	1	811
47	2	6,479
48	2	30,513
49	8	25,322
50	6	94,067
51	3	53,448
52	7	174,006
53	13	366,264
54	20	620,611
55	82	1,860,372
56	136	3,181,463
57	164	3,668,297
58	207	4,941,350
59	218	5,269,884
60	298	6,984,690
61	342	7,785,781
62	405	9,081,027
63	462	11,364,340
64	554	12,799,832
65	699	15,822,198
66	555	6,541,568
67	430	4,370,629
68	450	4,996,540
69	432	4,768,588
70-74	1,634	18,116,845
75-79	919	10,387,902
80 & Up	434	4,213,730
Totals*	8,494	\$137,572,434

* Includes benefits split in DROs.

ERFC 2001
RETIREES AND BENEFICIARIES DECEMBER 31, 2012
CURRENT ANNUAL BENEFITS - TABULATED BY ATTAINED AGES

Attained Ages	No.	Annual Amount
Under 40	1	\$ 2,524
45	1	2,895
56	1	3,333
60	19	72,579
61	24	78,264
62	24	91,228
63	22	79,117
64	26	88,235
65	37	135,065
66	33	128,615
67	22	95,351
68	14	47,321
69	9	33,133
70-74	24	83,539
75-79	7	20,143
Totals	264	\$961,342

ORIGINAL BENEFIT FORMULAS (BEFORE JULY 1, 1988)
INACTIVE VESTED MEMBERS DECEMBER 31, 2012
ANNUAL DEFERRED BENEFITS - BY ATTAINED AGES

Attained Ages	No.	Annual Amount
59	2	\$ 2,575
60	5	5,857
61	3	4,917
62	3	2,929
63	1	1,106
64	2	8,610
Totals*	16	\$25,994

** In addition, there are 10 members whose benefits are projected to be offset to zero. Liabilities for these members were set equal to their contributions.*

BENEFIT FORMULAS (EFFECTIVE JULY 1, 1988)
INACTIVE VESTED MEMBERS DECEMBER 31, 2012
ANNUAL DEFERRED BENEFITS - BY ATTAINED AGES

Attained Ages	No.	Annual Amount
32	1	\$ 1,137
33	1	1,363
34	37	88,526
35	55	117,616
36	73	159,796
37	76	150,898
38	98	165,531
39	88	151,929
40	99	187,712
41	108	262,051
42	121	283,971
43	110	278,189
44	98	264,107
45	93	224,580
46	82	172,035
47	88	218,855
48	68	148,236
49	76	223,204
50	68	194,733
51	58	209,732
52	66	194,991
53	63	308,260
54	60	223,145
55	43	130,078
56	30	97,156
57	31	87,429
58	28	125,579
59	34	133,068
60	29	103,941
61	27	138,761
62	25	137,236
63	20	99,169
64	21	130,861
65 & Up	28	101,690
Totals	2,003	\$5,515,565

ERFC 2001
INACTIVE VESTED MEMBERS DECEMBER 31, 2012
ANNUAL DEFERRED BENEFITS - BY ATTAINED AGES

Attained Ages	No.	Annual Amount
26	2	\$ 11,571
27	2	4,875
28	22	74,154
29	32	113,622
30	50	181,230
31	81	293,887
32	79	290,554
33	102	359,090
34	76	278,108
35	62	208,683
36	56	193,199
37	40	131,956
38	36	108,843
39	30	97,838
40	14	43,293
41	31	95,204
42	19	53,174
43	17	49,118
44	18	56,020
45	20	68,985
46	18	54,300
47	13	35,711
48	16	43,144
49	12	26,121
50	17	46,699
51	17	34,956
52	20	60,026
53	17	45,113
54	13	32,916
55	16	59,537
56	28	84,672
57	22	56,381
58	22	75,357
59	21	63,822
60	7	24,266
61	6	17,499
62	3	5,223
63	3	8,883
64	4	9,460
65 & Over	6	18,203
Totals	1,070	\$3,515,693

SECTION F

FINANCIAL REPORTING UNDER GASB REQUIREMENTS

This information is presented in draft form for review by the System's auditor. Please let us know if there are any items that the auditor changes so that we may maintain consistency with the System's financial statements.

FINANCIAL REPORTING IN COMPLIANCE WITH GOVERNMENTAL ACCOUNTING STANDARDS BOARD (GASB) REQUIREMENTS

The provisions of GASB Statement No. 25 became effective for periods beginning after June 15, 1996. This Statement established financial reporting standards for defined benefit *plans*. (GASB Statement No. 27, which is effective for periods beginning after June 15, 1997 establishes standards for the financial reports of state and local governmental *employers* with regard to pension expense and related liabilities, as well as required supplementary information.)

Defined benefit plan reporting under Statement No. 25 will include two financial statements with notes and two required schedules with notes. In response, the following exhibits appear on the next several pages:

- **Statement of Reported Plan Assets Available for Benefits** (page F-2) provides information about the market value of plan assets by investment category.
- **Statement of Changes in Reported Plan Assets Available for Benefits** (page F-3) shows a reconciliation of beginning-of-year market value with the end-of-year market value.

The relevant notes to the financial statements are on page F-4.

- **The Schedule of Funding Progress** (page F-5) shows the most recent history of the actuarial value of assets, actuarial accrued liability, their relationship, and the relationship of the unfunded actuarial accrued liability to payroll.
- **The Schedule of Employer Contributions** (page F-6) provides a history of the Annual Required Contribution (ARC) and a year-by-year comparison of the ARC to the actual contributions.

A summary of actuarial methods and assumptions completes the Statement No. 25 information on page F-7.

A development of the Annual Pension Cost (APC) and the Net Pension Obligation under GASB Statement No. 27 is found on page F-8.

The statements described above will be replaced by new GASB standards starting in the 2014 Fiscal Year.

STATEMENT OF REPORTED PLAN ASSETS

	December 31	
	2012	2011
Assets		
Cash and short-term investments		
Cash	\$ 2,484,449	\$ 3,682,671
Cash with fiscal agent	1,927,763	1,156,789
Cash collateral for securities on loan	24,034,973	70,162,084
Short-term investments	41,145,008	41,344,503
Prepaid assets	0	24,792
Total cash & short-term investments	69,592,193	116,370,839
Receivables		
Interest and dividends	2,811,926	2,832,034
Securities sold	68,274,347	45,860,482
Miscellaneous accounts receivable	0	0
Total Receivables	71,086,273	48,692,516
Investments at fair value		
US Government obligations	3,274,416	7,254,567
Mortgage-backed securities	9,147,224	1,824,177
Domestic corporate bonds	87,076,066	88,961,391
International and convertible bonds	54,679,338	46,590,381
Common stock	555,660,189	531,773,566
Preferred stock	6,911,740	6,141,627
Global asset allocation / better beta	287,893,090	271,024,679
Real estate	151,167,727	140,212,932
Hedge fund of funds	144,682,750	132,259,441
Private equity	21,054,072	12,990,487
Commingled funds - bonds	372,856,730	291,280,679
Commingled funds - equity	190,574,189	176,836,074
Total Investments	1,884,977,531	1,707,150,001
Other Assets (Furniture and equip. net of accum. deprec.)	113,821	113,821
Total Assets	2,025,769,818	1,872,327,177
Liabilities		
Accounts payable	6,914	14,548
Securities purchased	79,220,300	57,553,457
Securities lending collateral	24,034,973	70,162,084
Total Liabilities	103,262,187	127,730,089
Net Assets held in trust for pension benefits (a schedule of funding progress is presented on page F-5)	\$1,922,507,631	\$1,744,597,088

STATEMENT OF CHANGES IN REPORTED PLAN ASSETS

	Reconciliation as of December 31	
	2012	2011
Additions		
Contributions		
Employer	\$ 59,160,799	\$ 49,499,117
Plan members	44,699,941	47,880,636
Donated fixed assets	0	0
Total Contributions	103,860,740	97,379,753
Investment Income		
Net appreciation in fair value of investments	201,411,066	(49,539,117)
Interest and dividends	46,860,897	41,021,778
Real estate	2,122,206	2,276,848
Net securities lending	393,178	250,151
Miscellaneous	57,408	110,061
Total Investment Income	250,844,755	(5,880,279)
Less: Investment Expenses	10,361,827	9,115,850
Net Investment Income	240,482,928	(14,996,129)
Total Additions	344,343,668	82,383,624
Deductions		
Benefits	158,222,265	152,703,450
Refunds	4,272,444	4,197,966
Administrative expense	3,938,416	3,422,200
Total Deductions	166,433,125	160,323,616
Net increase/(decrease)	177,910,543	(77,939,991)
Net Assets held in trust for pension benefits		
Beginning of year	\$1,744,597,088	\$1,822,537,079
End of year	\$1,922,507,631	\$1,744,597,088

**NOTES TO THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED DECEMBER 31, 2012**

Membership information as of December 31, 2012, the date of the latest actuarial valuation, is as follows:

Retirees and beneficiaries	9,788
Inactive members	3,099
Active members	21,519
Total	34,406

Plan Description

The ERFC is a single employer defined benefit pension plan that provides service, reduced service, disability, and death benefits to plan members and their beneficiaries. Annual post-retirement cost-of-living increases of 3% are effective each March 31.

Contributions

Plan members contribute 3% of pay effective July 1, 2012. The employer's funding policy provides for periodic employer contributions based upon a fundamental financial objective of having rates of contribution which remain relatively level from generation to generation of employees. To determine the employer contribution rates and to assess the extent to which the fundamental financial objective is being achieved, ERFC has actuarial valuations prepared annually. In preparing those valuations, the entry age actuarial cost method is used to determine normal cost and actuarial accrued liabilities (see page G-2 for further details).

Unfunded actuarial accrued liabilities are amortized by level percent-of-payroll contributions over a period of future years not in excess of 30. As of December 31, 2012, the remaining amortization period is 26 years.

On the basis of the December 31, 2012 actuarial valuation, the Annual Required Employer Contribution for Fiscal 2015 determined in accordance with GASB Statement No. 25 for accounting purposes was determined to be 5.58% of payroll as follows:

1) Normal Cost	5.78%
2) Accrued Liability	2.80%
3) Total	8.58%
4) Member Contribution	3.00%
5) Annual Required Contribution	5.58%

Please see page 3 for comments about changes in GASB reporting standards.

REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF FUNDING PROGRESS
(DOLLAR AMOUNTS IN THOUSANDS)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Entry Age (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a)/(b)	Covered Payroll (c)	UAAL as a Percent of Covered Payroll [(b) - (a)] / (c)
6/30/92	\$ 563,644	\$ 763,570	\$ 199,926	73.82 %	\$ 447,474	44.68 %
6/30/93	717,701	908,367	190,666	79.01 %	450,530	42.32 %
6/30/94#	766,480	972,079	205,599	78.85 %	480,995	42.74 %
6/30/95	839,930	1,072,536	232,606	78.31 %	521,044	44.64 %
6/30/96	934,572	1,130,544	195,972	82.67 %	531,060	36.90 %
6/30/97	1,045,412	1,215,367	169,955	86.02 %	553,709	30.69 %
6/30/98	1,194,556	1,282,615	88,059	93.13 %	582,755	15.11 %
6/30/98#	1,194,556	1,278,372	83,816	93.44 %	582,755	14.38 %
6/30/99	1,510,953	1,345,659	(165,294)	112.28 %	626,015	-
6/30/00	1,505,231	1,367,371	(137,860)	110.08 %	678,937	-
6/30/01\$	1,599,219	1,552,558	(46,661)	103.01 %	759,906	-
6/30/02	1,619,889	1,693,956	74,067	95.63 %	781,756	9.47 %
6/30/03\$	1,597,459	1,772,418	174,959	90.13 %	866,502	20.19 %
12/31/04#	1,643,020	1,935,582	292,562	84.89 %	977,817	29.92 %
12/31/05	1,718,399	2,022,962	304,563	84.94 %	1,050,217	29.00 %
12/31/06	1,818,930	2,105,552	286,622	86.39 %	1,111,828	25.78 %
12/31/07	1,924,886	2,186,801	261,915	88.02 %	1,161,432	22.55 %
12/31/08*	1,733,946	2,255,298	521,352	76.88 %	1,211,140	43.05 %
12/31/09#	1,769,540	2,339,869	570,329	75.63 %	1,208,093	47.21 %
12/31/10*	1,822,603	2,384,061	561,458	76.45 %	1,191,290	47.13 %
12/31/11\$	1,866,952	2,470,964	604,012	75.56 %	1,246,973	48.44 %
12/31/12	1,935,292	2,566,128	630,836	75.42 %	1,297,537	48.62 %

After Experience Study.

\$ After change in benefit structure (member contribution rate decrease in Fiscal 2012 and 2013).

* After changes in actuarial assumptions and/or methods.

SCHEDULE OF EMPLOYER CONTRIBUTIONS

Plan Year Ended June 30	Annual Required Contribution	Percent Contributed
2004	\$37,331,203	100%
2005	32,198,596	100%
2006	34,648,918	100%
2007	36,644,001	100%
2008	38,334,140	100%
2009	37,281,658	107%
2010	35,146,816	108%
2011	47,118,111	100%
2012	50,738,815	104%

The figures on this page show the actual employer contribution required for compliance with Governmental Accounting Standards (GASB Statement No. 25). A figure of 100% in the 'Percent Contributed' column means that the employer contribution complied with Governmental Accounting Standards. The figures are prepared in draft form for review by the auditor.

SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

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

Valuation date	December 31, 2012
Actuarial cost method	Individual entry age actuarial cost method (see page G-2)
Amortization method	Level percent of payroll
Remaining amortization period	26 years
Asset valuation method	5-year smoothed market 75%/125% corridor
Actuarial assumptions	
Investment rate of return*	7.50%
Projected salary increase*	3.75 - 9.05%
* <i>Includes wage inflation at</i>	3.75%
Cost-of-living adjustments	3.00%

**DETERMINATION OF ANNUAL PENSION COST (APC)
AND NET PENSION OBLIGATION (NPO) UNDER
GOVERNMENTAL ACCOUNTING STANDARDS BOARD STATEMENT NO. 27**

Fiscal Year Ended June 30	ARC (Annual Required ER Confs)	Interest on Prior Year's NPO	ARC Adjustment (NPO Amort)	Net Change to ARC	APC (Annual Pension Cost)	Actual ER Contribution	Change in NPO	New NPO (NPA) Balance
2009	\$ 37,281,658	\$ 0	\$ 0	\$ 0	\$37,281,658	\$40,012,480	\$(2,730,822)	\$(2,730,822)
2010	35,146,816	(204,812)	(174,046)	(30,766)	35,116,050	37,868,623	(2,752,573)	(5,483,395)
2011	47,118,111	(411,255)	(313,771)	(97,484)	47,020,627	47,118,111	(97,484)	(5,580,879)
2012	50,738,815	(418,566)	(325,538)	(93,028)	50,645,787	52,934,245	(2,288,458)	(7,869,337)

The figures above are prepared in draft form for review and approval by the auditor. Please let us know if there are any audit adjustments.

SECTION G

ACTUARIAL ASSUMPTIONS & MISCELLANEOUS

**SUMMARY OF
ASSUMPTIONS USED FOR ERFC ACTUARIAL VALUATION
ASSUMPTIONS ADOPTED BY BOARD OF TRUSTEES
AFTER CONSULTING WITH ACTUARY**

The actuarial assumptions used in making the valuation are shown in this Appendix of the report. The assumptions were established for the December 31, 2010 actuarial valuation, based upon a study of experience during the period January 1, 2005 to December 31, 2009.

ECONOMIC ASSUMPTIONS

The investment return rate used in making the valuation was 7.5% per year, compounded annually (net after administrative expenses). The real rate of return over wages or the “spread” is defined to be the portion of total investment return which is more than the wage inflation rate. Based upon an assumed wage inflation rate of 3.75%, the 7.5% investment return rate translates to an ***assumed real rate of return over wages of 3.75%***. The assumed real return over prices would be higher.

Pay increase assumptions for individual active members are shown by years of service on page G-8. Part of the pay increase assumption is for merit and/or seniority increase, and the other 3.75% recognizes price inflation and real wage growth.

Price Inflation: No explicit price inflation assumption is needed for this valuation.

The number of active members is assumed to continue at the present number.

Total active member payroll is assumed to increase 3.75% annually in the long term, which is the portion of the individual pay increase assumptions attributable to wage inflation. This assumed increase is recognized in the funding of unfunded actuarial accrued liabilities.

NON-ECONOMIC ASSUMPTIONS

The mortality table used to measure active and retired life mortality was the 1994 Group Annuity Mortality Table set back 3 years for males and 3 year for females. Related values are shown on page G-5 along with the rates used for disabled mortality. Overall, these rates do not include a margin for future improvement.

The probabilities of retirement for members eligible to retire are shown on page G-6.

The probabilities of withdrawal from service, *death-in-service* and *disability* are shown for sample ages on page G-7.

The individual entry age actuarial cost method of valuation was used for determining actuarial accrued liabilities and normal cost. The method determines separate normal costs for *ERFC* and for *ERFC 2001* and blends the results together to produce the normal costs shown on page B-2. This means that in the long run, the normal cost will become the normal cost of *ERFC 2001*, which is slightly higher than the blended figure shown on page B-2.

Unfunded actuarial accrued liabilities are amortized to produce contribution amounts (principal and interest) which are level percent of payroll contributions.

Present assets (cash and investments) are valued on a market-related basis effective June 30, 1986. Page D-3 provides specifics. A one-time adjustment toward market was made in connection with the 1990-93 experience study and an additional one-time adjustment set the funding value equal to the market value as of December 31, 2004. An 85%-115% market value corridor was added in the December 31, 2005 valuation. This was adjusted to 75% - 125% in the December 31, 2008 valuation, as requested by the Board.

The data about persons now covered and about present assets was furnished by the System's administrative staff. Although examined for general reasonableness, the data was not audited by the Actuary.

The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (M.A.A.A.).

ERFC REGULATIONS – FUNDING POLICY AND EMPLOYER CONTRIBUTION RATE

(Applicable to *ERFC* and *ERFC 2001*)

Pursuant to their authority under § 15.03 of the *ERFC* Plan Document and § 10.03 of the *ERFC 2001* Plan Document, the Trustees have adopted the following regulations governing determination of the employer contribution rate and implementation of the funding policy pursuant to §§ 3.05 and 16.03 of the *ERFC* Plan Document and §§ 3.05 and 11.03 of the *ERFC 2001* Plan Document.

16.03A Purpose of Regulations. The funding policy of the Plan is stated in § 16.03 of the *ERFC* Plan Document and § 11.03 of the *ERFC 2001* Plan Document. That policy is “to establish and receive contributions which will remain approximately level from generation to generation of citizens and which, when combined with other assets and investment return thereon, will be sufficient to pay benefits when due while providing a reasonable margin for adverse experience.” Section 3.05 in each Plan Document provides that the employer “shall contribute a percentage of each Member’s Salary, at a rate to be determined by the actuary in accordance with the funding policy set forth in this Plan Document.” Within the broader context of the stated funding policy, the objectives of the Trustees are:

- (1) To make consistent progress toward 100% funding of the Plan and to maintain 100% funding once it has been attained;
- (2) To stabilize the Employer contribution rate and avoid sharp increases or decreases due to specific events or short-term conditions; and
- (3) To maintain the Plan’s funding in accordance with principles of actuarial practice and standards issued by the Government Accounting Standards Board (GASB).

16.03B Frequency of Actuarial Valuations. The actuary shall prepare annual actuarial valuations based upon calendar-year data. Whenever possible, the valuation for a particular year should be presented to the Trustees within the first 120 days of the following calendar year.

16.03C Schedule for Setting the Employer Contribution Rate. The Trustees will determine the Employer contribution rate biennially, in consultation with the actuary, based upon the actuarial valuation for the most recently completed calendar year. The rate shall be set and communicated to the Employer at least 9 months in advance of the effective date so that it will be available for use in the Employer's budgetary process. Each rate shall remain in effect for two consecutive fiscal years. The first rate to be set in accordance with this schedule will be based on the actuarial valuation as of December 31, 2005. It will become effective July 1, 2007, and will remain in effect through June 30, 2009.

16.03D The Employer Contribution Rate. The Employer contribution rate will be set at a level that is expected to:

- (1) pay all normal costs accruing under the Plan during the fiscal years for which the rate is effective;
- (2) amortize any unfunded liabilities in compliance with GASB standards; and
- (3) take into consideration the difference between actuarial and market value of Plan assets and the amortization period for unfunded liabilities.

16.03E The Amortization Period for Unfunded Liabilities. In the biennial determination of the Employer contribution rate, the amortization period for unfunded liabilities will be set within the parameters permitted by GASB standards. If those standards and the other principles stated in Paragraphs 16.03A and 16.03D permit, the Employer contribution rate to be effective July 1, 2007, through June 30, 2009, will use 27 years as the amortization period for unfunded liabilities. In setting the Employer contribution rate for years beginning July 1, 2009, or later, the Trustees may change the amortization period within the parameters permitted by GASB standards, with the expectation that the amortization period will be reduced over time, consistent with Paragraph 16.03A(1).

16.03F The Valuation of Plan Assets. The actuarial value of Plan assets shall be determined as a 5 year smoothed Market Value of Assets. The smoothing technique shall fully recognize the assumed return each year. It shall further spread the difference between the actual return and the assumed return in equal installments over the current year and four future years. In the event that the method would result in an actuarial value of assets that is less than 75% of market value or more than 125% of market value, the actuarial value of assets shall be reset to 75% of market value or 125% of market value, as the case may be, and the total difference between market and actuarial value shall be spread over 4 future years. Based upon consultation with the actuary, the Trustees may combine bases in order to reset the actuarial value to be equal to the market value when the difference between market value and actuarial value is 5% or less of market value.

SINGLE LIFE RETIREMENT VALUES

STANDARD MORTALITY

Sample Attained Ages	Present Value of \$1 Monthly for Life Increasing 3.0% Annually		Percent Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women	Men	Women
55	\$187.03	\$201.44	0.3213%	0.1734%	28.85	32.99
60	169.63	185.77	0.5581%	0.2919%	24.39	28.31
65	150.45	167.93	1.0147%	0.5832%	20.18	23.82
70	130.51	148.72	1.8034%	1.0764%	16.37	19.65
75	110.33	128.05	2.8481%	1.6506%	12.98	15.78
80	89.95	106.03	4.5171%	2.8366%	9.96	12.22
Ref:	261 x 1.00	262 x 1.00				
	sb 3	sb 3				

DISABLED MORTALITY

Sample Attained Ages	Present Value of \$1 Monthly for Life Increasing 3.0% Annually		Percent Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women	Men	Women
55	\$128.18	\$144.69	3.3740%	2.6550%	17.14	20.34
60	118.67	135.13	4.2210%	2.9790%	15.18	18.04
65	110.09	124.28	4.7460%	3.3300%	13.46	15.71
70	99.71	111.14	5.1730%	3.6990%	11.60	13.27
75	86.55	94.59	5.8940%	4.4280%	9.55	10.66
80	70.31	76.55	7.8960%	6.7140%	7.37	8.16
Ref:	309 x 0.70	310 x 0.90				
	sb 0	sb 0				

PROBABILITIES OF RETIREMENT FOR MEMBERS ELIGIBLE TO RETIRE

Ages	Hired Before 7/1/2001		Hired on or After 7/1/2001		
	Type of Retirement		Age Based	Service	Service Based
	Service	Reduced Service			
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		8.0%			
54		8.0%			
55	45.0%	9.0%	22.5%	30	22.5%
56	35.0%	4.0%	17.5%	31	17.5%
57	25.0%	4.0%	12.5%	32	12.5%
58	25.0%	4.0%	12.5%	33	12.5%
59	25.0%	4.0%	12.5%	34	12.5%
60	30.0%	8.0%	15.0%	35	15.0%
61	35.0%	9.0%	17.5%	36	17.5%
62	35.0%	15.0%	17.5%	37	17.5%
63	30.0%	18.0%	15.0%	38	35.0%
64	25.0%	18.0%	12.5%	39	50.0%
65	25.0%		12.5%	40 & Up	100.0%
66	25.0%		12.5%		
67	25.0%		25.0%		
68	25.0%		25.0%		
69	20.0%		20.0%		
70	20.0%		20.0%		
71	20.0%		20.0%		
72	20.0%		20.0%		
73	30.0%		30.0%		
74	30.0%		30.0%		
75	100.0%		100.0%		
76	100.0%		100.0%		
77	100.0%		100.0%		
78	100.0%		100.0%		
79	100.0%		100.0%		
80	100.0%		100.0%		
Ref:	1891	1893	1892		1894

The age column index does not apply to the service based retirements. In *ERFC 2001* an individual can retire at 30 years of service regardless of age.

SAMPLE RATES OF SEPARATION FROM ACTIVE EMPLOYMENT BEFORE RETIREMENT

Ages	Years of Service	% of Active Members Separating Within Next Year									
		Death				Disability				Other	
		Ordinary		Duty		Ordinary		Duty			
		Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
25	4 & Up	0.02%	0.01%	0.00%	0.00%	0.03%	0.02%	0.01%	0.00%	11.20%	15.40%
30		0.03%	0.01%	0.00%	0.00%	0.03%	0.02%	0.01%	0.01%	7.60%	11.20%
35		0.03%	0.02%	0.00%	0.00%	0.05%	0.04%	0.01%	0.01%	5.40%	7.60%
40		0.04%	0.02%	0.00%	0.00%	0.07%	0.06%	0.02%	0.02%	3.80%	4.20%
45		0.05%	0.03%	0.01%	0.00%	0.10%	0.09%	0.03%	0.02%	3.00%	3.00%
50		0.08%	0.04%	0.01%	0.01%	0.17%	0.15%	0.04%	0.04%	2.00%	3.00%
55		0.13%	0.07%	0.02%	0.01%	0.29%	0.25%	0.07%	0.06%	3.20%	4.20%
60	0.22%	0.12%	0.03%	0.01%	0.49%	0.35%	0.12%	0.09%	4.00%	5.00%	
Ref:		0.40 x 261	0.40 x 262	0.05 x 261	0.05 x 262					669	670
		sb 3	sb 3	sb 3	sb 3	0.16 x 16	0.16 x 17	0.04 x 16	0.04 x 17	1153	1154

Rates of separation for members with less than 4 years of service are assumed to be: 16% in the first year for both men and women, 13% in the second and third years for men, and 14% in the second and third years for women.

SAMPLE PAY INCREASE ASSUMPTIONS FOR AN INDIVIDUAL MEMBER

Pay Increase Assumption			
Service Index	Merit & Seniority	Base (Economy)	Increase Next Year
1	5.30%	3.75%	9.05%
2	3.80%	3.75%	7.55%
3	3.30%	3.75%	7.05%
4	3.10%	3.75%	6.85%
5	2.90%	3.75%	6.65%
6	2.70%	3.75%	6.45%
7	2.70%	3.75%	6.45%
8	2.30%	3.75%	6.05%
9	2.10%	3.75%	5.85%
10	1.80%	3.75%	5.55%
11	1.80%	3.75%	5.55%
12	1.80%	3.75%	5.55%
13	1.80%	3.75%	5.55%
14	1.80%	3.75%	5.55%
15	1.80%	3.75%	5.55%
16	1.80%	3.75%	5.55%
17	1.80%	3.75%	5.55%
18	1.80%	3.75%	5.55%
19	1.80%	3.75%	5.55%
20	1.00%	3.75%	4.75%
21	1.00%	3.75%	4.75%
22	1.00%	3.75%	4.75%
23	1.00%	3.75%	4.75%
24	1.00%	3.75%	4.75%
25	0.00%	3.75%	3.75%
Ref:	386	3.75%	

RATES OF FORFEITURE FOLLOWING VESTED SEPARATION

Age at Separation	Sample Entry Age				
	25	30	35	40	45
30	0.5000				
31	0.4750				
32	0.4500				
33	0.4250				
34	0.4000				
35	0.3750	0.5000			
36	0.3500	0.4667			
37	0.3250	0.4333			
38	0.3000	0.4000			
39	0.2750	0.3667			
40	0.2500	0.3333	0.5000		
41	0.2250	0.3000	0.4500		
42	0.2000	0.2667	0.4000		
43	0.1750	0.2333	0.3500		
44	0.1500	0.2000	0.3000		
45	0.1250	0.1667	0.2500	0.5000	
46	0.1000	0.1333	0.2000	0.4000	
47	0.0750	0.1000	0.1500	0.3000	
48	0.0500	0.0667	0.1000	0.2000	
49	0.0250	0.0333	0.0500	0.1000	
50	0.0000	0.0000	0.0000	0.0000	0.0000

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 “other separation” from page G-7 by the probability of forfeiture from this table. The table does not apply to individuals who are eligible for retirement at time of termination.

Investment Return and Inflation: Past and Future

Inflation Distortions

Inflation's impact on investment return is not uniform from year to year. A common expectation for Real Investment Return (the portion of Total Return remaining after Price Inflation) is in the area of 3% to 4% annually.

Over the last 30 years, Real Return exceeded that range on average. However, for parts of the period it was actually negative. It is very difficult to maintain a long-term portfolio allocation during periods of negative real return.

Annual Investment Return (including Income) expressed as REAL RETURN (Remainder after Price Inflation)

No. Years Ended December	Inflation (CPI)	Cash Equiv. (T Bills)	Bonds (Long Term)		Stocks (S & P 500)	Real Return for Sample Fund		
			US Treasury	Corporate (Sol. Bro.)		A	B	C
1/2008	0.1	1.5	25.8	8.7	(37.1)	(0.6)	(11.5)	(20.1)
1/2009	2.7	(2.5)	(17.1)	0.3	23.2	1.7	8.0	13.1
1/2010	1.5	(1.4)	8.5	10.7	13.4	9.7	10.4	11.0
1/2011	3.0	(2.9)	24.5	14.6	(0.9)	11.2	7.1	3.8
1/2012	1.7	(1.6)	1.6	8.8	14.1	7.2	8.9	10.4
5/1980	9.2	(1.3)	(6.9)	(6.2)	4.3	(2.6)	(0.4)	1.3
5/1985	4.8	5.2	11.5	12.3	9.4	10.7	10.2	9.8
5/1990	4.1	2.6	6.4	6.1	8.6	6.7	7.2	7.6
5/1995	2.8	1.5	10.0	9.1	13.4	10.0	10.8	11.3
5/2000	2.5	2.6	4.9	3.2	15.4	7.7	10.0	11.7
5/2005	2.5	(0.4)	5.1	6.6	(2.0)	3.4	2.0	0.7
5/2010	2.2	0.0	3.3	3.6	0.1	3.1	2.6	2.0
5/2011	2.3	(1.0)	8.2	6.4	(2.5)	4.6	2.7	1.1
5/2012	1.8	(1.4)	7.4	8.5	(0.1)	5.7	4.2	2.8
30/2012	2.9	1.4	6.8	6.7	7.7	6.9	7.2	7.3

Sample Funds (only three of many reasonable samples)

	A	B	C
Cash: T-Bills	10 %	10 %	10 %
Bonds: US	30	20	10
Bonds: Corp	30	20	15
Stock	30	50	65

For many pension plans, Benefit Increases after Retirement have fallen short of keeping up with inflation. The retired life group has been hurt more than the active life group. The investment return necessary for the indexing of benefits after retirement probably cannot be realized during a period of high inflation.

Changes in Economic Assumptions within an Economic Environment of Inflation

There is powerful motivation to increase the assumed Investment Return used in actuarial calculations, with or without a related increase in Employee Pay Base, because such an assumption change decreases computed contributions. A contribution rate decrease (i) offers relief for employer budget problems and/or (ii) offers a "no cost" way to provide benefit increases.

The wisdom of Investment Return assumed for the future can be determined only by future events. Will the investment record of the next 30 years be the same as the last 30 Years? Will it be like the 5-year period ended in 1980? Better? Worse? What will happen when "Baby Boomers" swell the retired population?



Basic Series Year-by-Year Total Returns (1926 – 2012)

For Stocks, Bonds, and Bills,
RED means a Real Return of less than 3%
[(Total Return - Inflation) < 3%]

For Inflation,
RED means a loss of purchasing power

Year	Large Company Stocks	Small Company Stocks	Long-Term Corporate Bonds	Long-Term Government Bonds	Intermed.-Term Government Bonds	U.S. Treasury Bills	Inflation *
1926	11.62	0.28	7.37	7.77	5.38	3.27	-1.49
1927	37.49	22.10	7.44	8.93	4.52	3.12	-2.08
1928	43.61	39.69	2.84	0.10	0.92	3.56	-0.97
1929	-8.42	-51.36	3.27	1.17	6.01	4.75	0.20
1930	-24.90	-38.15	7.98	4.66	6.72	2.41	-6.03
1931	-43.34	-49.75	-1.85	-5.31	-2.32	1.07	-9.52
1932	-8.19	-5.39	10.32	16.84	8.81	0.96	-10.30
1933	53.99	142.87	10.38	-0.07	1.83	0.30	0.51
1934	-1.44	24.22	13.84	10.03	9.00	0.16	2.03
1935	47.67	40.19	9.61	4.98	7.01	0.17	2.99
1936	33.92	64.80	6.74	7.52	3.06	0.18	1.21
1937	-35.03	-58.01	2.75	0.23	1.56	0.31	3.10
1938	31.12	32.80	6.13	5.53	6.23	-0.02	-2.78
1939	-0.41	0.35	3.97	5.94	4.52	0.02	-0.48
1940	-9.78	-5.16	3.39	6.09	2.96	0.00	0.96
1941	-11.59	-9.00	2.73	0.93	0.50	0.06	9.72
1942	20.34	44.51	2.60	3.22	1.94	0.27	9.29
1943	25.90	88.37	2.83	2.08	2.81	0.35	3.16
1944	19.75	53.72	4.73	2.81	1.80	0.33	2.11
1945	36.44	73.61	4.08	10.73	2.22	0.33	2.25
1946	-8.07	-11.63	1.72	-0.10	1.00	0.35	18.16
1947	5.71	0.92	-2.34	-2.62	0.91	0.50	9.01
1948	5.50	-2.11	4.14	3.40	1.85	0.81	2.71
1949	18.79	19.75	3.31	6.45	2.32	1.10	-1.80
1950	31.71	38.75	2.12	0.06	0.70	1.20	5.79
1951	24.02	7.80	-2.69	-3.93	0.36	1.49	5.87
1952	18.37	3.03	3.52	1.16	1.63	1.66	0.88
1953	-0.99	-6.49	3.41	3.64	3.23	1.82	0.62
1954	52.62	60.58	5.39	7.19	2.68	0.86	-0.50
1955	31.56	20.44	0.48	-1.29	-0.65	1.57	0.37
1956	6.56	4.28	-6.81	-5.59	-0.42	2.46	2.86
1957	-10.78	-14.57	8.71	7.46	7.84	3.14	3.02
1958	43.36	64.89	-2.22	-6.09	-1.29	1.54	1.76
1959	11.96	16.40	-0.97	-2.26	-0.39	2.95	1.50
1960	0.47	-3.29	9.07	13.76	11.76	2.66	1.48
1961	26.89	32.09	4.82	0.97	1.85	2.13	0.67
1962	-8.73	-11.90	7.95	6.89	5.56	2.73	1.22
1963	22.80	23.57	2.19	1.21	1.64	3.12	1.65
1964	16.48	23.52	4.77	3.51	4.04	3.54	1.19
1965	12.45	41.75	-0.46	0.71	1.02	3.93	1.92
1966	-10.06	-7.01	0.20	3.65	4.69	4.76	3.35
1967	23.98	83.57	-4.95	-9.18	1.01	4.21	3.04
1968	11.06	35.97	2.57	-0.26	4.54	5.21	4.72
1969	-8.50	-25.05	-8.09	-5.07	-0.74	6.58	6.11
1970	4.01	-17.43	18.37	12.11	16.86	6.52	5.49
1971	14.31	16.50	11.01	13.23	8.72	4.39	3.36
1972	18.98	4.43	7.26	5.69	5.16	3.84	3.41
1973	-14.66	-30.90	1.14	-1.11	4.61	6.93	8.80
1974	-26.47	-19.95	-3.06	4.35	5.69	8.00	12.20
1975	37.20	52.82	14.64	9.20	7.83	5.80	7.01
1976	23.84	57.38	18.65	16.75	12.87	5.08	4.81
1977	-7.18	25.38	1.71	-0.69	1.41	5.12	6.77
1978	6.56	23.46	-0.07	-1.18	3.49	7.18	9.03
1979	18.44	43.46	-4.18	-1.23	4.09	10.38	13.31
1980	32.42	39.88	-2.62	-3.95	3.91	11.24	12.40
1981	-4.91	13.88	-0.96	1.86	9.45	14.71	8.94
1982	21.41	28.01	43.79	40.36	29.10	10.54	3.87
1983	22.51	39.67	4.70	0.65	7.41	8.80	3.80
1984	6.27	-6.67	16.39	15.48	14.02	9.85	3.95
1985	32.16	24.66	30.09	30.97	20.33	7.72	3.77
1986	18.47	6.85	19.85	24.53	15.14	6.16	1.13
1987	5.23	-9.30	-0.27	-2.71	2.90	5.47	4.41
1988	16.81	22.87	10.70	9.67	6.10	6.35	4.42
1989	31.49	10.18	16.23	18.11	13.29	8.37	4.65
1990	-3.17	-21.56	6.78	6.18	9.73	7.81	6.11
1991	30.55	44.63	19.89	19.30	15.46	5.60	3.06
1992	7.67	23.35	9.39	8.05	7.19	3.51	2.90
1993	9.99	20.98	13.19	18.24	11.24	2.90	2.75
1994	1.31	3.11	-5.76	-7.77	-5.14	3.90	2.67
1995	37.43	34.46	27.20	31.67	16.80	5.60	2.54
1996	23.07	17.62	1.40	-0.93	2.10	5.21	3.32
1997	33.36	22.78	12.95	15.85	8.38	5.26	1.70
1998	28.58	-7.31	10.76	13.06	10.21	4.86	1.61
1999	21.04	29.79	-7.45	-8.96	-1.77	4.68	2.68
2000	-9.11	-3.59	12.87	21.48	12.59	5.89	3.39
2001	-11.88	22.77	10.65	3.70	7.62	3.83	1.55
2002	-22.10	-13.28	16.33	17.84	12.93	1.65	2.38
2003	28.70	60.70	5.27	1.45	2.40	1.02	1.88
2004	10.87	18.39	8.72	8.51	2.25	1.20	3.26
2005	4.91	5.69	5.87	7.81	1.36	2.98	3.42
2006	15.80	16.17	3.24	1.19	3.14	4.80	2.54
2007	5.49	-5.22	2.60	9.88	10.05	4.66	4.08
2008	-37.00	-36.72	8.78	25.87	13.11	1.60	0.09
2009	26.46	28.09	3.02	-14.90	-2.40	0.10	2.72
2010	15.06	31.36	12.44	10.14	7.12	0.12	1.50
2011	2.11	-3.26	17.95	28.23	9.46	0.04	2.96
2012	16.00	18.24	10.68	3.31	2.07	0.06	1.74

GABRIEL, ROEDER, SMITH & COMPANY from SBBI Yearbook * Calculated using December to December CPI-U (1982-84=100, when available), not seasonally adjusted.

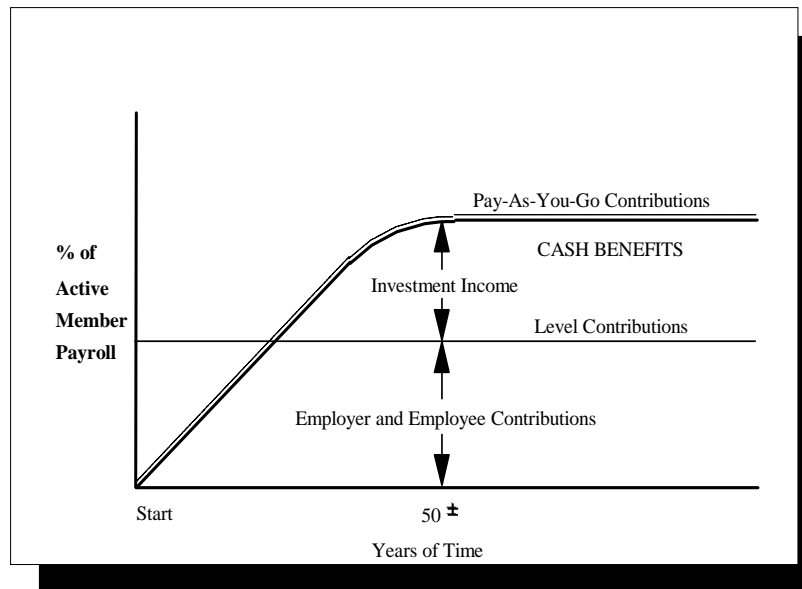
SELECTION OF ASSUMPTIONS USED IN ACTUARIAL VALUATIONS

Economic Assumptions

Investment return
Pay increases to individual employees:
the portion for economic changes
Active member group size and
total payroll growth

Demographic Assumptions

Actual ages at service retirement
Pay increases to individual members:
the portion for merit & seniority
Disability while actively employed
Separations before retirement
Mortality after retirement
Mortality before retirement



RELATIONSHIP BETWEEN PLAN GOVERNING BODY AND THE ACTUARY

The actuary should have the primary responsibility for choosing the *demographic* assumptions used in the actuarial valuation, making use of specialized training and experience.

The actuary and other professionals can provide guidance concerning the choice of suitable economic assumptions, but the basis of the economic assumptions is the assumed rate of *inflation*, a quantity which defies accurate prediction. Given an assumed rate of future inflation, it is very important that this rate be applied in a consistent manner in deriving the assumed rate of investment return, the economic portion of the assumption on pay increases to individual employees, and the assumed rate of growth of active member payroll. Consistent application of assumptions is an area in which the actuary has specialized training.

A sound procedure is that the actuary suggests reasonable alternatives for economic assumptions, followed by discussion involving the actuary, the Plan Governing Body, and other professionals, and the Plan Governing Body then makes a final choice from the various alternatives.

DEFINITIONS OF TECHNICAL TERMS

Accrued Service. Service credited under the system which was rendered before the date of the actuarial valuation.

Actuarial Accrued Liability. The difference between the actuarial present value of system benefits and the actuarial present value of future normal costs. Also referred to as “past service liability.”

Actuarial Assumptions. Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment return and pay increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (pay increases and investment return) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method. A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future benefits” between future normal costs and actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

Actuarial Equivalent. One series of payments is said to be actuarially equivalent to another series of payments if the two series have the same actuarial present value.

Actuarial Gain (Loss). The difference between actual unfunded actuarial accrued liabilities and anticipated unfunded actuarial accrued liabilities -- during the period between two valuation dates. It is a measurement of the difference between actual and expected experience.

Actuarial Present Value. The single sum now which is equal to a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payment.

Actuary. A person who is trained in the application of probability and compound interest to problems in business and finance that involve payment of money in the future, contingent upon the occurrence of future events. Most actuaries in the United States are Members of the American Academy of Actuaries. The Society of Actuaries is an international research, education and membership organization for actuaries in the life and health insurance, employee benefits, and pension fields. It administers a series of examinations leading initially to Associateship and the designation A.S.A. and ultimately to Fellowship with the designation F.S.A.

Amortization. Paying off an interest bearing liability with periodic payments as opposed to paying it off with a single sum payment.

Normal Cost. The portion of the actuarial present value of future benefits that is assigned to the current year by the actuarial cost method. Sometimes referred to as “current cost.”

Unfunded Actuarial Accrued Liabilities. The difference between actuarial accrued liabilities and valuation assets. Sometimes referred to as “unfunded past service liability” or, strangely, “unfunded supplemental present value” or simply as “unfunded liability.”

Valuation Assets. The value of plan assets recognized for valuation purposes. This may not be the same value that is used by the plan for financial reporting.

MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

DECEMBER 31, 2012

Marriage Assumption:	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses.
Pay Increase Timing:	Nine months after the valuation date (October 1).
Decrement Timing:	Decrements of all types are assumed to occur mid-year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Miscellaneous Loads:	For members hired prior to July 1, 2001 computed liabilities and normal costs are increased by 3.25% to reflect service credit for unused sick leave that may be granted at retirement.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Decrement Operation:	Disability, mortality and turnover do not operate during retirement eligibility.
Incidence of Contributions:	Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.
Normal Form of Benefit:	The assumed normal form of benefit is the straight life form.
Benefit Service:	Exact Fractional Service is used to determine the amount of benefit payable.
Actuarial Equivalent Factors:	The interest rate is 7.5% for the Option D form of payment. For Small Pension payouts the interest rate is the lesser of 7.5% or the rate for 20-year Treasury Notes raised to the next highest integer from the December 1 st preceding the Calendar year of retirement. Mortality is based upon a 20% unisex blend of the 1994 Group Annuity Mortality Table set back 3 years for males and 3 year for females.

June 4, 2013

ERFC Board of Trustees
c/o Ms. Jeanne M. Carr, CFA, Executive Director/CIO
8001 Forbes Place, Suite 300
Springfield, Virginia 22151

Re: The Report of the ERFC Annual Actuarial Valuation December 31, 2012

Dear Jeanne:

Enclosed are 12 copies of the report. Please call if you need additional copies.

Sincerely,

A handwritten signature in black ink that reads "Judith A. Kermans". The signature is written in a cursive style with a large, looping initial "J".

Judith A. Kermans, EA, MAAA, FCA

JAK:clh
Enclosures