

**EDUCATIONAL EMPLOYEES' SUPPLEMENTARY  
RETIREMENT SYSTEM OF FAIRFAX COUNTY (ERFC)**  
31ST ANNUAL ACTUARIAL VALUATION  
DECEMBER 31, 2010

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June 9, 2011

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 31st annual actuarial valuation*** of the Educational Employees' Supplementary Retirement System of Fairfax County (ERFC), based on data as of ***December 31, 2010***.

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 ended 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.

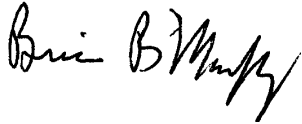
The Actuaries submitting this report are Members of the American Academy of Actuaries (MAAA) as indicated, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

The Board of Trustees  
June 9, 2011

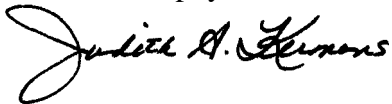
*Your attention is directed particularly to:*

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:clh

## COMMENTS

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**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 (2007, 2009, etc.), are used to set the employer contribution rate for the two year period beginning 18 months after the valuation date. The December 31, 2009 valuation is used to determine the contribution rate for the period July 1, 2011 to June 30, 2013. Actuarial valuations 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. For funding purposes, unfunded accrued liabilities are currently being amortized over a closed 30 year period ending on June 30, 2040. **The amortization period in the December 31, 2010 valuation is 28 years.**

**Contribution Rate:** The contribution rate for the two-year period beginning July 1, 2011 was calculated in the December 31, 2009 valuation to be 4.16% of payroll. However, the rate estimated to be the minimum amount that would avoid a Net Pension Obligation (NPO) for the two-year funding period (July 1, 2011 to June 30, 2013) was **4.34%** based on the following assumptions: 1) investment return of 7.5% in all future years, 2) flat pays in 2010 and 2011, with 4% increases in 2012 and 3) benefit provisions remain unchanged and other plan experience is in line with expectations. Therefore, the funding policy contribution of 4.34% included the calculated ARC of 4.16% for fiscal year 2012 plus a contingency contribution of 0.18%. The December 31, 2009 valuation report stated that if plan experience was worse than this scenario, the 4.34% rate could result in a Net Pension Obligation (NPO) under GASB standards in fiscal year 2013.

Based on the December 31, 2010 valuation results, the GASB ARC contribution rate was calculated to be 4.53%. The increase versus last year’s ARC rate of 4.16% is mainly due to the reflection of new demographic assumptions resulting from the recent experience study (about 32 basis points). The remaining increase of 5 basis points is due to other miscellaneous experience during the year, including a decrease in payroll.

**Plan Experience:** ERFC’s market value rate of return as measured by the actuary was 14.1%, which was very favorable. However, overall experience for ERFC during the year ending December 31, 2010 was slightly unfavorable. This was mainly due to the phase-in of prior losses based on the asset valuation method. The funded percent is now 76.5%, which is the same as last year. 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 76.4% and the ARC for Fiscal 2013 would still be 4.53% of payroll.

**Method Change:** As of December 31, 2010, the ratio of the Funding Value of Assets to the Market Value of Assets was 100%. The Board voted to revise the asset valuation method by collapsing the bases for future gains and losses in an attempt to limit future volatility in the contribution rate.

**Financial Status:** Based upon the December 31, 2010 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 a severe market downturn.

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**SECTION A**

**FINANCIAL PRINCIPLES**

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## FINANCIAL PRINCIPLES AND OPERATIONAL TECHNIQUES

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***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.***

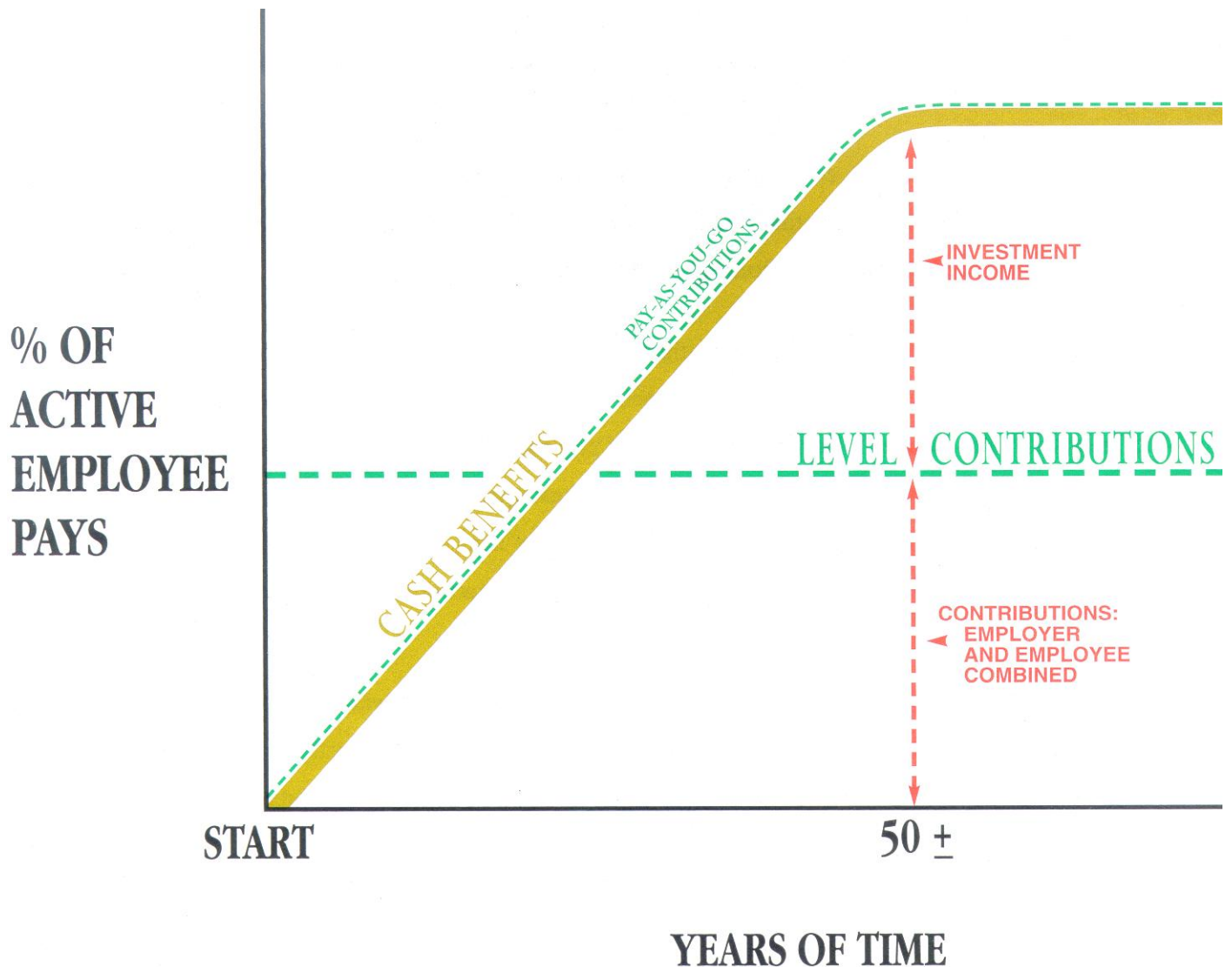
An actuarial valuation has a number of ingredients such as: the rate of investment return which plan assets are assumed to earn; the rates of withdrawal of active members who leave covered employment before qualifying for any monthly benefit; the rates of mortality; the rates of disability; the rates 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

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*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.

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*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*

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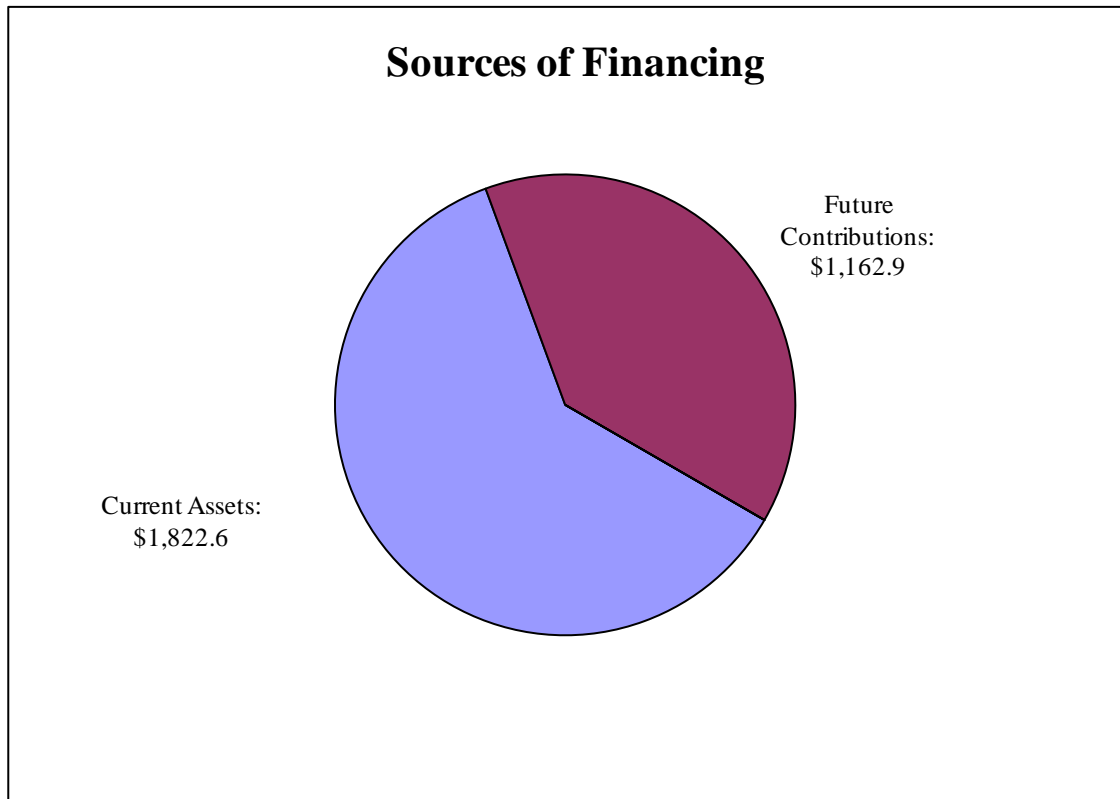
**SECTION B**

**RESULTS OF THE VALUATION**

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**FINANCING \$2,985.5 MILLION OF BENEFIT PROMISES**  
**DECEMBER 31, 2010**  
**(\$ IN MILLIONS)**

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The pie chart above shows that the total amount of benefit promises made to members in *ERFC* and *ERFC 2001* is \$2,985.5 million, based on plan assumptions as of December 31, 2010. 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 \$2,985.5 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 \$2,985.5 million number is that investments earn 7.50% per year. Investment return during 2010, as measured by the actuary, was 14.1% on a market value basis.

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

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Valuation Date	December 31, 2010	December 31, 2009
Contributions for Period Ending June 30	2013	2012
Normal Cost (current cost):		
Service Retirement	3.79%	3.48%
Reduced Service Retirement	0.67%	0.79%
Casualty Benefits	0.10%	0.16%
Separation Benefits	1.35%	1.26%
Totals	5.91%	5.69%
Member Contributions	4.00%	4.00%
Employer Normal Cost	1.91%	1.69%
Unfunded Actuarial Accrued Liability	2.62%	2.47%
<b>Annual Required Contribution (GASB 25)</b>	<b>4.53%</b>	<b>4.16%</b>
Contingency Contribution	0.00%	0.18%
Funding Policy Contribution	4.34%	4.34%

Unfunded liability was amortized as a level percent of payroll over 28 years in the December 31, 2010 valuation (as adopted by the Board) and 29 years in the December 31, 2009 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, 2011 was determined by the December 31, 2009 valuation. The contribution rate was calculated to be 4.34% of payroll (4.16% ARC plus 0.18% Contingency Contribution). This rate was estimated to be the minimum amount that would be sustainable for the period July 1, 2011 to June 30, 2013 based on the following assumptions: 1) investment return of 7.5% in all future years, 2) flat pays in 2010 and 2011, with 4% increases in 2012 and 3) benefit provisions remain unchanged and other plan experience is in line with expectations. It was stated that if plan experience was worse than this scenario, the 4.34% rate could result in a Net Pension Obligation (NPO) under GASB standards in the second year (Fiscal 2013). **In between the December 31, 2009 and December 31, 2010 valuation, a study of plan experience for the 5-year period ending December 31, 2009 was completed. Reflecting the new assumptions in the computed employer contribution rate put upward pressure on the rate causing an increase of 32 basis points in the ARC.**

## 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%	
			<b>Combined July 1, 1999</b>		
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	4.00%	4.34%		4.53%

- 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%.

## ACTUARIAL ACCRUED LIABILITIES

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Accrued liabilities for	Amounts at December 31	
	2010	2009
Present Active Members	\$ 982,439,374	\$ 1,009,084,049
Present Inactive Vested Members	46,528,264	40,523,217
Present Retirees and Beneficiaries	1,355,093,284	1,264,674,546
Total Actuarial Accrued Liabilities	\$2,384,060,922	\$2,314,281,812
Funding Value of Assets	1,822,603,363	1,769,539,999
Unfunded Actuarial Accrued Liability	\$ 561,457,559	\$ 544,741,813
Actuarial Funded Percent	76.45%	76.46%
Market Value Funded Percent	76.45%	71.49%

**ASSETS AND LIABILITIES  
COMPARATIVE STATEMENT**

Valuation Date	Active Member Payroll	Computed Liabilities			Valuation Assets	Unfunded Accrued Liabilities	Funded %
		Retired	Other Members	Total			
(\$ in thousands)							
2/28/1975	\$ 110,571	\$ 4,567	\$ 55,613	\$ 60,180	\$ 7,831	\$ 52,349	13.0%
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	1,264,675	1,049,607	2,314,282	1,769,540	544,742	76.5%
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%

@ After change in asset valuation method.

\$ After change in benefits.

# 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	192%	146%	46%
12/31/2009#	1,208,093	194%	146%	48%
12/31/2010@	1,191,290	200%	153%	47%

@ After change in asset valuation method.

\$ After changes in benefits.

# 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 ... )							
6/30/1990	\$ 83,920	\$ 240,122	\$320,831	\$ 461,450	100%	100%	43%
6/30/1991	89,976	285,618	342,133	510,825	100%	100%	40%
6/30/1992	97,502	318,072	347,996	563,644	100%	100%	43%
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	1,264,675	706,944	1,769,540	100%	100%	23%
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%

@ After change in asset valuation method.

\$ After change in benefits.

# After changes in actuarial assumptions.

**CHANGE IN UNFUNDED ACCRUED LIABILITIES  
DURING THE YEAR ENDING DECEMBER 31, 2010  
(\$ IN MILLIONS)**

	As of December 31	
	2010	2009
1. Beginning unfunded liabilities (UAAL)*:	\$ 570.3	\$ 521.4
2. Unfunded liabilities at End:		
a. Normal Cost (5.87% of estimated 2010 payroll)	\$ 70.4	\$ 68.8
b. Member and employer contributions	89.2	87.1
c. Interest accrual	42.1	38.4
d. Expected UAAL, based on Beginning valuation (1+2a-2b+2c)	593.6	541.5
e. Actual UAAL, from End valuation	561.5	544.7
3. Total Gains/(Losses) during Period:		
a. Total: 2d - 2e	\$ 32.1	\$ (3.2)
b. From non-recurring activities and benefit changes	-	-
c. From differences between assumed and actual Experiences in basic risk areas: 3a - 3b	32.1	(3.2)

\* After experience study.

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, 2010**

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Type of Risk Area	Gain (Loss) in Period			
	\$ in millions			Percent of Liabilities
	<i>ERFC</i>	<i>ERFC 2001</i>	Totals	
<b>Risks Related to Assumptions</b>				
<b>Economic Risk Areas</b>				
Pay Increases	\$39.6	\$13.5	\$ 53.1	2.3%
Investment Return			(16.9)	(0.7)%
<b>Demographic Risk Areas</b>				
Full and Reduced Service Retirements	5.1	0.1	5.2	0.2%
Vested Deferred Retirements	(3.4)	0.4	(3.0)	(0.1)%
Ordinary Death Benefits	0.6	0.0	0.6	0.0%
Service-Connected Death Benefits	0.0	0.0	0.0	0.0%
Ordinary Disability Benefits	(0.2)	(0.1)	(0.3)	0.0%
Service-Connected Disability Benefits	(0.1)	0.0	(0.1)	0.0%
Terminated with Refund	(1.6)	(0.7)	(2.3)	(0.1)%
<b>Data Adjustments and Miscellaneous</b>			(4.2)	(0.2) %
<b>Total Gain (or Loss) During Period</b>			32.1	1.4%
<b>Beginning of Year Accrued Liabilities</b>			2,314.0	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
1990-1991	\$ (2.1)	\$14.4	\$(25.9)	\$(5.5)	\$0.4	\$ (5.0)	\$(23.7)	(3.7)%
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 %

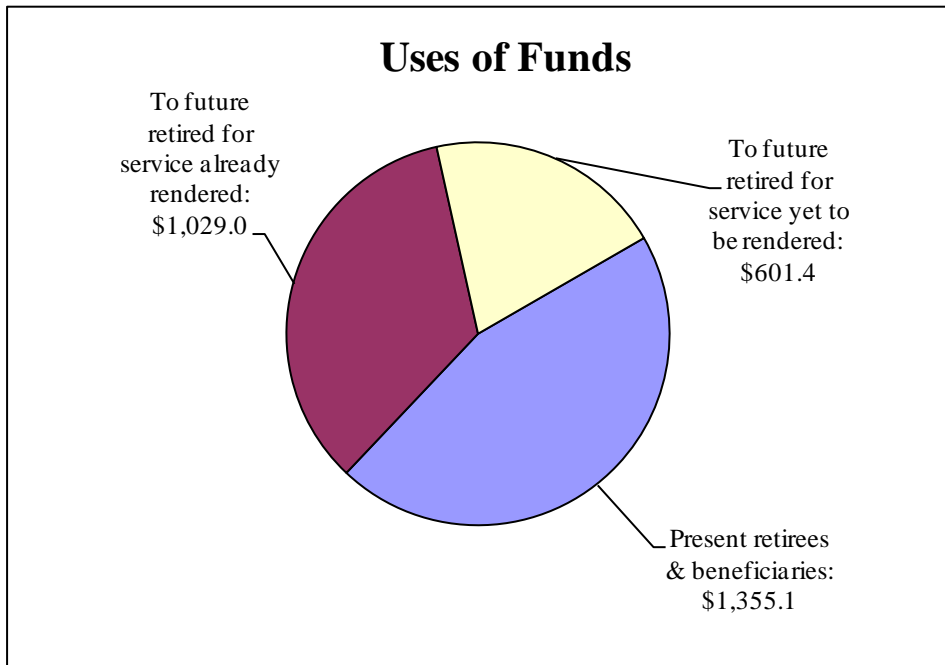
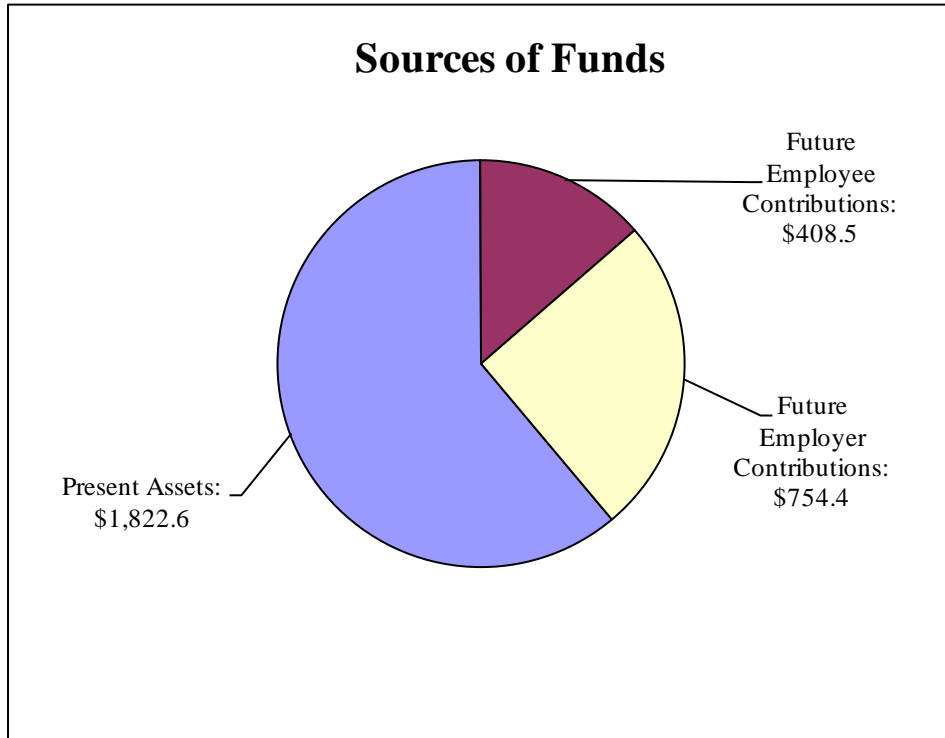
# Experience Study.

\* Updated Gain Formulas.

@ Gain Loss Analysis not performed.

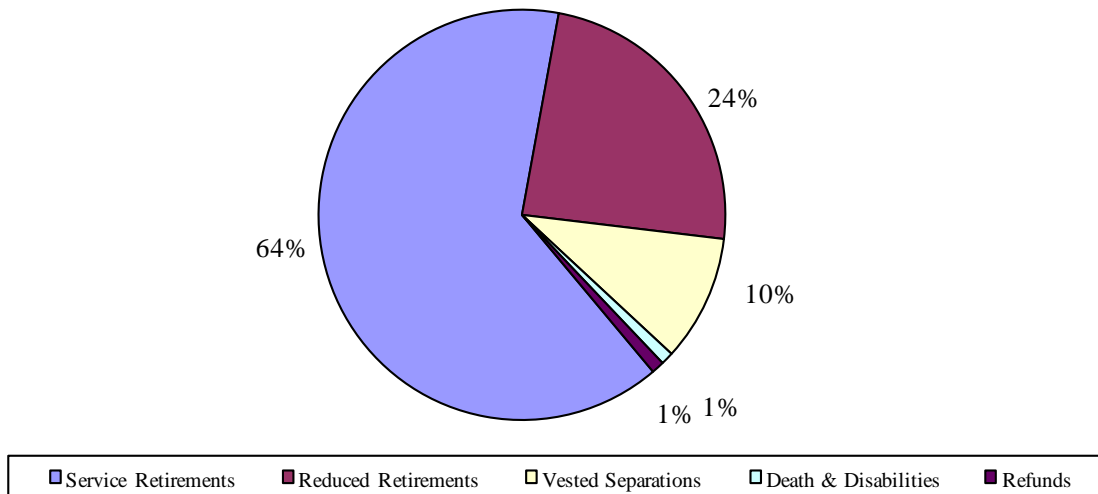
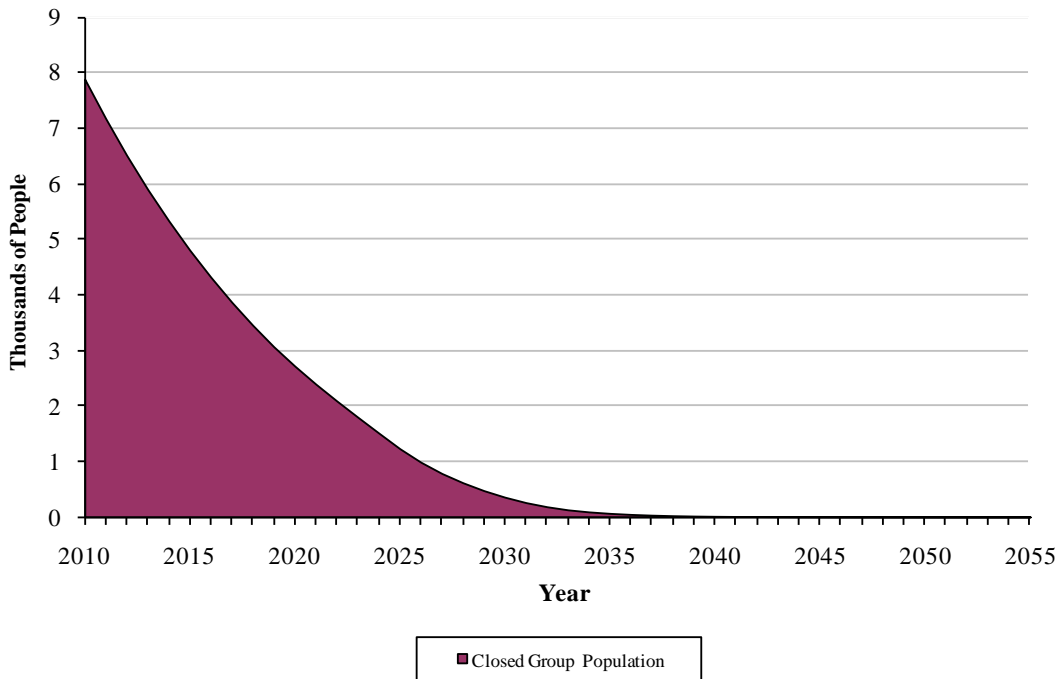
**FINANCING \$2,985.5 MILLION OF BENEFIT PROMISES  
DECEMBER 31, 2010  
(\$ IN MILLIONS)**

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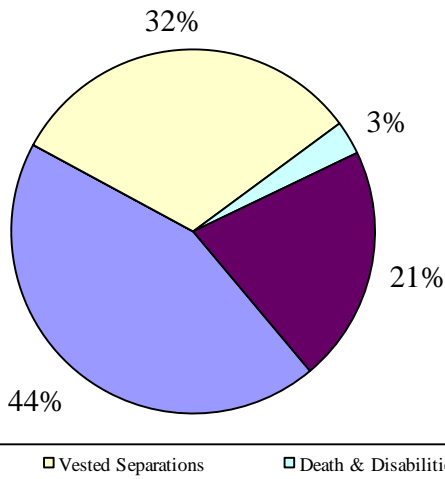
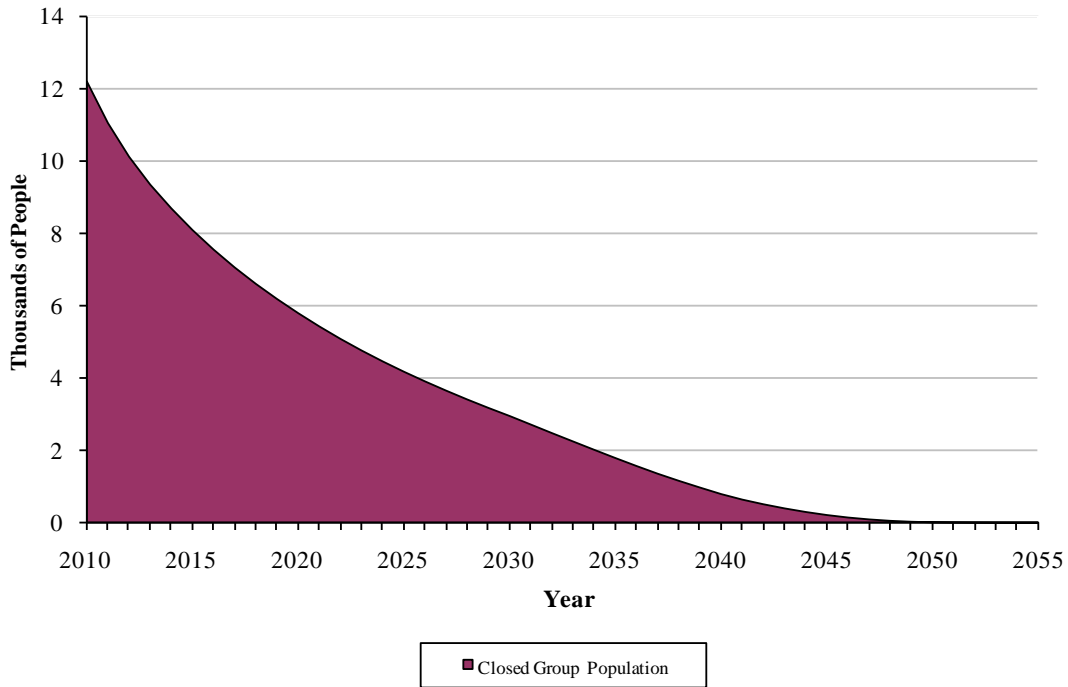
## EXPECTED DEVELOPMENT OF PRESENT POPULATION – ERFC DECEMBER 31, 2010

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The charts show the expected future development of the present population in simplified terms. ERFC presently covers 7,900 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, 2010



The charts show the expected future development of the present population in simplified terms. ERFC 2001 presently covers 12,241 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.



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**SECTION C**

**SUMMARY OF BENEFITS**

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**SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2010**  
**MEMBERS HIRED AFTER JULY 1, 1988 BUT BEFORE JULY 1, 2001**  
***ERFC***

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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 service would have been completed.

**SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2010**  
**MEMBERS HIRED AFTER JULY 1, 1988 BUT BEFORE JULY 1, 2001**  
***ERFC***

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**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, 2010**  
**MEMBERS HIRED AFTER JULY 1, 1988 BUT BEFORE JULY 1, 2001**  
*ERFC*

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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.** Members contribute 4% 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.
  - 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.
  - 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-14.

**SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2010**  
**ALTERNATE BENEFITS AVAILABLE TO MEMBERS**  
**WITH SOME SERVICE BEFORE JULY 1, 1988**

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**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, 2010**  
**MEMBERS HIRED JULY 1, 2001 OR LATER**  
***ERFC 2001***

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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, 2010**  
**MEMBERS HIRED JULY 1, 2001 OR LATER**  
***ERFC 2001***

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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.** Members contribute 4% 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:
- a. **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.
  - b. **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.
  - c. **Option C.** 10 years Certain and Life. Benefit is 96% of the straight life amount.

**SAMPLE BENEFIT COMPUTATION  
FOR *ERFC* MEMBER RETIRING JUNE 30, 2010**

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**Data:**

A.	<u>7/1/1955</u>	Date of Birth
B.	<u>7/1/2010</u>	Effective Date
C.	<u>7/1/1983</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

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***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 3 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 66)**

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 06/30/2010 at age 55 payable until age 66, $(N + Q)/12 =$	\$2,119.21
S. Monthly benefit effective 07/01/2021 at age 66 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**

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**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

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***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

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**SECTION D**

**FINANCIAL INFORMATION**

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**SUMMARY OF FINANCIAL INFORMATION**  
**DECEMBER 31, 2010**

*Revenues and Expenditures*

	December 31	
	2010	2009
<b>REVENUES:</b>		
a. Member Contributions	\$ 47,569,052	\$ 47,977,018
b. Employer Contributions	41,626,695	39,073,301
c. Donated Fixed Assets	0	0
d. Investment Return		
1. Interest and Dividends	41,373,884	44,576,312
2. Net Appreciation	197,040,058	289,832,776
3. Investment Expense	(7,099,467)	(6,778,599)
4. Net Securities Lending	222,517	387,944
5. Real Estate	1,518,832	992,197
6. Miscellaneous	159,513	99,011
7. Total Investment Return	233,215,337	329,109,641
e. Total Revenues	322,411,084	416,159,960
<b>EXPENDITURES:</b>		
a. Refunds of Member Contributions	3,743,400	3,646,429
b. Retirement Benefits Paid	145,927,465	141,050,178
c. Administrative Expense	4,637,246	4,186,130
d. Total Expenditures	154,308,111	148,882,737
<b>RESERVE INCREASE:</b>		
Total Revenues Minus Total Expenditures	\$168,102,973	\$267,277,223

*Market Value of Assets*

	December 31	
	2010	2009
<b>Invested Assets</b>		
Bonds	\$ 139,952,275	\$ 123,870,744
Stocks		
a. Common	625,819,215	564,154,384
b. Preferred	5,663,430	2,193,555
Real Estate	133,643,189	110,742,863
Global Asset Allocation	276,625,640	245,419,771
Hedge Fund of Funds	82,638,665	48,925,918
Private Equity	981,547	0
Commingled Funds	491,535,789	500,048,666
Total Invested Assets	1,756,859,750	1,595,355,901
Short-term Investments and Cash	136,463,257	114,382,636
Receivables and Pre-Paid Expenses	73,519,367	106,761,163
Other Assets (furniture and equipment)	49,641	68,288
Total Assets	1,966,892,015	1,816,567,988
Liabilities	144,354,936	162,133,882
Net Assets	\$1,822,537,079	\$1,654,434,106

## PORTFOLIO COMPOSITION AT MARKET VALUE

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

	Year Ended December 31			
	2010		2009	
	Value	% of Total	Value	% of Total
Bonds	\$ 139,952,275	7.7 %	\$ 123,870,744	7.5 %
Stocks				
a. Common	625,819,215	34.3 %	564,154,384	34.1 %
b. Preferred	5,663,430	0.3 %	2,193,555	0.1 %
Real Estate	133,643,189	7.3 %	110,742,863	6.7 %
Commingled Funds	491,535,789	27.0 %	500,048,666	30.2 %
Hedge Fund of Funds	82,638,665	4.5 %	48,925,918	3.0 %
Private Equity	981,547	0.1 %	0	0.0 %
Global Asset Allocation / Better Beta	276,625,640	15.2 %	245,419,771	14.8 %
Net Short-term Investments and Cash	(7,916,471)	(0.4)%	(47,776,038)	(2.9)%
Receivables, Pre-Paid Expenses and Other	73,593,800	4.0 %	106,854,243	6.5 %
<b>Total Assets</b>	<b>\$1,822,537,079</b>	<b>100.0 %</b>	<b>\$1,654,434,106</b>	<b>100.0 %</b>

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:	2010#	2011	2012	2013	2014
A. Funding Value Beginning of Year	\$1,769,539,999	\$1,822,603,363			
B. Market Value End of Year	1,822,537,079				
C. Market Value Beginning of Year	1,654,434,106				
D. Non-Investment Net Cash Flow	(60,475,118)				
E. Investment Return Assumed Rate	7.5%				
1. Market Total: B-C-D	228,578,091				
2. Amount for Immediate Recognition	130,447,683				
3. Amount for Phased in Recognition: (E1-E2)	98,130,408				
F. Phased in Recognition of Investment Return					
1. Current year: 0.20*E3	19,626,082				
2. First Prior Year	39,407,858	(16,571)			
3. Second Prior Year	(99,172,171)	0	\$(16,571)		
4. Third Prior Year	1,550,155	0	0	\$(16,571)	
5. Fourth Prior year	21,678,875	0	0	0	\$ (16,571)
6. Total Phased-In	(16,909,201)	(16,571)	(16,571)	(16,571)	(16,571)
G. Funding Value End of Year					
G1. Preliminary Funding Value End of Year: A+D+E2+F6	1,822,603,363				
G2. Upper Corridor Limit: 125% x B	2,278,171,349				
G3. Lower Corridor Limit: 75% x B	1,366,902,809				
G4. Funding Value End of Year	1,822,603,363				
H. Actual/Projected Difference Between Market Value and Funding Value	(66,284)	(49,713)	(33,142)	(16,571)	0
I. Market Rate of Return	14.1%				
J. Ratio of Funding Value to Market Value	100.0%				

# Reflects collapsing of bases for future gains and losses.

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:	2006	2007	2008	2009
A. Funding Value Beginning of Year	\$1,718,398,545	\$1,818,930,165	\$1,924,885,815	\$1,733,946,104
B. Market Value End of Year	1,911,319,400	1,999,905,552	1,387,156,883	1,654,434,106
C. Market Value Beginning of Year	1,725,963,523	1,911,319,400	1,999,905,552	1,387,156,883
D. Non-Investment Net Cash Flow	(50,041,822)	(53,575,312)	(55,764,873)	(57,646,288)
E. Investment Return Assumed Rate	7.5%	7.5%	7.5%	7.5%
E1. Market Total: B-C-D	235,397,699	142,161,464	(556,983,796)	324,923,511
E2. Amount for Immediate Recognition	127,003,323	134,410,688	142,275,253	127,884,222
E3. Amount for Phased in Recognition: (E1-E2)	108,394,376	7,750,776	(699,259,049)	197,039,289
F. Phased in Recognition of Investment Return				
F1. Current year: 0.20*E3	21,678,875	1,550,155	(139,851,810)	39,407,858
F2. First Prior Year	1,891,244	21,678,875	1,550,155	(99,172,171)
F3. Second Prior Year	0	1,891,244	21,678,875	1,550,155
F4. Third Prior Year	0	0	1,891,244	21,678,875
F5. Fourth Prior year	0	0	0	1,891,244
F6. Total Recognized Investment Gain or Loss	23,570,119	25,120,274	(114,731,536)	(34,644,039)
G. Funding Value End of Year				
G1. Preliminary Funding Value End of Year: A+D+E2+F6	1,818,930,165	1,924,885,815	1,896,664,659	1,769,539,999
G2. Upper Corridor Limit: 115% x B	2,198,017,310	2,299,891,385	1,733,946,104*	2,068,042,633*
G3. Lower Corridor Limit: 85% x B	1,624,621,490	1,699,919,719	1,040,367,662*	1,240,825,580*
G4. Funding Value End of Year	1,818,930,165	1,924,885,815	1,733,946,104*	1,769,539,999*
H. Actual/Projected Difference Between Market Value and Funding Value	92,389,235	75,019,737	(346,789,221)	(115,105,893)
I. Market Rate of Return	13.8%	7.5%	(28.2)%	23.9%
J. Ratio of Funding Value to Market Value	95.2%	96.2%	125.0%	107.0%

\* Based on 25% corridor.

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**SECTION E**

**COVERED MEMBER DATA**

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**ERFC MEMBERS**  
**WOMEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2010**  
**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	2	46	126					174	\$ 10,489,940	\$60,287
35-39	10	100	412	38				560	37,012,895	66,094
40-44	12	87	366	219	37	2		723	50,548,349	69,915
45-49	8	70	338	169	178	38	1	802	56,373,983	70,292
50-54	10	61	451	210	214	157	32	1,135	80,131,502	70,600
55-59	1	58	602	280	286	138	53	1,418	99,467,187	70,146
60	1	11	99	75	49	19	14	268	19,178,751	71,563
61		5	93	62	56	31	15	262	19,411,043	74,088
62		2	88	68	51	24	3	236	16,116,274	68,289
63	2	1	70	52	62	19	3	209	14,473,596	69,252
64		5	51	45	61	15	4	181	12,421,304	68,626
65		2	23	41	30	11		107	7,675,044	71,729
66		1	28	14	16	4	2	65	4,619,222	71,065
67		1	13	12	12	5	3	46	3,151,145	68,503
68		2	10	12	15	8	5	52	3,470,007	66,731
69		1	3	4	8	3	2	21	1,386,963	66,046
70			3	3	1	6	1	14	852,998	60,928
71			3	3	1			7	305,836	43,691
72			3		2	2		7	344,879	49,268
73			1	1	3	2	1	8	495,472	61,934
74				1	2		2	5	305,683	61,137
75 & Over			1	1		1	2	5	227,427	45,485
<b>Totals</b>	<b>46</b>	<b>453</b>	<b>2,784</b>	<b>1,310</b>	<b>1,084</b>	<b>485</b>	<b>143</b>	<b>6,305</b>	<b>\$438,459,500</b>	<b>\$69,542</b>

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

Age: 52.2 years.

Service: 16.2 years.

Annual Pay: \$69,542



**ERFC MEMBERS**  
**MEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2010**  
**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		7	28					35	\$ 2,218,429	\$63,384
35-39	1	15	178	15				209	14,793,770	70,784
40-44	1	16	179	119	11			326	24,664,495	75,658
45-49	3	7	105	93	61	17		286	22,226,107	77,714
50-54		4	90	53	63	67	12	289	24,358,800	84,287
55-59		6	77	37	52	43	22	237	20,294,040	85,629
60			7	8	6	6	5	32	2,601,838	81,307
61		2	15	10	7	3	3	40	3,266,234	81,656
62		3	8	10	5	2	1	29	2,382,257	82,147
63		1	8	6	4	1		20	1,675,705	83,785
64			15	3	2	2		22	1,766,559	80,298
65			7	6	3			16	1,377,237	86,077
66			6	5	2	1		14	1,130,986	80,785
67			5	3	1	1		10	747,828	74,783
68		2	7	2	2			13	1,003,022	77,156
69			2	1	1	1		5	467,755	93,551
70			4					4	249,673	62,418
71			2		1			3	203,191	67,730
72				1				1	81,046	81,046
73			1					1	38,059	38,059
75 & Over			1	1	1			3	91,597	30,532
<b>Totals</b>	<b>5</b>	<b>63</b>	<b>745</b>	<b>373</b>	<b>222</b>	<b>144</b>	<b>43</b>	<b>1,595</b>	<b>\$125,638,628</b>	<b>\$78,770</b>

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

Age: 49.0 years.

Service: 16.3 years.

Annual Pay: \$78,770

**ERFC 2001 MEMBERS**  
**WOMEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2010**  
**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	\$ 38,800	\$19,400
20-24	455							455	18,969,543	41,691
25-29	1,876	280						2,156	102,141,458	47,375
30-34	913	1,033						1,946	103,055,411	52,958
35-39	486	520						1,006	55,269,901	54,940
40-44	570	412						982	51,115,414	52,052
45-49	578	470						1,048	49,066,376	46,819
50-54	516	571						1,087	51,909,297	47,755
55-59	277	503						780	40,975,392	52,533
60	32	67						99	5,306,745	53,603
61	27	63						90	4,890,006	54,333
62	27	60						87	4,601,463	52,890
63	16	40						56	2,968,657	53,012
64	13	36						49	3,046,149	62,166
65	5	22						27	1,534,597	56,837
66	5	16						21	966,381	46,018
67	1	10						11	698,823	63,529
68	1	8						9	448,474	49,830
69	2	3						5	199,832	39,966
70		3						3	162,998	54,333
71		1						1	73,659	73,659
72	1							1	27,093	27,093
73	1							1	28,952	28,952
75 & Over		1						1	80,495	80,495
<b>Totals</b>	<b>5,804</b>	<b>4,119</b>						<b>9,923</b>	<b>\$497,575,916</b>	<b>\$50,144</b>

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

Age: 39.1 years.

Service: 4.3 years.

Annual Pay: \$50,144

**ERFC 2001 MEMBERS**  
**MEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2010**  
**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	
20-24	61	1						62	\$ 2,281,010	\$36,790
25-29	355	48						403	18,322,406	45,465
30-34	244	289						533	28,318,729	53,131
35-39	126	217						343	20,052,657	58,463
40-44	93	173						266	16,654,396	62,611
45-49	94	99						193	12,157,935	62,994
50-54	92	109						201	12,454,155	61,961
55-59	55	87						142	8,715,171	61,374
60	11	19						30	1,879,803	62,660
61	13	14						27	1,454,683	53,877
62	6	16						22	1,663,088	75,595
63	7	17						24	1,427,671	59,486
64	8	18						26	1,631,449	62,748
65	3	5						8	508,626	63,578
66	5	5						10	492,610	49,261
67	1	5						6	351,676	58,613
68	3	2						5	327,613	65,523
69	1	4						5	273,370	54,674
70	1	2						3	183,034	61,011
71		1						1	76,809	76,809
72		1						1	79,094	79,094
73		2						2	54,341	27,171
74		1						1	73,254	73,254
75 & Over	3	1						4	182,566	45,642
<b>Totals</b>	<b>1,182</b>	<b>1,136</b>						<b>2,318</b>	<b>\$129,616,146</b>	<b>\$55,917</b>

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

Age: 39.7 years.  
Service: 4.7 years.  
Annual Pay: \$55,917

**ALL ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2010**  
**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	\$ 38,800	\$ 19,400
20-24	516	1						517	21,250,553	41,104
25-29	2,231	328						2,559	120,463,864	47,075
30-34	1,159	1,375	154					2,688	144,082,509	53,602
35-39	623	852	590	53				2,118	127,129,223	60,023
40-44	676	688	545	338	48	2		2,297	142,982,654	62,248
45-49	683	646	443	262	239	55	1	2,329	139,824,401	60,036
50-54	618	745	541	263	277	224	44	2,712	168,853,754	62,262
55-59	333	654	679	317	338	181	75	2,577	169,451,790	65,755
60	44	97	106	83	55	25	19	429	28,967,137	67,522
61	40	84	108	72	63	34	18	419	29,021,966	69,265
62	33	81	96	78	56	26	4	374	24,763,082	66,211
63	25	59	78	58	66	20	3	309	20,545,629	66,491
64	21	59	66	48	63	17	4	278	18,865,461	67,861
65	8	29	30	47	33	11		158	11,095,504	70,225
66	10	22	34	19	18	5	2	110	7,209,199	65,538
67	2	16	18	15	13	6	3	73	4,949,472	67,801
68	4	14	17	14	17	8	5	79	5,249,116	66,445
69	3	8	5	5	9	4	2	36	2,327,920	64,664
70	1	5	7	3	1	6	1	24	1,448,703	60,363
71		2	5	3	2			12	659,495	54,958
72	1	1	3	1	2	2		10	532,112	53,211
73	1	2	2	1	3	2	1	12	616,824	51,402
74		1		1	2		2	6	378,937	63,156
75 & Over	3	2	2	2	1	1	2	13	582,085	44,776
<b>Totals</b>	<b>7,037</b>	<b>5,771</b>	<b>3,529</b>	<b>1,683</b>	<b>1,306</b>	<b>629</b>	<b>186</b>	<b>20,141</b>	<b>\$1,191,290,190</b>	<b>\$59,148</b>

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

Age: 44.0 years.

Service: 9.0 years.

Annual Pay: \$59,148

**ACTIVE MEMBERS BY YEARS OF SERVICE**  
**DECEMBER 31, 2010**

Service Years	Number of Members			Annual Pays	
	Males	Females	Total	Total	Average
0	258	1,349	1,607	\$ 70,259,435	\$43,721
1	189	1,015	1,204	54,434,229	45,211
2	217	1,121	1,338	64,438,774	48,161
3	255	1,227	1,482	71,932,398	48,537
4	268	1,138	1,406	72,391,105	51,487
5	294	1,175	1,469	77,400,402	52,689
6	283	1,001	1,284	70,464,712	54,879
7	220	820	1,040	60,617,214	58,286
8	194	715	909	53,601,954	58,968
9	208	861	1,069	65,739,707	61,496
10	214	757	971	59,190,353	60,958
11	203	671	874	55,718,267	63,751
12	137	576	713	46,047,431	64,583
13	107	410	517	34,776,089	67,265
14	84	370	454	32,033,280	70,558
15	88	261	349	25,057,500	71,798
16	102	318	420	31,088,431	74,020
17	101	295	396	29,513,555	74,529
18	44	231	275	20,511,130	74,586
19	38	205	243	18,678,188	76,865
20	59	273	332	26,075,913	78,542
21	41	220	261	20,479,684	78,466
22	41	235	276	21,838,149	79,124
23	31	166	197	16,145,282	81,956
24	50	190	240	21,030,633	87,628
25	43	158	201	17,319,867	86,168
26	32	108	140	11,671,266	83,366
27	25	83	108	9,308,551	86,190
28	16	64	80	7,086,865	88,586
29	28	72	100	9,389,296	93,893
30 & Up	43	143	186	17,050,530	91,670
<b>Totals</b>	<b>3,913</b>	<b>16,228</b>	<b>20,141</b>	<b>\$1,191,290,190</b>	<b>\$59,148</b>

## PERSONS IN VALUATIONS - COMPARATIVE STATEMENT

### *Active Members*

Valuation Date	Number			Average Pay	Annual Increase In Average Pay		Price Inflation (CPI-U) Last Year
	ERFC	ERFC 2001	Total		Last Year	Last 5 Years	
	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 %

## 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%

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, 2010**  
**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	599	\$ 8,914,744		\$8,914,744
Optional Forms	25	424,395		424,395
Age and Service - Early:				
Straight Life	431	3,965,646	\$158,640	4,124,286
Optional Forms	20	228,199	12,845	241,044
Age and Service Totals	1,075	13,532,984	171,485	13,704,469
Duty Disability:				
Straight Life	9	255,448		255,448
Non-Duty Disability				
Straight Life	57	511,004		511,004
Age and Service Survivor Beneficiary, Duty Death, and Non-Duty Death	50	457,254	7,314	464,568
Other Totals	116	1,223,706	7,314	1,231,020
<b>Total Benefits</b>	<b>1,191</b>	<b>\$14,756,690</b>	<b>\$178,799</b>	<b>\$14,935,489</b>



**BENEFIT FORMULAS (EFFECTIVE JULY 1, 1988)  
 RETIREES AND BENEFICIARIES DECEMBER 31, 2010  
 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	3,656	\$50,000,698	\$30,596,734	\$80,597,432
Optional Forms	456	6,126,554	4,040,499	10,167,053
Age and Service - Early:				
Straight Life	3,216	14,845,110	17,782,526	32,627,636
Optional Forms	193	1,111,382	1,206,192	2,317,574
Age and Service Totals	7,521	72,083,744	53,625,951	125,709,695
Duty Disability:				
Straight Life	13	44,361		44,361
Optional Forms	1	1,716		1,716
Non-Duty Disability:				
Straight Life	134	485,274	19,585	504,859
Optional Forms	17	55,719		55,719
Age and Service Survivor Beneficiary, Duty Death, and Non-Duty Death	91	494,931	254,583	749,514
Other Totals	256	1,082,001	274,168	1,356,169
<b>Total Benefits</b>	<b>7,777*</b>	<b>\$73,165,745*</b>	<b>\$53,900,119</b>	<b>\$127,065,864</b>

\* Includes benefits split in DROs.

**BENEFIT FORMULAS (EFFECTIVE JULY 1, 2001)  
 RETIREES AND BENEFICIARIES DECEMBER 31, 2010  
 BY TYPE OF BENEFIT BEING PAID**

---

<b>Type of Pension Being Paid</b>	<b>No.</b>	<b>Annual Amounts</b>
Age and Service - Normal: Straight Life	95	\$313,498
Optional Forms	16	45,280
Age and Service - Early: Straight Life		
Optional Forms		
Age and Service Totals	111	358,778
Duty Disability: Straight Life		
Optional Forms		
Non-Duty Disability: Straight Life		
Optional Forms		
Age and Service Survivor Beneficiary, Duty Death, and Non-Duty Death	2	6,529
Other Totals	2	6,529
<b>Total Benefits</b>	<b>113</b>	<b>\$365,307</b>

**ORIGINAL BENEFIT FORMULAS (BEFORE JULY 1, 1988)  
 RETIREES AND BENEFICIARIES DECEMBER 31, 2010  
 CURRENT ANNUAL BENEFITS - TABULATED BY ATTAINED AGES**

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Attained Ages	No.	Annual Amount
57	4	\$ 18,186
58	1	2,509
59	3	19,021
60	3	23,021
61	2	8,904
62	2	21,828
63	10	50,468
64	12	71,999
65	3	43,624
66	2	23,157
67	2	14,377
68	2	18,962
69	5	52,935
70	3	33,374
71	15	161,595
72	25	316,913
73	39	596,463
74	45	829,107
75	66	1,191,825
76	59	1,102,786
77	59	1,114,360
78	55	918,903
79	65	1,018,908
80-84	323	4,264,210
85-89	250	2,190,254
90 & Up	136	827,800
<b>Total</b>	<b>1,191</b>	<b>\$14,935,489</b>

**BENEFIT FORMULAS (EFFECTIVE JULY 1, 1988)**  
**RETIREES AND BENEFICIARIES DECEMBER 31, 2010**  
**CURRENT ANNUAL BENEFITS - TABULATED BY ATTAINED AGES**

---

Attained Ages	No.	Annual Amount
Under 40	5	\$ 29,857
40-44	4	8,091
45	1	2,174
46	1	764
47	6	18,704
48	4	19,575
50	3	94,881
51	9	176,894
52	9	204,909
53	15	296,277
54	28	649,316
55	94	1,999,231
56	152	3,508,400
57	167	3,831,788
58	230	5,238,862
59	270	6,108,678
60	337	7,405,596
61	383	9,325,647
62	476	10,822,086
63	600	13,465,879
64	599	12,845,042
65	486	9,922,519
66	440	5,053,667
67	417	4,436,631
68	412	4,377,802
69	320	3,310,974
70-74	1,330	14,454,674
75-79	714	7,166,399
80 & Up	265	2,290,547
<b>Totals*</b>	<b>7,777</b>	<b>\$127,065,864</b>

\* Includes benefits split in DROs.

***ERFC 2001***  
**RETIREES AND BENEFICIARIES DECEMBER 31, 2010**  
**CURRENT ANNUAL BENEFITS - TABULATED BY ATTAINED AGES**

---

<b>Attained Ages</b>	<b>No.</b>	<b>Annual Amount</b>
59	1	\$ 3,210
60	11	34,268
61	15	46,962
62	14	41,121
63	12	33,320
64	15	51,289
65	10	45,139
66	11	35,916
67	5	13,794
68	9	29,407
69	4	11,772
70-74	5	16,692
75-79	1	2,417
<b>Totals</b>	<b>113</b>	<b>\$365,307</b>

**ORIGINAL BENEFIT FORMULAS (BEFORE JULY 1, 1988)**  
**INACTIVE VESTED MEMBERS DECEMBER 31, 2010**  
**ANNUAL DEFERRED BENEFITS - BY ATTAINED AGES**

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Attained Ages	No.	Annual Amount
55	1	\$ 1,915
57	2	2,615
58	6	7,352
59	3	4,794
60	3	2,953
61	1	1,106
62	2	7,238
63	3	7,915
64	3	2,885
65	2	1,995
66	1	1,750
69	1	2,429
73	1	1,498
75	1	1,392
<b>Totals*</b>	<b>30</b>	<b>\$47,837</b>

\* Includes 6 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, 2010  
 ANNUAL DEFERRED BENEFITS - BY ATTAINED AGES**

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<b>Attained Ages</b>	<b>No.</b>	<b>Annual Amount</b>
30	1	\$ 1,175
31	1	1,410
32	32	66,223
33	48	95,806
34	68	137,684
35	67	120,474
36	92	144,359
37	95	167,818
38	107	190,382
39	100	196,207
40	123	275,077
41	110	236,259
42	100	232,574
43	101	254,302
44	84	160,128
45	86	198,651
46	76	160,829
47	80	214,015
48	67	156,081
49	61	233,374
50	61	163,248
51	61	245,218
52	57	226,919
53	57	183,640
54	72	228,981
55	42	110,915
56	33	109,365
57	38	128,879
58	33	101,494
59	35	156,672
60	25	91,207
61	21	73,512
62	24	147,747
63	17	93,762
64	15	64,249
65 & Up	17	45,012
<b>Totals</b>	<b>2,107</b>	<b>\$5,413,648</b>

**ERFC 2001**

**INACTIVE VESTED MEMBERS DECEMBER 31, 2010  
ANNUAL DEFERRED BENEFITS - BY ATTAINED AGES**

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<b>Attained Ages</b>	<b>No.</b>	<b>Annual Amount</b>
26	1	\$ 2,691
27	7	21,858
28	11	34,945
29	34	119,682
30	39	133,101
31	52	169,470
32	51	174,241
33	44	142,604
34	29	82,880
35	22	61,210
36	25	67,014
37	16	44,592
38	7	23,433
39	19	49,243
40	10	25,723
41	7	17,816
42	13	35,032
43	11	26,371
44	3	5,825
45	9	23,389
46	10	25,282
47	7	14,107
48	11	23,997
49	11	23,085
50	8	23,627
51	12	27,869
52	9	23,873
53	9	23,940
54	12	34,689
55	13	27,607
56	11	29,593
57	17	52,576
58	13	37,300
59	17	44,543
60	6	16,353
61	1	783
62	2	2,368
63	2	5,028
65 & Over	1	5,127
<b>Totals</b>	<b>582</b>	<b>\$1,702,867</b>



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**SECTION F**

**FINANCIAL REPORTING (GASB)**

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

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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 Plan Net Assets Available for Benefits** (page F-2) provides information about the market value of plan assets by investment category.
- **Statement of Changes in 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.

## STATEMENT OF REPORTED PLAN ASSETS

	December 31	
	2010	2009
Assets		
Cash and short-term investments		
Cash	\$ 2,468,850	\$ (2,581,755)
Cash with fiscal agent	1,523,063	2,112,046
Cash collateral for securities on loan	69,178,433	59,505,933
Short-term investments	63,268,119	55,321,620
Prepaid assets	24,792	24,792
Total cash & short-term investments	\$ 136,463,257	\$ 114,382,636
Receivables		
Interest and dividends	2,546,841	2,838,354
Securities Sold	70,520,723	103,922,318
Miscellaneous accounts receivable	451,803	491
Total Receivables	\$ 73,519,367	\$ 106,761,163
Investments at fair value		
US Government obligations	\$ 9,793,077	\$ 6,942,203
Mortgage-backed securities	2,438,190	2,837,568
Domestic corporate bonds	87,613,743	83,421,698
International and Convertible bonds	40,107,265	30,669,275
Common stock	625,819,215	564,154,384
Preferred stock	5,663,430	2,193,555
Global Asset Allocation / Better Beta	276,625,640	245,419,771
Real Estate	133,643,189	110,742,863
Hedge Fund of Funds	82,638,665	48,925,918
Private Equity	981,547	0
Commingled Funds - Bonds	261,779,323	500,048,666
Commingled Funds - Equity	229,756,466	0
Total Investments	\$1,756,859,750	\$1,595,355,901
Other Assets (Furniture and equip. net of accum. deprec.)	49,641	68,288
Total Assets	\$1,966,892,015	\$1,816,567,988
Liabilities		
Accounts payable	\$ 886	\$ 0
Securities purchased	75,175,617	102,627,949
Securities lending collateral	69,178,433	59,505,933
Total Liabilities	\$ 144,354,936	\$ 162,133,882
Net Assets held in trust for pension benefits (a schedule of funding progress is presented on page F-5)	\$1,822,537,079	\$1,654,434,106

## STATEMENT OF CHANGES IN REPORTED PLAN ASSETS

	Reconciliation as of December 31	
	2010	2009
Additions		
Contributions		
Employer	\$ 41,626,695	\$ 39,073,301
Plan members	47,569,052	47,977,018
Donated fixed assets	0	0
Total Contributions	89,195,747	87,050,319
Investment Income		
Net appreciation in fair value of investments	197,040,058	289,832,776
Interest and dividends	41,373,884	44,576,312
Real estate	1,518,832	992,197
Net securities lending	222,517	387,944
Miscellaneous	159,513	99,011
Total Investment Income	240,314,804	335,888,240
Less: Investment Expenses	7,099,467	6,778,599
Net Investment Income	233,215,337	329,109,641
Total Additions	322,411,084	416,159,960
Deductions		
Benefits	145,927,465	141,050,178
Refunds	3,743,400	3,646,429
Administrative expense	4,637,246	4,186,130
Total Deductions	154,308,111	148,882,737
Net increase/(decrease)	\$ 168,102,973	\$ 267,277,223
Net Assets held in trust for pension benefits		
Beginning of year	\$1,654,434,106	\$1,387,156,883
End of year	\$1,822,537,079	\$1,654,434,106

**NOTES TO THE FINANCIAL STATEMENTS  
FOR THE YEAR ENDED DECEMBER 31, 2010**

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Membership information as of December 31, 2010, the date of the latest actuarial valuation, is as follows:

Retirees and beneficiaries	9,081
Inactive members	2,719
Active members	20,141
<b>Total</b>	<b>31,941</b>

***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 currently contribute 4% of pay. 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, 2010, the remaining amortization period is 28 years.

On the basis of the December 31, 2010 actuarial valuation, the Annual Required Employer Contribution for Fiscal 2013 determined in accordance with GASB Statement No. 25 for accounting purposes was determined to be 4.53% of payroll as follows:

1) Normal Cost	5.91%
2) Accrued Liability	2.62%
3) Total	8.53%
4) Member Contribution	4.00%
5) Annual Required Contribution	4.53%

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

<b>Actuarial Valuation Date</b>	<b>Actuarial Value of Assets (a)</b>	<b>Actuarial Accrued Liability (AAL) - Entry Age (b)</b>	<b>Unfunded AAL (UAAL) (b) - (a)</b>	<b>Funded Ratio (a)/(b)</b>	<b>Covered Payroll (c)</b>	<b>UAAL as a Percent of Covered Payroll [(b) - (a)] / (c)</b>
6/30/90	\$ 461,450	\$ 644,873	\$ 183,423	71.56 %	\$ 411,970	44.52 %
6/30/91	510,825	717,727	206,902	71.17 %	451,873	45.79 %
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	2,314,282	544,742	76.46 %	1,208,093	45.09 %
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 %

# After Experience Study.

\$ After change in benefit structure.

\* After changes in actuarial assumptions and/or methods.

## SCHEDULE OF EMPLOYER CONTRIBUTIONS

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<b>Plan Year Ended June 30</b>	<b>Annual Required Contribution</b>	<b>Percent Contributed</b>
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%

The figures on this page show the actual employer contribution required for compliance with Governmental Accounting Standards (GASB 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**

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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, 2010
Actuarial cost method	Individual entry age actuarial cost method (see page G-2)
Amortization method	Level percent of payroll
Remaining amortization period	28 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%
*Includes wage inflation at	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**

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<b>Fiscal Year Ended June 30</b>	<b>ARC (Annual Required ER Conts)</b>	<b>Interest on Prior Year's NPO</b>	<b>ARC Adjustment (NPO Amort)</b>	<b>Net Change to ARC</b>	<b>APC (Annual Pension Cost)</b>	<b>Actual ER Contribution</b>	<b>Change in NPO</b>	<b>New NPO (NPA) Balance</b>
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)	35,116,049	37,868,623	(2,752,574)	(5,483,396)

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.

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**SECTION G**

**ACTUARIAL ASSUMPTIONS & MISCELLANEOUS**

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## APPENDIX

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

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*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%***.

*Pay increase assumptions* for individual active members are shown for accrued years of service on page G-8. Part of the assumption for accrued service is for merit and/or seniority increase, and the other 3.75% recognizes wage inflation. No specific 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.

*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.

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*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.

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*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.

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

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## **ERFC REGULATIONS – FUNDING POLICY AND EMPLOYER CONTRIBUTION RATE**

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

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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 §§ 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 § 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.

## SINGLE LIFE RETIREMENT VALUES

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### 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	111.15	5.1730%	3.6990%	11.60	13.27
75	86.55	94.60	5.8940%	4.4280%	9.55	10.66
80	70.31	76.56	7.8960%	6.7140%	7.37	8.17
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

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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

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<b>Pay Increase Assumption</b>			
<b>Service Index</b>	<b>Merit &amp; Seniority</b>	<b>Base (Economy)</b>	<b>Increase Next Year</b>
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

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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
1/2006	2.5	2.2	(1.3)	0.7	13.0	3.9	6.6	8.7
1/2007	4.1	0.6	5.6	(1.4)	1.3	1.7	1.5	1.2
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
5/1975	6.9	(1.0)	(0.7)	(0.8)	(3.5)	(1.2)	(1.7)	(2.1)
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
<b>30/2010</b>	<b>3.2</b>	<b>1.8</b>	<b>6.8</b>	<b>6.8</b>	<b>7.3</b>	<b>6.9</b>	<b>7.0</b>	<b>7.1</b>

#### 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" begin to swell the retired population?



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

**Year-by-Year Total Returns (1926-2010)**

**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

GABRIEL, ROEDER, SMITH & COMPANY from SBBi Yearbook

\* Calculated using December to December CPI-U (1982-84=100, when available), not seasonally adjusted.

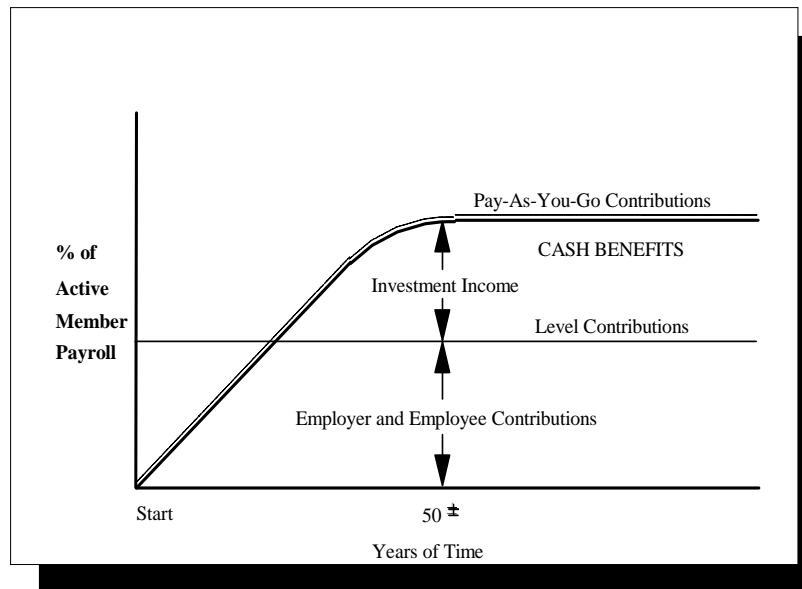
# SELECTION OF ASSUMPTIONS USED IN ACTUARIAL VALUATIONS

## 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

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***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, 2010

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<b>Marriage Assumption:</b>	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.
<b>Pay Increase Timing:</b>	Nine months after the valuation date (October 1).
<b>Decrement Timing:</b>	Decrements of all types are assumed to occur mid-year.
<b>Eligibility Testing:</b>	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.
<b>Miscellaneous Loads:</b>	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.
<b>Decrement Relativity:</b>	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
<b>Decrement Operation:</b>	Disability, mortality and turnover do not operate during retirement eligibility.
<b>Incidence of Contributions:</b>	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.
<b>Normal Form of Benefit:</b>	The assumed normal form of benefit is the straight life form.
<b>Benefit Service:</b>	Exact Fractional Service is used to determine the amount of benefit payable.
<b>Actuarial Equivalent Factors:</b>	Effective January 1, 2006. The interest rate is 7.5%, except for Small Pension payouts where the interest rate, if smaller, is the rate for 20-year Treasury Notes raised to the next highest integer from the December 1 <sup>st</sup> preceding the Calendar year of retirement. Mortality is based upon a 30% unisex blend of the 1994 Group Annuity Mortality Table set back 2 years for males and 1 year for females.

June 9, 2011


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, 2010**

Dear Jeanne:

Enclosed are 10 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

JAK:clh  
Enclosures