

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

29TH ANNUAL ACTUARIAL VALUATION DECEMBER 31, 2008

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May 13, 2009

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 29th annual actuarial valuation of the Educational Employees' Supplementary Retirement System of Fairfax County (ERFC), based on data as of **December 31, 2008**.

*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 June 30, 2004.

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.

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, MAAA

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#### **COMMENTS**

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

Contribution Rate Policy: Actuarial valuations as of odd numbered years (2005, 2007, etc.) are used to set the employer contribution rate for the two year period beginning 18 months after the valuation date. The December 31, 2007 valuation was used to determine the contribution rate for the period July 1, 2009 to June 30, 2011. 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 was extended to 30 years from 24 years in the December 31, 2008 valuation.

Contribution Rate: The contribution rate for the two year period beginning July 1, 2009 was calculated in the December 31, 2007 valuation to be 3.20% of payroll. This rate was estimated to be the minimum amount that would avoid a Net Pension Obligation (NPO) for the two year funding period (July 1, 2009 to June 30, 2011) based on the following assumptions: 1) investment return of 0.0% in 2008, 2) investment return of 7.5 % in all future years (after 2008) and 3) benefit provisions remain unchanged and other plan experience is in line with expectations. It was understood that if plan experience was worse than that scenario, the 3.20% rate could result in a NPO in the second year.

**Asset Valuation Method:** The ERFC Board elected to change the Market Value Corridor on assets to 25% (from 15%).

*Plan Experience:* Experience for ERFC and virtually every plan in the country during the year ending December 31, 2008 was unfavorable. ERFC's market value rate of return as measured by the actuary was -28.2%. As a result of Plan experience, the 30 year amortization period and the expansion of the Market Value Corridor, the ARC for Fiscal 2011 is 4.04% of payroll and the funded percent is now 76.9%. Since the ARC is higher than the funding policy contribution for Fiscal year 2011, there will be a NPO for that 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 61.5% and the ARC for Fiscal 2011 would be 5.69% of payroll.

*Outlook:* The December 31, 2009 valuation will determine the contribution for Fiscal 2012 and Fiscal 2013. While no one can project accurately what ERFC's investment return will be in 2009, we have made a rough projection of what the contribution rate will be in Fiscal 2012 if ERFC earns 0% return in 2009. The result is 4.76% of payroll. If ERFC has positive investment return in 2009, the contribution rate might be lower. If the return is negative in 2009, the rate could be higher.

**Financial Status:** Based upon the December 31, 2008 valuation, the Fairfax County ERFC is operating in accordance with its funding policy and with actuarial principles of level percent of payroll financing. It is very likely that a contribution rate increase will be recommended by the actuary in the December 31, 2009 valuation unless there is a substantial improvement in the financial markets. ERFC is fortunate that its long standing commitment to excellence in funding has resulted in financial strength that is likely to enable it to weather the current severe market downturn.

# SECTION A FINANCIAL PRINCIPLES

#### FINANCIAL PRINCIPLES AND OPERATIONAL TECHNIQUES

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

The related *key financial questions* are:

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

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

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

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

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

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

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

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

... plus ...

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

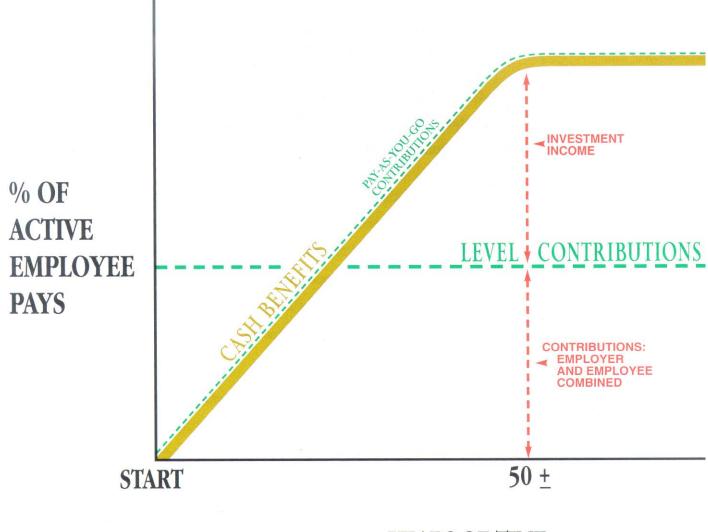
Computing Contributions to Support Plan Benefits. From a given schedule of benefits and from the employee data and asset data furnished, the actuary determines the contribution rates to support the benefits, by means of an actuarial valuation and a funding method.

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

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

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

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



YEARS OF TIME

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

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

Economic Risk Areas

Rates of investment return

Rates of pay increase

Changes in active member group size

Non-Economic Risk Areas

Ages at actual retirement

Rates of mortality

Rates of withdrawal of active members (turnover)

Rates of disability

#### THE ACTUARIAL VALUATION PROCESS

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

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

Covered Person Data, furnished by plan administrator

Retired lives now receiving benefits

Former employees with vested benefits not yet payable

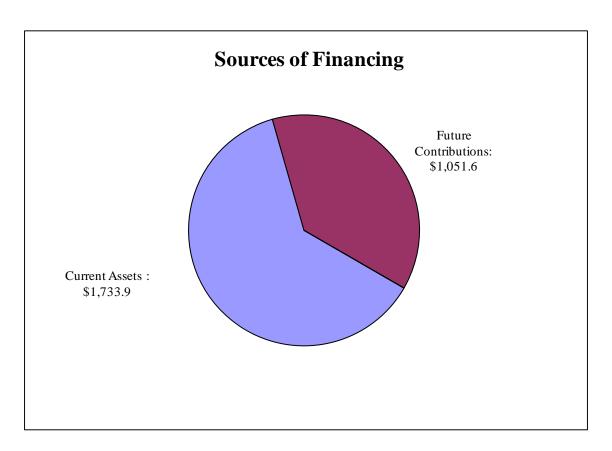
Active employees

- + Asset Data (cash and investments), furnished by plan administrator
- + Assumptions concerning future financial experiences in various risk areas,
  which assumptions are established by the Board of Trustees after consulting with the actuary
- + *The funding method* for employer contributions (the long-term, planned pattern for employer contributions)
- + Mathematically combining the assumptions, the funding method, and the data
- = Determination of:

Plan Financial Position
and/or New Employer Contribution Rate

## SECTION B RESULTS OF THE VALUATION

# FINANCING \$2,785.5 MILLION OF BENEFIT PROMISES DECEMBER 31, 2008 (\$ IN MILLIONS)



The pie chart above shows that the total amount of benefit promises made to members in *ERFC* and *ERFC 2001* is \$2,785.5 million, based on plan assumptions as of December 31, 2008. 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 \$2,785.5 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 \$2,785.5 million number is that investments earn 7.50% per year. Investment return during 2008, as measured by the actuary, was (28.2)% on a market value basis.

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

Valuation Date	December 31, 2008	December 31, 2007
Contributions for Period Ending June 30	2011	2010
Normal Cost (current cost):		
Service Retirement	3.45%	3.39%
Reduced Service Retirement	0.83%	0.89%
Casualty Benefits	0.16%	0.16%
Separation Benefits	1.25%	1.24%
Totals	5.69%	5.68%
Member Contributions	4.00%	4.00%
Employer Normal Cost	1.69%	1.68%
Unfunded Actuarial Accrued Liability	2.35%	1.29%
Annual Required Contribution (GASB 25)	4.04%	2.97%
Contingency Contribution	0.00%	0.23%
Funding Policy Contribution	3.20%	3.20%

Unfunded liability was amortized as a level percent of payroll over 30 years in the December 31, 2008 valuation (as adopted by the Board) and 25 years in the December 31, 2007 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, 2009 was determined by the December 31, 2007 valuation. The contribution rate was calculated to be 3.20% of payroll. This rate was estimated to be the minimum amount that would be sustainable for the period July 1, 2009 to June 30, 2011 based on the following assumptions: 1) investment return of 0.0% in 2008, 2) investment return of 7.5 % in all future years (after 2008) and 3) benefit provisions remain unchanged and other plan experience is in line with expectations. It was understood that if plan experience was worse than this scenario, the 3.20% rate could result in a Net Pension Obligation (NPO) under GASB standards in the second year. Investment return for the 2008 year was (28.2)%, resulting in an ARC of 4.04% of payroll and a NPO for the 2011 fiscal year.

#### **CONTRIBUTION RATE HISTORY**

		Adopte	d Total
Valuation Date	Active Member Payroll (\$1,000's)	Employer Rate	U.A.A.L. Amort. Years
2/28/1975	\$ 110,571		
2/29/1980	169,924		
6/30/1983	225,592		
6/30/1985	251,691		
6/30/1986@	277,545		
6/30/1987	305,050		
6/30/1988\$	340,946	5.49%	19 Yrs.
6/30/1989	369,575	5.49%	19
6/30/1990	411,970	5.48%	20
6/30/1991	451,873	5.48%	20
6/30/1992	447,474	5.48%	20
6/30/1993#@	450,530	5.48%	20
6/30/1994	480,995	5.48%	22
6/30/1995\$	521,044	5.98%	20
6/30/1996	531,060	5.98%	16
6/30/1997	553,709	5.98%	13
6/30/1998#	582,755	4.99%	11
6/30/1999*	626,015	3.69%	Fully Funded
6/30/2000*	678,937	3.69%	Fully Funded
6/30/2001\$&	759,906	4.00%	Fully Funded
6/30/2002	781,756	4.29%	30
6/30/2003\$	866,502	3.37%	29
12/31/2004#&	977,817	3.37%	
12/31/2005&+	1,050,217	3.37%	27
12/31/2006	1,111,828	3.37%	
12/31/2007+	1,161,432	3.20%	25
12/31/2008	1,211,140	3.20%	

<sup>\*</sup> Beginning with the 1999 valuation, the adopted rate was not the same as the computed rate.

<sup>@</sup> After change in asset valuation method.

<sup>\$</sup> After change in benefit structure.

<sup>#</sup> After changes in assumptions.

<sup>&</sup>amp; Includes Contingency Contribution.

<sup>+</sup> Reflects funding policy which establishes the employer rate for a two-year period and may contain a contingency reserve.

### **ACTUARIAL ACCRUED LIABILITIES**

	Amounts at December 31			
Accrued liabilities for	2008	2007		
Present Active Members	\$ 980,238,156	\$ 931,066,164		
Present Inactive Vested Members	37,446,880	33,765,858		
Present Retirees and Beneficiaries	1,237,612,696	1,221,969,395		
Total Actuarial Accrued Liabilities  Funding Value of Assets	\$2,255,297,732 1,733,946,104	\$2,186,801,417 1,924,885,815		
Unfunded Actuarial Accrued Liability  Actuarial Funded Percent	\$ 521,351,628 76.88%	\$ 261,915,602 88.02%		
Market Value Funded Percent	61.51%	91.45%		

## ASSETS AND LIABILITIES COMPARATIVE STATEMENT

	Active	Con	nputed Liabil	ities		Unfunded		
Valuation	Member		Other		Valuation	Accrued	Funded	
Date	Payroll	Retired	Members	Total	Assets	Liabilities	%	
	(\$ 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	1,595,230	660,068	70.7%	
12/31/2008@	1,211,140	1,237,613	1,017,685	2,255,298	1,733,946	521,352	76.9%	

<sup>@</sup> After change in asset valuation method.

<sup>\$</sup> After change in benefits.

<sup>#</sup> After changes in actuarial assumptions.

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

	Active	As Perce	nts of Active Memb	er Payroll
Valuation	Member Payroll	Computed	Valuation	Unfunded
Date	(\$ thousands)	Liabilities	Assets	Liabilities
2/28/1975	\$ 110,571	54%	7%	47%
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%	132%	54%
12/31/2008@	1,211,140	186%	143%	43%

<sup>@</sup> After change in asset valuation method.

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.

<sup>\$</sup> After changes in benefits.

<sup>#</sup> After changes in actuarial assumptions.

#### **SHORT CONDITION TEST**

If the contributions to ERFC are level in concept and soundly executed, the System will *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.

	Aggregate Actuarial Accrued Liabilities For						
	(1)	$(1) \qquad \qquad (2) \qquad \qquad (3)$			Porti	on of Ac	crue d
		Retirees	Members		Liabilit	Liabilities Covered by	
Valuation	Member	and	(Employer Financed	Valuation		Assets	
Date	Contributions	Beneficiaries	Portion)	Assets	(1)	(2)	(3)
		(\$	1,000s)				
6/30/1985	\$ 53,395	\$ 96,588	\$186,956	\$ 221,656	100%	100%	38%
6/30/1986@	57,753	116,773	206,858	284,195	100%	100%	53%
6/30/1987	66,589	136,073	226,581	325,126	100%	100%	54%
6/30/1988\$#	68,662	163,959	274,861	359,069	100%	100%	46%
6/30/1989	75,917	203,394	281,651	405,317	100%	100%	45%
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	1,595,230	100%	100%	8%
12/31/2008@	302,910	1,237,613	714,775	1,733,946	100%	100%	27%

<sup>@</sup> After change in asset valuation method.

<sup>\$</sup> After change in benefits.

<sup>#</sup> After changes in actuarial assumptions.

# CHANGE IN UNFUNDED ACCRUED LIABILITIES DURING THE YEAR ENDING DECEMBER 31, 2008 (\$ IN MILLIONS)

	As of De	cember 31
	2008	2007
Beginning unfunded liabilities (UAAL):	\$261.9	\$286.6
2. Unfunded liabilities at End:		
a. Normal Cost (5.68% of estimated 2008 payroll)	\$ 67.4	\$ 64.6
b. Member and employer contributions (including donated assets)	86.0	82.7
c. Interest accrual	19.0	20.8
d. Expected UAAL, based on Beginning valuation (1+2a-2b+2c)	262.3	289.3
e. Actual UAAL, from End valuation	521.4	261.9
3. Total Gains/(Losses) during Period:		
a. Total: 2d - 2e	\$ (259.1)	\$ 27.4
b. From non-recurring activities and benefit changes	0.0	0.0
c. From differences between assumed and actual		
Experiences in basic risk areas: 3a - 3b	(259.1)	27.4

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, 2008

	Gain (Loss) in Period					
		\$ in millions				
		ERFC		Percent of		
Type of Risk Area	ERFC	2001	Totals	Liabilities		
Risks Related to Assumptions						
Economic Risk Areas						
Pay Increases	\$4.8	\$(0.7)	\$ 4.1	0.2%		
Investment Return			(277.5)	(12.7)%		
Demographic Risk Areas						
Full and Reduced Service Retirements	5.1	0.1	5.2	0.2%		
Vested Deferred Retirements	(1.2)	1.0	(0.2)	0.0%		
Ordinary Death Benefits	0.3	0.0	0.3	0.0%		
Service-Connected Death Benefits	0.0	0.0	0.0	0.0%		
Ordinary Disability Benefits	(0.5)	(0.1)	(0.6)	0.0%		
Service-Connected Disability Benefits	(0.1)	0.0	(0.1)	0.0%		
Terminated with Refund	(3.3)	(0.5)	(3.8)	(0.2)%		
Data Adjustments and Miscellaneous			13.5	0.6%		
Total Gain (or Loss) During Period			(259.1)	(11.8)%		
Beginning of Year Accrued Liabilities			2,187.0	100.0%		

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

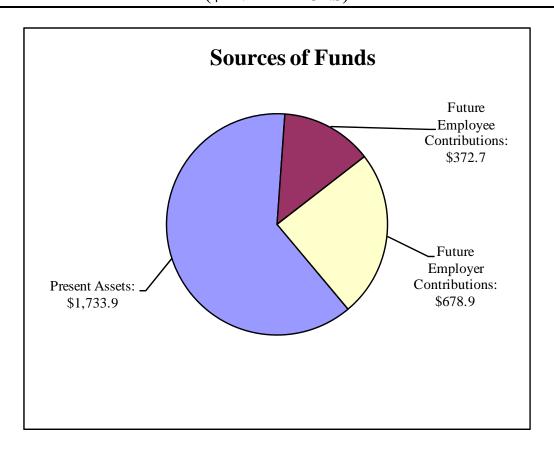
				Disability			Total Ga	in (Loss)
Experience	Pay	Investment		& Death-In	Other			Percent of
Period	Increases	Return	Retirement	Service	Separations	Other	\$	Liabilities
1985-1986	\$ (6.3)	\$25.1	\$ (9.8)	\$ 1.9	\$ (1.6)	\$ (3.4)	\$ 5.9	1.8 %
	,	,	` ′	•	, ,	, ,		
1986-1987	(4.8)	7.6	(5.7)	3.6	(3.1)	(5.3)	(7.7)	(2.0)%
1987-1988	(17.3)	(2.5)	(8.4)	3.4	1.1	2.6	(21.1)	(4.9)%
1988-1989	(13.0)	12.3	(17.9)	(4.4)	3.3	12.4	(7.3)	(1.4)%
1989-1990	(14.0)	23.6	(18.7)	(4.3)	1.2	(15.9)	(28.1)	(5.0)%
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)%

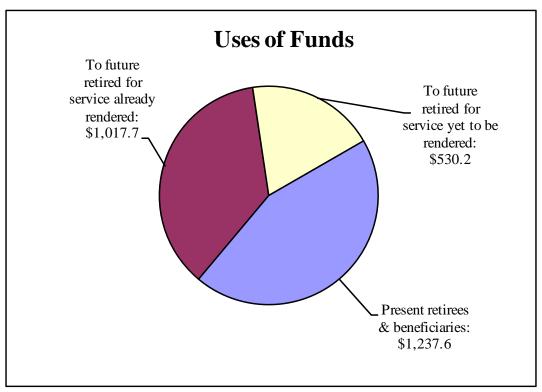
<sup>#</sup> Experience Study.

<sup>\*</sup> Updated Gain Formulas.

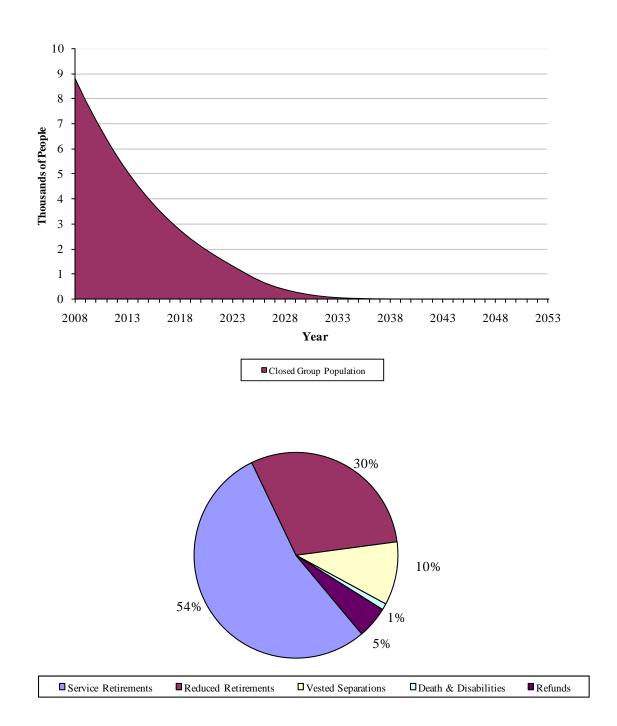
<sup>@</sup> Gain Loss Analysis not performed.

# FINANCING \$2,785.5 MILLION OF BENEFIT PROMISES DECEMBER 31, 2008 (\$ IN MILLIONS)



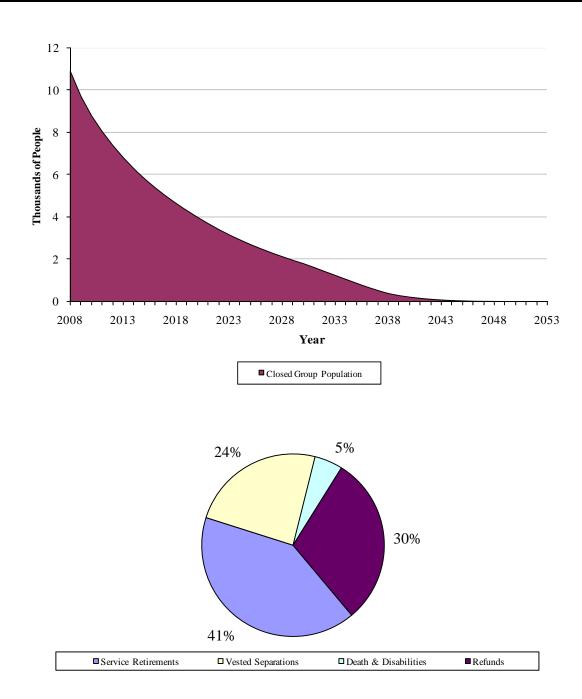


### EXPECTED DEVELOPMENT OF PRESENT POPULATION – ERFC DECEMBER 31, 2008



The charts show the expected future development of the present population in simplified terms. ERFC presently covers 8,791 active members. Eventually, 5% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. Approximately 94% 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, 2008



The charts show the expected future development of the present population in simplified terms. ERFC 2001 presently covers 10,940 active members. Eventually, 30% of the population is expected to terminate covered employment prior to retirement and forfeit eligibility for an employer provided benefit. Approximately 65% 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. 5% of the present population is expected to become eligible for death-inservice or disability benefits. Within 8 years, over half of the current membership will have left the group. The proportion of new hires in this plan will increase more rapidly than normal because the ERFC legacy plan is closed to new hires.

# **SECTION C SUMMARY OF BENEFITS**

# SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2008 MEMBERS HIRED AFTER JULY 1, 1988 BUT BEFORE JULY 1, 2001 ERFC

- 1. **Service Retirement Eligibility.** A member may retire any time after reaching the service retirement date, which is either (i) age 65 with 5 years of service or (ii) age 55 with 25 years of service.
- 2. **Reduced Service Retirement Eligibility.** A member with 25 years of service but younger than age 55 may retire after age 45. A member with less than 25 years of service and younger than age 65 may retire after age 55.
- 3. **Deferred Retirement Eligibility.** An inactive member with 5 or more years of service will be entitled to a pension with payments beginning at age 55, provided she/he does not withdraw accumulated member contributions.
- 4. **Death-In-Service Benefit Eligibility**. An active member with 5 or more years of service who dies will have benefits payable to the surviving spouse or other eligible beneficiary. The 5-year service requirement is waived if the death is service-connected.
- 5. **Disability Retirement Eligibility**. An active member with 5 or more years of service who becomes totally and permanently disabled may be retired and receive a disability pension. The 5-year service requirement is waived if the disability is service-connected.
- 6. **Final Average Compensation (FAC).** A member's final average compensation is the average of the 3 highest consecutive years of salary during eligible employment.
- 7. **Service Retirement Amount.** For payment periods during the retired member's lifetime 103% times (i) minus (ii) where:
  - (i) means 1.85 percent of the FAC multiplied by years of credited service, and
  - (ii) means 1.65 percent of the portion of VRS FAC in excess of \$1,200, multiplied by applicable years of creditable Virginia service; provided if the member is younger than age 65 and if creditable Virginia service is less than 30 years, the result of such multiplication shall be reduced for each month before the earlier of
    - (1) attainment of age 65, and
    - (2) the date when 30 years service would have been completed.

# SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2008 MEMBERS HIRED AFTER JULY 1, 1988 BUT BEFORE JULY 1, 2001 ERFC

#### **Service Retirement Amount (Continued)**

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

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

- 8. **Reduced Service Retirement Amount After 25 Years Service.** Service Retirement amount reduced to reflect retirement age younger than age 55.
- 9. **Reduced Service Retirement Amount After 5-24 Years Service.** For payment periods during the retired member's lifetime, the Service Retirement amount payable at age 65 reduced to reflect retirement age younger than age 65. For payment periods before the age the member becomes eligible for full Social Security benefits, an additional temporary benefit equal to the Service Retirement temporary benefit reduced to reflect retirement age younger than age 65.
- 10. **Deferred Retirement Amount.** Calculated in the same manner as reduced service retirement.
- 11. **Death-In-Service Benefit Amount.** If the member is eligible for a service or reduced service retirement then an eligible named beneficiary will receive such benefits reduced based upon an Option A (in the case of a spouse or an ex spouse subject to a DRO) or Option B (in case of another eligible beneficiary) election. If not, the eligible named beneficiary will receive an amount equal to 103% times a lifetime pension equal of 0.25% of the FAC multiplied by years of credited service, and also reduced in connection with an Option A or Option B election. Credited service shall be increased by the time period from the date of death to the date when the member would have reached service retirement with a minimum of 10 years of service used, provided the death was service-connected. If a named beneficiary is not eligible for either of these types of benefits, the named beneficiary will receive a refund of the member's accumulated contributions.

## SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2008 MEMBERS HIRED AFTER JULY 1, 1988 BUT BEFORE JULY 1, 2001 ERFC

- 12. **Disability Retirement Amount.** The amount is 103% times a lifetime pension equal to 0.25 percent of the FAC multiplied by years of credited service. Credited service shall be increased by the time period from disability retirement to the date when the member would have reached the service retirement date. The minimum pension payable is 2.5 percent of FAC.
- 13. **Post-Retirement Increases**. The amount of the monthly benefit is adjusted each March 31, by 3% compounded annually, beginning with the March 31 which is more than three full months after the member's effective retirement date. Pensions of members that retire in the immediately preceding calendar year are increased by 1.489% (one-half a year's increase).
- 14. **Member Contributions.** 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, 2008 ALTERNATE BENEFITS AVAILABLE TO MEMBERS WITH SOME SERVICE BEFORE JULY 1, 1988

**Service Retirement: Alternate Amount After Full Social Security Age.** A member with service before 7/1/88 may elect, at time of retirement, to receive an alternate benefit amount for payment periods after full Social Security age. The *Alternative Guarantee* amount is the amount that would have been received after the individual reached eligibility for full Social Security benefits under the Old Plan (pre – July 1, 1988) formulas. The amount is 103% of the total of:

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

Reduced Service Retirement: Alternate Amount with 25 Years or more Years of Service. By election at time of retirement, such a member may elect to receive 103% of the following combination of benefits:

**To age 55**, 2.85 percent of the 3-year average annual salary multiplied by years of credited service, then actuarially reduced to reflect retirement age younger than age 55; and

*From age 55 to 65*, the amount to age 55 reduced by: 1.65 percent of the portion of VRS average final compensation in excess of \$1,200, multiplied by applicable years of creditable Virginia service; provided if creditable Virginia service is less than 30 years, the result of such multiplication shall be actuarially reduced for each month before the earlier of (1) attainment of age 65, and (2) the date when 30 years service would have been completed; and

*From age 65 for life*, the amount payable at age 65 according to June 30, 1987 provisions or the amount payable at age 65 according to July 1, 1988 provisions.

### SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2008 MEMBERS HIRED JULY 1, 2001 OR LATER ERFC 2001

- 1. **Service Retirement Eligibility.** A member may retire at age 60 with 5 or more years of credited service, or after 30 years of credited service regardless of age.
- 2. **Deferred Retirement Eligibility.** Any member with 5 or more years of credited service that terminates employment prior to the service retirement date, will be eligible to receive a deferred vested pension commencing at age 60, provided accumulated contributions are left on deposit with the Plan.
- 3. **Death Benefit Eligibility.** Any member with 5 or more years of credited service that dies before beginning to receive a pension will have benefits payable to the named beneficiary.
- 4. **Final Average Compensation (FAC).** A member's final average compensation is the average of the 3 highest years of salary during eligible employment.
- 5. **Service Retirement Pension.** The amount is a lifetime pension equal to 0.8% (eight-tenths of one percent) of FAC at retirement multiplied by years of credited service. If necessary, the pension will be increased to make the reserve value of the pension equal to the member's accumulated contributions as of the retirement effective date.
- 6. **Deferred Retirement Pension.** The amount is a lifetime pension equal to 0.8% (eighttenths 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 termination date.

### SUMMARY OF PROVISIONS AS OF DECEMBER 31, 2008 MEMBERS HIRED JULY 1, 2001 OR LATER ERFC 2001

- 7. **Survivor Death Benefit.** The amount is a lifetime pension equal to 0.8% (eight-tenths of one percent) of FAC multiplied by years of credited service at the date of death. If necessary, the pension will be increased to make the reserve value of the pension equal to the member's accumulated contributions as of the date of death. The pension will be adjusted in accordance with an Option A (in the case of a spouse or an ex spouse subject to a DRO) or Option B (in case of another eligible beneficiary) election payable immediately unless the member did not reach the service retirement eligibility prior to death, in which case the pension is reduced for each month that the member was younger than age 60 on the date of death in the following manner:
  - a. one-half of 1% for each of the first 60 months and four-tenths of one percent for each month beyond 60 months (the number of months used for reduction is not to exceed the difference between the member's credited service at death and 30 years)
- 8. **Cost-of-Living Adjustments.** The amount of the monthly benefit is adjusted each March 31, by 3% compounded annually, beginning with the March 31 which is more that 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, 2008

#### Data:

A	7/1/1953	Date of Birth
В.	7/1/2008	Effective Date
C.	7/1/1983	Membership Date
D	25.00	ERFC Credited Service
E	25.00	VRS Creditable Service
F	55.00	Age
G.	Service	Retirement Type
Н	\$60,000.00	3-Year Average Salary
Ι.	\$60,000.00	5-Year Average Salary

#### **ERFC** Monthly Benefit Calculation

#### Lifetime Portion of Full Service Benefit

J. <i>ERFC</i> Formula Benefit: 1.85% x 25 yrs. x \$60,000 =	\$ 27,750.00
K. minus VRS Adjustment of: 1.65% x 25 yrs. x (\$60,000 - \$1,200) x 70% =	16,978.50
(70% is the VRS Early Service Retirement Reduction Factor for 5 years prior	
to the earlier of age 65 or 30 years of service)	
L. Sub Total	10,771.50
M. plus additional 3% benefit adjustment	323.15
N. Total of Lifetime Portion	11,094.65
Additional Temporary Benefit (until age 66)	
O. Temporary Benefit Formula: 1% x 25 yrs. x \$60,000 =	15,000.00
P. plus additional 3% benefit adjustment	450.00
Q. Total of Additional Temporary Benefit less 54% Reduction	15,450.00
R. Monthly benefit effective $06/30/2008$ at age 55 payable until age 66, $(N + Q)/12 =$	\$2,212.05
S. Monthly benefit effective $07/01/2019$ at age 66 payable for life, $N/12 =$	\$ 924.55

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

## SAMPLE BENEFIT COMPUTATION FOR ERFC 2001 MEMBER

#### Data:

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

#### ERFC 2001 Monthly Benefit Calculation

### Lifetime Monthly Benefit

*ERFC 2001* Formula Benefit: 0.80% x 29 yrs. x \$60,000 / 12 =

\$ 1,160.00

## SECTION D FINANCIAL INFORMATION

## SUMMARY OF FINANCIAL INFORMATION DECEMBER 31, 2008

### Revenues and Expenditures

	December 31		
	2008	2007	
REVENUES:			
a. Member Contributions	\$ 46,896,886	\$ 45,317,716	
b. Employer Contributions	39,098,636	37,389,440	
c. Donated Fixed Assets	0	27,632	
d. Investment Return			
1. Interest and Dividends	46,885,130	46,784,907	
2. Net Appreciation	(598,458,553)	97,835,476	
3. Investment Expense	(8,086,924)	(7,090,078)	
4. Net Securities Lending	933,988	799,592	
5. Real Estate	5,765,135	7,867,315	
6. Miscellaneous	58,995	78,053	
7. Total Investment Return	(552,902,229)	146,275,265	
e. Total Revenues	(466,906,707)	229,010,053	
EXPENDITURES:			
a. Refunds of Member Contributions	4,137,660	3,929,545	
b. Retirement Benefits Paid	137,622,735	132,380,555	
c. Administrative Expense	4,081,567	4,113,801	
d. Total Expenditures	145,841,962	140,423,901	
RESERVE INCREASE:			
Total Revenues Minus Total Expenditures	(612,748,669)	\$88,586,152	

### Market Value of Assets

	December 31		
	2008	2007	
Invested Assets			
Bonds	\$ 114,774,351	\$ 150,332,579	
Stocks			
a. Common	449,807,601	766,313,084	
b. Preferred	3,027,785	3,901,431	
Real Estate	74,468,572	89,543,851	
Global Asset Allocation	217,283,487	297,380,654	
Hedge Fund of Funds	40,399,363	0	
Commingled Funds	466,131,968	669,789,339	
Total Invested Assets	1,365,893,127	1,977,260,938	
Short-term Investments and Cash	142,535,984	276,509,143	
Receivables and Pre-Paid Expenses	9,531,397	8,893,737	
Other Assets (furniture and equipment)	93,286	80,402	
Total Assets	1,518,053,794	2,262,744,220	
Liabilities	130,896,911	262,838,668	
Net Assets	\$1,387,156,883	\$1,999,905,552	

#### PORTFOLIO COMPOSITION AT MARKET VALUE

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

	Year Ended December 31				
	200	8	2007		
	Value % of Total		Value	% of Total	
Bonds	\$ 114,774,351	8.3 %	\$ 150,332,579	7.5 %	
Stocks					
a. Common	449,807,601	32.4 %	766,313,084	38.3 %	
b. Preferred	3,027,785	0.2 %	3,901,431	0.2 %	
Real Estate	74,468,572	5.4 %	89,543,851	4.5 %	
Commingled Funds	466,131,968	33.6 %	669,789,339	33.5 %	
Hedge Fund of Funds	40,399,363	2.9 %			
Global Asset Allocation / Better Beta	217,283,487	15.7 %	297,380,654	14.9 %	
Net Short-term Investments and Cash	11,614,281	0.8 %	13,645,683	0.7 %	
Receivables, Pre-Paid Expenses and Other	9,649,475	0.7 %	8,998,931	0.4 %	
Total Assets	\$1,387,156,883	100.0 %	\$1,999,905,552	100.0 %	

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

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

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

A smoothing formula has been in use for ERFC valuations since 1986, which in its present form is illustrated on page D-4. In the December 31, 2005 valuation, a new requirement was instituted to prevent unreasonably large differences between the market value and the funding value of assets. The recognized assets must always be between 85% and 115% of the market value (see Page D-3). Effective in the December 31, 2008 valuation this was adjusted to 75% and 125% (as adopted by the Board).

### DEVELOPMENT OF FUNDING VALUE OF RETIREMENT SYSTEM ASSETS

Year Ended December 31:	2008	2009	2010	2011	2012
A. Funding Value Beginning of Year	\$1,924,885,815	1,733,946,104			
B. Market Value End of Year	1,387,156,883				
C. Market Value Beginning of Year	1,999,905,552				
D. Non-Investment Net Cash Flow	(55,764,873)				
E. Investment Return Assumed Rate	7.5%				
1. Market Total: B-C-D	(556,983,796)				
2. Amount for Immediate Recognition	142,275,253				
3. Amount for Phased in Recognition: (E1-E2)	(699,259,049)				
F. Phased in Recognition of Investment Return					
1. Current year: 0.20*E3	(139,851,810)				
2. First Prior Year	1,550,155	\$(99,172,171)			
3. Second Prior Year	21,678,875	1,550,155	\$(99,172,171)		
4. Third Prior Year	1,891,244	21,678,875	1,550,155	\$(99,172,171)	
5. Fourth Prior year	0	1,891,244	21,678,875	1,550,155	\$ (99,172,167)
6. Total Phased-In	(114,731,536)	(74,051,897)	(75,943,141)	(97,622,016)	(99,172,167)
G. Funding Value End of Year					
G1. Preliminary Funding Value End of Year: A+D+E2+F6	1,896,664,659				
G2. Upper Corridor Limit: 125% x B	1,733,946,104				
G3. Lower Corridor Limit: 75% x B	1,040,367,662				
G4. Funding Value End of Year	1,733,946,104				
H. Actual/Projected Difference Between					
Market Value and Funding Value	(346,789,221)	(272,737,324)	(196,794,183)	(99,172,167)	0
I. Market Rate of Return	(28.2)%				
J. Ratio of Funding Value to Market Value	125.0%				

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:	2004	2005	2006	2007
A. Funding Value Beginning of Year	\$ 1,597,459,083	\$ 1,643,019,915	\$ 1,718,398,545	\$ 1,818,930,165
B. Market Value End of Year	1,643,019,915	1,725,963,523	1,911,319,400	1,999,905,552
C. Market Value Beginning of Year	1,349,792,227	1,643,019,915	1,725,963,523	1,911,319,400
D. Non-Investment Net Cash Flow	(81,766,933)	(47,941,309)	(50,041,822)	(53,575,312)
E. Investment Return Assumed Rate	7.5%	7.5%	7.5%	7.5%
E1. Market Total: B-C-D	374,994,621	130,884,917	235,397,699	142,161,464
E2. Amount for Immediate Recognition	127,327,765*	121,428,695	127,003,323	134,410,688
E3. Amount for Phased in Recognition: (E1-E2)	0*	9,456,222	108,394,376	7,750,776
F. Phased in Recognition of Investment Return				
F1. Current year: 0.20*E3	0	1,891,244	21,678,875	1,550,155
F2. First Prior Year	0	0	1,891,244	21,678,875
F3. Second Prior Year	0	0	0	1,891,244
F4. Third Prior Year	0	0	0	0
F5. Fourth Prior year	0	0	0	0
F6. Total Recognized Investment Gain or Loss	0	1,891,244	23,570,119	25,120,274
G. Funding Value End of Year				
G1. Preliminary Funding Value End of Year: A+D+E2+F6	1,643,019,915	1,718,398,545	1,818,930,165	1,924,885,815
G2. Upper Corridor Limit: 115% x B		1,984,858,051	2,198,017,310	2,299,891,385
G3. Lower Corridor Limit: 85% x B		1,467,068,995	1,624,621,490	1,699,919,719
G4. Funding Value End of Year		1,718,398,545	1,818,930,165	1,924,885,815
H. Actual/Projected Difference Between				
Market Value and Funding Value	0 *	7,564,978	92,389,235	75,019,737
I. Market Rate of Return	28.6%**	8.1%	13.8%	7.5%
J. Ratio of Funding Value to Market Value	100.0%	99.6%	95.2%	96.2%

<sup>\*</sup> Funding value reset to market value.

<sup>\*\*</sup> Calculated over the 18 month period of 6/30/2003 to 12/31/2004.

### SECTION E COVERED MEMBER DATA

### ERFC MEMBERS WOMEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2008 BY ATTAINED AGE AND YEARS OF SERVICE

Age		Yea	rs of Ser	vice to Va	aluation I	)ate			Totals	
Group	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Salary	Average
20-24										
25-29	1	4						5	\$ 247,198	\$49,440
30-34	8	326	75					409	25,294,469	61,845
35-39	18	285	337	52				692	47,553,913	68,720
40-44	12	208	234	181	44	2		681	47,955,640	70,419
45-49	12	268	247	181	162	23	1	894	62,306,331	69,694
50-54	8	329	392	253	254	169	28	1,433	103,265,426	72,062
55-59	8	328	458	310	281	150	55	1,590	115,610,132	72,711
60	1	43	90	80	48	21	2	285	19,873,573	69,732
61	1	40	66	73	65	24	3	272	19,339,471	71,101
62	2	30	68	75	59	20	1	255	17,982,170	70,518
63	1	16	32	56	38	9		152	11,375,341	74,838
64		19	29	32	25	12	1	118	8,625,597	73,098
65	1	11	17	18	22	6	2	77	5,528,150	71,794
66		9	17	17	21	9	1	74	5,214,428	70,465
67		2	3	13	7	4	2	31	2,192,237	70,717
68		2	4	6	8	2	1	23	1,555,257	67,620
69		1	6	2	4	3		16	924,197	57,762
70		1	2	4	3	1		11	624,758	56,796
71			2	2	3	1	2	10	667,088	66,709
72				2	4		2	8	490,837	61,355
73			1					1	33,062	33,062
74		1	1		1		1	4	156,542	39,136
75 & Over			1		3	1	1	6	328,067	54,678
Totals	73	1,923	2,082	1,357	1,052	457	103	7,047	\$497,143,884	\$70,547

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

Age: 51.0 years. Service: 14.8 years. Annual Pay: \$70,547

### ERFC MEMBERS MEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2008 BY ATTAINED AGE AND YEARS OF SERVICE

Age		Ye	ars of Se	rvice to V	aluation 1	Date			Totals	
Group	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Salary	Average
15-19										
20-24										
25-29	1	2						3	\$ 134,294	\$44,765
30-34	3	85	17					105	6,870,165	65,430
35-39	2	106	141	21				270	19,418,949	71,922
40-44	1	82	134	87	7			311	23,760,465	76,400
45-49	1	61	76	73	72	6		289	23,347,972	80,789
50-54		53	61	41	73	83	8	319	28,163,457	88,287
55-59		53	54	41	46	36	26	256	21,728,934	84,879
60		9	11	8	5	2	1	36	2,970,021	82,501
61		8	8	6	6	1		29	2,407,840	83,029
62		11	11	2	4	1		29	2,358,318	81,321
63		7	11	5		1		24	1,969,246	82,052
64		5	5	5		2		17	1,359,195	79,953
<b>65</b>		_	_	2		1		12	000 007	76.060
65		5	5 3	2 2	2	1		13	988,897	76,069
66		10		2	2 2			17	1,312,618	77,213
67		2	1	2	2			5	476,200	95,240
68		4	2	2	2			6	415,738	69,290
69		1	2		2			5	407,144	81,429
70			1	1				2	186,799	93,400
71		1						1	38,058	38,058
73				1				1	85,284	85,284
74				1				1	37,130	37,130
75 & Over			2	1	2			5	208,966	41,793
Totals	8	505	543	299	221	133	35	1,744	\$138,645,690	\$79,499

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

Age: 47.9 years. Service: 14.8 years. Annual Pay: \$79,499

### ERFC 2001 MEMBERS WOMEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2008 BY ATTAINED AGE AND YEARS OF SERVICE

Age		Yea	ars of Ser	vice to Va	aluation I	<b>Date</b>			Totals	
Group	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Salary	Average
15-19	1							1	\$ 18,084	\$18,084
20-24	462	1						463	20,162,999	43,549
25-29	2,007	247						2,254	112,783,542	50,037
30-34	983	507						1,490	82,053,753	55,070
35-39	646	287						933	51,427,699	55,121
40-44	623	195						818	41,612,997	50,872
45-49	728	292						1,020	47,943,568	47,003
50-54	564	329						893	45,647,011	51,116
55-59	367	274						641	34,981,200	54,573
60	49	47						96	5,213,980	54,312
61	36	33						69	3,666,581	53,139
62	34	23						57	3,662,882	64,261
63	16	20						36	2,093,039	58,140
64	15	10						25	1,315,205	52,608
	0							10	764.075	62.600
65	8	4						12	764,275	63,690
66	5	9						14	754,145	53,868
67	7	2						9	461,902	51,322
68	1	2						3	162,998	54,333
69	1	2						3	231,387	77,129
70	1							1	27,093	27,093
71	1							1	27,972	27,972
72	1							1	71,375	71,375
73		1						1	80,495	80,495
										, -
75 & Over										
Totals	6,556	2,285						8,841	\$455,164,182	\$51,483

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

Age: 38.4 years. Service: 3.3 years. Annual Pay: \$51,483

### ERFC 2001 MEMBERS MEN ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2008 BY ATTAINED AGE AND YEARS OF SERVICE

Age		Yea	ars of Ser	vice to V	aluation I	<b>Date</b>			Totals	
Group	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Salary	Average
20-24	60							60	\$ 2,293,160	38,219
25-29	428	38						466	22,779,486	48,883
30-34	276	161						437	24,259,290	55,513
35-39	174	120						294	17,541,217	59,664
40-44	159	80						239	15,425,573	64,542
45-49	133	54						187	11,499,515	61,495
50-54	98	62						160	10,224,394	63,902
55-59	90	43						133	8,344,713	62,742
60	15	9						24	1,794,937	74,789
61	9	13						22	1,386,458	63,021
62	18	9						27	1,732,749	64,176
63	5	4						9	543,222	60,358
64	4	5						9	532,994	59,222
<i></i>	2							0	562.540	(2) (1)
65	3	6						9	563,548	62,616
66	5							5	281,921	56,384
67	4							4	211,341	52,835
68	2	1						3	182,144	60,715
69	2							2	149,261	74,631
70	1	1						2	130,169	65,085
71		2						2	54,341	27,171
72	1							1	73,254	73,254
73	2							2	73,680	36,840
75 & Over	2							2	108,886	54,443
Totals	1,491	608	_				_	2,099	\$120,186,253	\$57,259

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

Age: 38.7 years. Service: 3.6 years. Annual Pay: \$57,259

#### ALL ACTIVE MEMBERS IN VALUATION DECEMBER 31, 2008 BY ATTAINED AGE AND YEARS OF SERVICE

Age		Yea	ars of Ser	vice to V	aluation 1	Date			Totals	
Group	0-4	5-9	10-14	15-19	20-24	25-29	30 & Up	No.	Salary	Average
15-19	1							1	\$ 18,084	\$ 18,084
20-24	522	1						523	22,456,159	42,937
25-29	2,437	291						2,728	135,944,520	49,833
30-34	1,270	1,079	92					2,441	138,477,677	56,730
35-39	840	798	478	73				2,189	135,941,778	62,102
40-44	795	565	368	268	51	2		2,049	128,754,675	62,838
45-49	874	675	323	254	234	29	1	2,390	145,097,386	60,710
50-54	670	773	453	294	327	252	36	2,805	187,300,288	66,774
55-59	465	698	512	351	327	186	81	2,620	180,664,979	68,956
60	65	108	101	88	53	23	3	441	29,852,511	67,693
61	46	94	74	79	71	25	3	392	26,800,350	68,368
62	54	73	79	77	63	21	1	368	25,736,119	69,935
63	22	47	43	61	38	10		221	15,980,848	72,312
64	19	39	34	37	25	14	1	169	11,832,991	70,018
65	12	26	22	20	22	7	2	111	7,844,870	70,675
66	10	28	20	19	23	9	1	110	7,563,112	68,756
67	11	6	4	13	9	4	2	49	3,341,680	68,198
68	3	9	4	8	8	2	1	35	2,316,137	66,175
69	3	4	8	2	6	3		26	1,711,989	65,846
70	2	2	3	5	3	1		16	968,819	60,551
71	1	3	2	2	3	1	2	14	787,459	56,247
72	2			2	4		2	10	635,466	63,547
73	2	1	1	1				5	272,521	54,504
74		1	1	1	1		1	5	193,672	38,734
75 & Over	2		3	1	5	1	1	13	645,919	49,686
Totals	8,128	5,321	2,625	1,656	1,273	590	138	19,731	\$1,211,140,009	\$61,383

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

Age: 43.8 years. Service: 8.5 years. Annual Pay: \$61,383

### ACTIVE MEMBERS BY YEARS OF SERVICE DECEMBER 31, 2008

Service	Nı	ımber of Memb	ers	Annual I	Pays
Years	Males	Females	Total	Total	Average
0	253	1,347	1,600	\$ 74,464,368	\$46,540
1	310	1,482	1,792	85,301,757	47,601
2	315	1,338	1,653	84,020,233	50,829
3	313	1,324	1,637	85,239,146	52,070
4	308	1,138	1,446	79,085,063	54,692
5	234	895	1,129	65,466,994	57,987
6	211	815	1,026	60,465,057	58,933
7	222	917	1,139	69,998,554	61,456
8	229	840	1,069	65,213,726	61,004
9	217	741	958	60,932,600	63,604
10	144	619	763	48,978,806	64,192
11	115	441	556	37,370,484	67,213
12	90	397	487	34,172,681	70,170
13	89	275	364	25,853,527	71,026
14	105	350	455	33,716,158	74,101
15	107	324	431	32,031,548	74,319
16	46	247	293	22,057,929	75,283
17	40	229	269	20,684,723	76,895
18	63	306	369	28,890,986	78,295
19	43	251	294	23,154,857	78,758
20	46	259	305	24,526,118	80,414
21	32	189	221	18,152,477	82,138
22	52	224	276	23,939,271	86,736
23	44	205	249	21,406,860	85,971
24	47	175	222	18,738,685	84,408
25	31	125	156	14,029,903	89,935
26	22	82	104	9,486,145	91,213
27	34	100	134	12,603,939	94,059
28	21	89	110	10,485,831	95,326
29	25	61	86	8,151,727	94,788
30 & Up	35	103	138	12,519,856	90,724
Totals	3,843	15,888	19,731	\$1,211,140,009	\$61,383

#### PERSONS IN VALUATIONS - COMPARATIVE STATEMENT

#### Active Members

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

#### PERSONS IN VALUATIONS - COMPARATIVE STATEMENT

Retired Lives

		Average		Active	Total
Valuation		Annual	Total	Member	Benefits as %
Date	Number	Benefit	Benefits	Payroll	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%

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, 2008 BY TYPE OF BENEFIT BEING PAID

			<b>Annual Amounts</b>	
		Payable	Temporary	Current
Type of Pension Being Paid	No.	for Life	Supplement	Benefits
Age and Service - Normal:				
Straight Life	676	\$ 9,223,582		\$9,223,582
Optional Forms	28	444,616		444,616
Age and Service - Early:				
Straight Life	514	4,079,517	\$237,519	4,317,036
Optional Forms	22	230,391	12,844	243,235
Age and Service Totals	1,240	13,978,106	250,363	14,228,469
Duty Disability:				
Straight Life	10	274,383		274,383
Straight Enc	10	271,303		271,303
Non-Duty Disability				
Straight Life	62	526,048		526,048
				,
Age and Service Survivor				
Beneficiary, Duty Death, and				
Non-Duty Death	51	422,214	12,549	434,763
Other Totals	123	1,222,645	12,549	1,235,194
Total Benefits	1,363	\$15,200,751	\$262,912	\$15,463,663

## BENEFIT FORMULAS (EFFECTIVE JULY 1, 1988) RETIREES AND BENEFICIARIES DECEMBER 31, 2008 BY TYPE OF BENEFIT BEING PAID

		Annual Amounts					
		Payable	Temporary	Current			
Type of Pension Being Paid	No.	for Life	Supplement	Benefits			
Age and Service - Normal:							
Straight Life	3,359	\$43,993,172	\$32,314,264	\$76,307,436			
Optional Forms	375	4,740,592	3,702,057	8,442,649			
Age and Service - Early:							
Straight Life	3,056	13,770,094	17,021,778	30,791,872			
Optional Forms	168	938,821	1,110,989	2,049,810			
Age and Service Totals	6,958	63,442,679	54,149,088	117,591,767			
Duty Disability:							
Straight Life	14	43,262		43,262			
Optional Forms	1	1,617		1,617			
Non-Duty Disability:							
Straight Life	131	449,052	15,543	464,595			
Optional Forms	17	52,521		52,521			
Age and Service Survivor							
Beneficiary, Duty Death, and							
Non-Duty Death	72	371,067	250,153	621,220			
Non-Duty Death	12	3/1,00/	230,133	021,220			
Other Totals	235	917,519	265,696	1,183,215			
		,	,				
Total Benefits	7,193*	\$64,360,198*	\$54,414,784	\$118,774,982			

<sup>\*</sup> Includes benefits split in DROs.

## BENEFIT FORMULAS (EFFECTIVE JULY 1, 2001) RETIREES AND BENEFICIARIES DECEMBER 31, 2008 BY TYPE OF BENEFIT BEING PAID

Type of Pension Being Paid	No.	Annual Amounts
Age and Service - Normal:	20	фо <b>2 2</b> со
Straight Life	30	\$82,260
Optional Forms	8	22,284
Age and Service - Early:		
Straight Life		
Optional Forms		
F		
Age and Service Totals	38	104,544
Duty Disability:		
Straight Life		
Optional Forms		
T P HOUSE COLOR		
Non-Duty Disability:		
Straight Life		
Optional Forms		
-		
Age and Service Survivor		
Beneficiary, Duty Death, and		
Non-Duty Death	1	3,071
Other Totals	1	3,071
T (17)	20	φ40 <b>=</b> <4 <b>=</b>
Total Benefits	39	\$107,615

## ORIGINAL BENEFIT FORMULAS (BEFORE JULY 1, 1988) RETIREES AND BENEFICIARIES DECEMBER 31, 2008 CURRENT ANNUAL BENEFITS - TABULATED BY ATTAINED AGES

Attained		Annual
Ages	No.	Amount
55	4	\$ 17,215
56	1	2,365
57	3	17,929
58	3	21,699
59	2	8,393
60	2	20,575
61	9	45,283
62	12	67,918
63	14	70,496
64	13	56,353
65	2	13,552
66	2	17,874
67	5	49,896
68	3	31,458
69	14	141,326
70	25	303,085
71	39	573,240
72	45	781,513
73	68	1,155,176
74	62	1,075,401
75	64	1,171,108
76	58	917,700
77	70	1,048,810
78	63	910,163
79	73	979,056
80-84	360	3,758,612
85-89	235	1,644,939
90 & Up	112	562,528
Total	1,363	\$15,463,663

## BENEFIT FORMULAS (EFFECTIVE JULY 1, 1988) RETIREES AND BENEFICIARIES DECEMBER 31, 2008 CURRENT ANNUAL BENEFITS - TABULATED BY ATTAINED AGES

Attained		Annual
Ages	No.	Amount
Under 40	6	\$ 31,374
40-44	2	3,496
45	6	17,630
46	2	8,637
48	2	40,844
49	6	70,692
50	4	34,614
51	9	109,099
52	11	134,004
53	25	521,628
54	41	918,455
55	106	2,432,335
56	188	4,071,436
57	227	4,902,032
58	280	6,040,121
59	335	7,891,953
60	415	9,281,689
61	516	11,382,077
62	530	11,211,957
63	439	8,772,407
64	480	10,280,888
65	494	10,157,146
66	397	4,065,532
67	320	3,153,159
68	325	3,212,725
69	273	2,628,223
70-74	1,105	11,652,012
75-79	511	4,670,954
80 & Up	138	1,077,863
Totals*	7,193	\$118,774,982

<sup>\*</sup> Includes benefits split in DROs.

## ERFC 2001 RETIREES AND BENEFICIARIES DECEMBER 31, 2008 CURRENT ANNUAL BENEFITS - TABULATED BY ATTAINED AGES

Attained		Annual
Ages	No.	Amount
57	1	\$ 3,071
60	5	14,232
61	2	4,940
62	7	21,561
63	3	7,789
64	7	17,989
65	3	9,093
66	3	7,174
67	4	11,155
68	1	2,558
70-74	3	8,053
Totals	39	\$107,615

## ORIGINAL BENEFIT FORMULAS (BEFORE JULY 1, 1988) INACTIVE VESTED MEMBERS DECEMBER 31, 2008 ANNUAL DEFERRED BENEFITS - BY ATTAINED AGES

Attained		Annual
Ages	No.	Amount
49	1	\$ 1,204
53	1	1,915
55	2	2,615
56	7	8,350
57	3	4,794
58	3	2,953
59	2	3,858
60	2	7,238
61	4	9,604
62	3	2,885
63	2	1,995
64	3	2,881
67	1	2,429
71	2	2,936
73	1	1,392
Totals*	33	\$50,292

<sup>\*</sup> In addition, there are 5 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, 2008 ANNUAL DEFERRED BENEFITS - BY ATTAINED AGES

Attained Ages	No.	Annual Amount
28	1	\$ 1,091
29	1	1,429
30	27	47,028
31	45	78,708
32	48	90,856
33	68	130,145
34	87	158,271
35	92	194,245
36	112	238,945
37	101	230,620
38	124	270,734
39	121	291,206
40	104	248,580
41	107	240,478
42	86	177,772
43	92	204,053
44	80	167,643
45	85	214,728
46	69	169,901
47	61	203,449
48	63	149,917
49	54	188,607
50	47	140,257
51	53	173,160
52	68	229,073
53	71	223,304
54	72	223,277
55	48	134,944
56	37	133,735
57	34	96,083
58	29	93,425
59	22	65,616
60	26	107,775
61	20	73,470
62	20	72,884
63	18	50,675
64	6	15,720
65 & Up	11	40,687
Totals	2,210	\$5,572,491

### ERFC 2001 INACTIVE VESTED MEMBERS DECEMBER 31, 2008 ANNUAL DEFERRED BENEFITS - BY ATTAINED AGES

Attained		Annual
Ages	No.	Amount
25	1	\$ 840
26	1	937
27	8	23,139
28	14	37,138
29	29	83,062
30	19	59,866
31	23	66,207
32	24	61,293
33	18	44,396
34	22	56,665
35	8	20,395
36	2	5,771
37	12	30,426
38	6	16,562
39	7	16,617
40	12	28,795
41	7	13,731
42	3	5,825
43	3	6,268
44	5	13,826
45	3	6,593
46	5	10,013
47	8	16,094
48	6	12,231
49	11	26,037
50	5	8,442
51	3	5,279
52	5	12,871
53	7	11,370
54	2	1,941
55	7	17,107
56	6	15,184
57	6	10,984
58	8	20,541
59	5	11,436
60	2	4,355
61	1	1,249
62	1	2,535
63	1	3,179
65 & Over	1	2,980
Totals	317	\$792,180

## SECTION F FINANCIAL REPORTING (GASB)

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

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

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

- Statement of 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	
	2008	2007
Assets		
Cash and short-term investments		
Cash	\$ 1,411,979	\$ 1,428,886
Cash with fiscal agent	1,100,301	(1,342,394)
Cash collateral for securities on loan	123,656,957	258,549,938
Short-term investments	16,341,955	17,847,921
Prepaid assets	24,792	24,792
Total cash & short-term investments	\$ 142,535,984	\$ 276,509,143
Receivables		
Interest and dividends	6,021,414	3,907,145
Securities Sold	3,509,492	4,986,101
Miscellaneous accounts receivable	491	491
Total Receivables	\$ 9,531,397	\$ 8,893,737
Investments at fair value		
US Government obligations	\$ 0	\$ 32,105,051
Mortgage-backed securities	4,252,301	7,383,757
Domestic corporate bonds	76,877,627	66,891,395
International and Convertible bonds	33,644,423	43,952,376
Common stock	449,807,601	766,313,084
Preferred stock	3,027,785	3,901,431
Global Asset Allocation / Better Beta	217,283,487	297,380,654
Real Estate	74,468,572	89,543,851
Hedge Fund of Funds	40,399,363	0
Commingled Funds	466,131,968	669,789,339
Total Investments	\$1,365,893,127	\$1,977,260,938
Other Assets (Furniture and equip. net of accum. deprec.)	93,286	80,402
Total Assets	\$1,518,053,794	\$2,262,744,220
Liabilities		
Accounts payable	\$ 263,443	\$ 28,382
Securities purchased	6,976,511	4,260,348
Securities lending collateral	123,656,957	258,549,938
Total Liabilities	\$ 130,896,911	\$ 262,838,668
Net Assets held in trust for pension benefits		
(a schedule of funding progress is presented on page F-5)	\$1,387,156,883	\$1,999,905,552

#### STATEMENT OF CHANGES IN REPORTED PLAN ASSETS

	Reconciliation as of December 31		
	2008	2007	
Additions			
Contributions			
Employer	\$ 39,098,636	\$ 37,389,440	
Plan members	46,896,886	45,317,716	
Donated fixed assets	0	27,632	
Total Contributions	85,995,522	82,734,788	
Investment Income			
Net appreciation in fair value of investments	(598,458,553)	97,835,476	
Interest and dividends	46,885,130	46,784,907	
Real estate	5,765,135	7,867,315	
Net securities lending	933,988	799,592	
Miscellaneous	58,995	78,053	
Total Investment Income	(544,815,305)	153,365,343	
Less: Investment Expenses	8,086,924	7,090,078	
Net Investment Income	(552,902,229)	146,275,265	
Total Additions	(466,906,707)	229,010,053	
Deductions			
Benefits	137,622,735	132,380,555	
Refunds	4,137,660	3,929,545	
Administrative expense	4,081,567	4,113,801	
Total Deductions	145,841,962	140,423,901	
Net increase/(decrease)	\$ (612,748,669)	\$ 88,586,152	
Net Assets held in trust for pension benefits			
Beginning of year	\$1,999,905,552	\$1,911,319,400	
End of year	\$1,387,156,883	\$1,999,905,552	

#### NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED DECEMBER 31, 2008

Membership information as of December 31, 2008, the date of the latest actuarial valuation, is as follows:

Retirees and beneficiaries	8,595
Inactive members	2,565
Active members	19,731
Total	30,891

#### 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.

On the basis of the December 31, 2008 actuarial valuation, the Annual Required Employer Contribution for Fiscal 2011 determined in accordance with GASB Statement No. 25 for accounting purposes was determined to be 4.04% of payroll as follows:

1) Normal Cost	5.69%
2) Accrued Liability	2.35%
3) Total	8.04%
4) Member Contribution	4.00%
5) Annual Required Contribution	4.04%

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

	Actuarial	Actuarial Accrued	Unfunded			UAAL as a
Actuarial	Value	Liability (AAL)	AAL	Funded	Covered	Percent of
Valuation	of Assets	- Entry Age	(UAAL)	Ratio	Payroll	Covered Payroll
Date	(a)	(b)	(b) - (a)	(a)/(b)	(c)	[(b) - (a)] / (c)
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	1,595,230	2,255,298	660,068	70.73 %	1,211,140	54.50 %
12/31/08*	1,733,946	2,255,298	521,352	76.88 %	1,211,140	43.05 %

<sup>#</sup> Experience Study.

<sup>\$</sup> After change in benefit structure.

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

#### SCHEDULE OF EMPLOYER CONTRIBUTIONS

Valuation Year	Annual Required	Percent
Ended	Contribution	Contributed
6/30/1991	\$24,839,920	100%
6/30/1992	24,909,099	100%
6/30/1993	25,445,123	100%
6/30/1994	26,935,383	100%
6/30/1995	29,225,043	100%
6/30/1996	30,087,963	100%
6/30/1997	35,159,514	100%
6/30/1998	36,932,114	100%
6/30/1999	38,422,667	100%
6/30/2000	35,655,898	100%
6/30/2001	29,145,883	100%
6/30/2002	30,849,067	100%
6/30/2003	34,506,630	100%
12/31/2004	34,417,581	100%
12/31/2005	33,245,249	100%
12/31/2006	35,532,122	100%
12/31/2007	37,417,072	100%
12/31/2008	39,098,636	100%

The figures on this page show the actual employer contribution required for compliance with Governmental Accounting Standards (GASB No. 27). A figure of 100% in the 'Percent Contributed' column means that the employer contribution complied with Governmental Accounting Standards. The figures are prepared in draft form for review by the auditor.

#### SUMMARY OF ACTUARIAL METHODS AND ASSUMPTIONS

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

Valuation date December 31, 2008

Actuarial cost method Individual entry age actuarial cost method (see page G-2)

Amortization method Level percent of payroll

Remaining amortization period 30 years

Asset valuation method 5-year smoothed market

75%/125% corridor

Actuarial assumptions

Investment rate of return\* 7.50%

Projected salary increase\* 4.0 - 8.2%

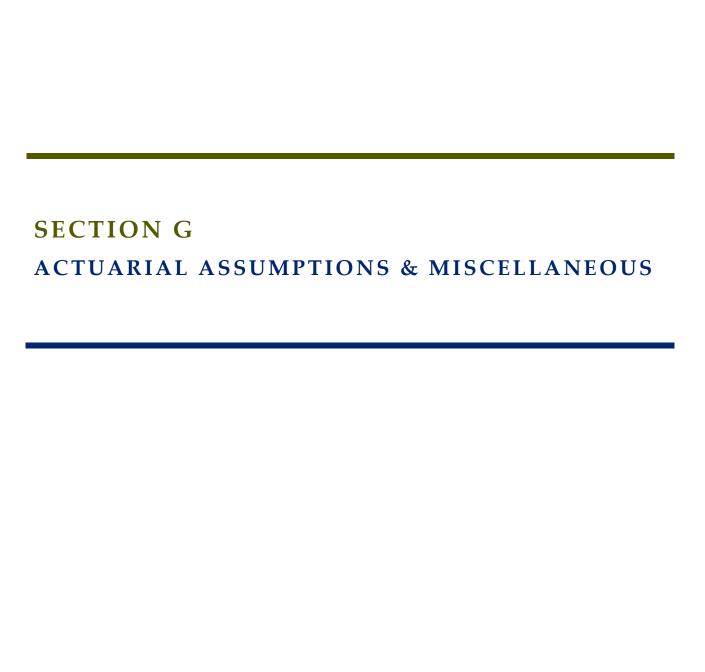
\*Includes wage inflation at 3.75%

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

Fiscal Year	ARC (Annual	Interest on	ARC	Net	APC (Annual			
Ended	Required	Prior Year's	Adjustment	Change	Pension	Actual ER	Change	New NPO
June 30	ER Conts)	NPO	(NPO Amort)	to ARC	Cost)	Contribution	in NPO	Balance
1995	\$29,225,043	\$0	\$0	\$0	\$29,225,043	\$29,225,043	\$0	\$0
1996	30,087,963	0	0	0	30,087,963	30,087,963	0	0
1997	35,159,514	0	0	0	35,159,514	35,159,514	0	0
1998	36,932,114	0	0	0	36,932,114	36,932,114	0	0
1999	38,422,667	0	0	0	38,422,667	38,422,667	0	0
2000	35,655,898	0	0	0	35,655,898	35,655,898	0	0
2001	29,145,883	0	0	0	29,145,883	29,145,883	0	0
2002	30,849,067	0	0	0	30,849,067	30,849,067	0	0
2003	34,506,630	0	0	0	34,506,630	34,506,630	0	0
2004	34,417,581	0	0	0	34,417,581	34,417,581	0	0
2005	33,245,249	0	0	0	33,245,249	33,245,249	0	0
2006	35,532,122	0	0	0	35,532,122	35,532,122	0	0
2007	37,417,072	0	0	0	37,417,072	37,417,072	0	0
2008	39,098,636	0	0	0	39,098,636	39,098,636	0	0

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.



#### **APPENDIX**

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

The actuarial assumptions used in making the valuation are shown in this Appendix of the report. The assumptions were established for the December 31, 2004 actuarial valuation, based upon a study of experience during the period July 1, 1999 to June 30, 2004.

#### **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 sample ages on page G-7. Part of the assumption for each age 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 2 years for males and 1 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.

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

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

Present assets (cash and investments) are valued on a market-related basis effective June 30, 1986.

Page D-3 provides specifics. A one time adjustment toward market was made in connection with the 1990-93 experience study and an additional one-time adjustment set the funding value equal to the market value as of December 31, 2004. An 85%-115% market value corridor was added in the December 31, 2005 valuation. This was adjusted to 75% - 125% in the December 31, 2008 valuation, as requested by the Board.

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

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

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

(Applicable to ERFC and ERFC 2001)

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

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

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

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

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

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

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

16.03E The Amortization Period for Unfunded Liabilities. In the biennial determination of the Employer contribution rate, the amortization period for unfunded liabilities will be set within the parameters permitted by GASB standards. If those standards and the other principles stated in §§ 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

#### STANDARD MORTALITY

	Present V	alue of \$1			
Sample	Monthly	for Life	<b>Future Life</b>		
Attained	Increasing 3.	0% Annually	Expectancy (years)		
Ages	Men	Women	Men	Women	
55	\$183.72	\$195.47	27.95	31.11	
60	165.91	178.85	23.52	26.49	
65	146.49	160.36	19.39	22.11	
70	126.51	140.71	15.66	18.08	
75	106.26	119.31	12.34	14.31	
80	85.94	97.25	9.40	10.93	
Ref:	261 x 1.00	262 x 1.00			
	sb 2	sb 1			

#### **DISABLED MORTALITY**

Sample		alue of \$1 for Life	Futur	e Life	
Attained	Increasing 3.	0% Annually	Expectancy (years)		
Ages	Men	Women	Men	Women	
55	\$128.18	\$144.69	17.14	20.34	
60	118.67	135.13	15.18	18.04	
65	110.09	124.28	13.46	15.71	
70	99.71	111.15	11.60	13.27	
75	86.55	94.60	9.55	10.66	
80	70.31	76.56	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

	Hired Befo	ore 7/1/2001	Hired (	on or After	7/1/2001
	Type of R	Retirement	Age		Service
Ages	Service	Reduced Service	Based	Service	Based
45		5%			
46		5%			
47		5%			
48		5%			
49		5%			
50		6%			
51		7%			
52		8%			
53		9%			
54		10%			
55	50%	10%		30	35%
56	40%	5%		31	28%
57	30%	5%		32	21%
58	30%	5%		33	21%
59	30%	5%		34	21%
60	30%	10%	21%	35	21%
61	40%	10%	28%	36	28%
62	40%	20%	28%	37	28%
63	25%	20%	18%	38	35%
64	25%	20%	18%	39	50%
65	50%		50%	40 & Up	100%
66	40%		40%		
67	30%		30%		
68	40%		40%		
69	20%		20%		
70	20%		20%		
71	20%		20%		
72	30%		30%		
73	40%		40%		
74	50%		50%		
75	100%		100%		
76	100%		100%		
77	100%		100%		
78	100%		100%		
79	100%		100%		
80	100%		100%		
Ref:	542	541	666		667

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

		% of Active Members Separating Within Next Year									
	Years		Deat	th		J		bility			
	of	Ordi	inary	Dı	ıty	Ordi	inary	Dı	ıty	Other	
Ages	Service	Men	Women	Men	Women	Men	Women	Men	Women	Men	Women
25	3 & Up	0.04%	0.02%	0.01%	0.00%	0.06%	0.03%	0.01%	0.01%	12.00%	15.80%
30		0.06%	0.02%	0.01%	0.00%	0.06%	0.05%	0.02%	0.01%	8.50%	12.00%
35		0.06%	0.03%	0.01%	0.00%	0.09%	0.09%	0.02%	0.02%	5.75%	8.20%
40		0.07%	0.05%	0.01%	0.01%	0.14%	0.12%	0.03%	0.03%	4.30%	5.00%
45		0.10%	0.07%	0.01%	0.01%	0.21%	0.18%	0.05%	0.05%	2.90%	3.70%
50		0.16%	0.10%	0.02%	0.01%	0.34%	0.29%	0.08%	0.07%	2.50%	3.20%
55		0.27%	0.16%	0.04%	0.02%	0.59%	0.49%	0.15%	0.12%	2.50%	3.00%
60		0.47%	0.29%	0.06%	0.04%	0.98%	0.71%	0.24%	0.18%	2.50%	3.00%
Ref:	·	0.75 x 261	0.75 x 262	0.1 x 261	0.1 x 262					214	214
		sb 2	sb 1	sb 2	sb 1	0.32 x 16	0.32 x 17	0.08 x 16	0.08 x 17	319	318

Rates of separation for members with less than 3 years of service are assumed to be: 18% in the first year, 15% in the second year and 12% in the third year.

#### SAMPLE PAY INCREASE ASSUMPTIONS FOR AN INDIVIDUAL MEMBER

	Pay Increase Assumption					
Sample	Merit &	Base	Increase			
Ages	Seniority	(Economy)	Next Year			
20	4.45%	3.75%	8.20%			
25	3.25%	3.75%	7.00%			
30	2.75%	3.75%	6.50%			
35	2.35%	3.75%	6.10%			
40	2.05%	3.75%	5.80%			
45	1.55%	3.75%	5.30%			
50	1.15%	3.75%	4.90%			
55	0.75%	3.75%	4.50%			
60	0.35%	3.75%	4.10%			
65	0.25%	3.75%	4.00%			
Ref:	124					

Age at		Sa	mple Entry A	.ge	
Separation	25	30	35	40	45
30	0.5000				
31	0.4854				
32	0.4708				
33	0.4563				
34	0.4417				
35	0.4271	0.5000			
36	0.4125	0.4816			
37	0.3979	0.4632			
38	0.3833	0.4447			
39	0.3688	0.4263			
40	0.3542	0.4079	0.5000		
41	0.3396	0.3895	0.4750		
42	0.3250	0.3711	0.4500		
43	0.3104	0.3526	0.4250		
44	0.2958	0.3342	0.4000		
4.5	0.2012	0.2150	0.2750	0.5000	
45	0.2813	0.3158	0.3750	0.5000	
46	0.2667	0.2974	0.3500	0.4611	
47	0.2521	0.2789	0.3250	0.4222	
48	0.2375	0.2605	0.3000	0.3833	
49	0.2229	0.2421	0.2750	0.3444	
50	0.2083	0.2237	0.2500	0.3056	0.5000
51	0.1938	0.2053	0.2350	0.2667	0.4125
52	0.1792	0.1868	0.2000	0.2278	0.3250
53	0.1646	0.1684	0.1750	0.1889	0.2375
54	0.1500	0.1500	0.1500	0.1500	0.1500

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 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 Inflation)

No. Years		Cash	Bonds (L	ong Term)				
Ended	Inflation	Equiv.	US	Corporate	Stocks	Real Re	eturn for Sa	mple Fund
December	(CPI)	(T Bills)	Treasury	(Sol. Bro.)	(S & P 500)	A	В	С
1/2004	3.3	(2.0)	5.0	5.2	7.4	5.0	5.5	5.8
1/2005	3.4	(0.4)	4.3	2.4	1.5	2.4	2.0	1.7
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)
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
5/2008	2.7	0.3	7.5	3.0	(4.8)	2.4	0.6	(1.2)
30/2008	3.8	1.9	6.2	5.4	6.9	6.2	6.5	6.6

#### **Sample Funds** (only three of many reasonable samples)

	A	В	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** 

Year-by-Year Total Returns (1926-2008)

### For a type of investment, Red means a REAL Return less than 3% [(Total Return - Inflation) < 3%]

### For Inflation, RED means a purchasing power loss

Year	Large Company Stocks	Small Company Stocks	Long-Term Corporate Bonds	Long-Term Government Bonds	IntermedTerm 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 1930	-8.42 -24.90	-51.36 -38.15	3.27 7.98	1.17 4.66	6.01 6.72	4.75 2.41	0.20 -6.03
1930	-43.34	-36.15 -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
<u>1939</u> 1940	-0.41 -9.78	0.35 -5.16	3.97 3.39	5.94 6.09	4.52 2.96	0.02	-0.48 0.96
1940	-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 10.75	4.14	3.40 6.45	1.85	0.81	2.71
1949 1950	18.79 31.71	19.75 38.75	3.31 2.12	6.45 0.06	2.32 0.70	1.10 1.20	-1.80 5.79
1950	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 -2.22	7.46 -6.09	7.84	3.14 1.54	3.02 1.76
1958 1959	43.36 11.96	64.89 16.40	-2.22 -0.97	-0.09 -2.26	-1.29 -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
<u>1969</u> 1970	-8.50 4.01	-25.05 -17.43	-8.09 18.37	- <u>5.07</u> 12.11	- <mark>0.74</mark> 16.86	6.58 6.52	6.11 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 1979	6.56 18.44	23.46 43.46	-0.07 -4.18	-1.18 -1.23	3.49 4.09	7.18 10.38	9.03 13.31
1980	32.42	39.88	-4.18 -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 1987	18.47 5.23	6.85 -9.30	19.85 -0.27	24.53 - <mark>2.71</mark>	15.14 2.90	6.16 5.47	1.13 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 1995	1. <mark>31</mark> 37.43	3.11 34.46	-5.76 27.20	- <mark>7.77</mark> 31.67	- <mark>5.14</mark> 16.80	3.90 5.60	2.67 2.54
1995	23.07	17.62	1.40	-0.93	2.10	5.00 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 2004	28.70	60.70 18.39	5.27 8.72	1.45 8.51	2.40 2.25	1.02 1.20	1.88
2004 2005	10.87 <mark>4.91</mark>	18.39 <b>5.69</b>	8.72 5.87	8.51 7.81	1.36	1.20 2.98	3.26 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

GABRIEL, ROEDER, SMITH & COMPANY from SBBI Yearbook

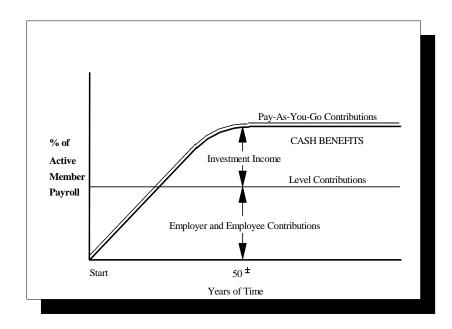
<sup>\*</sup> Calculated using December to December CPI-U (1982-84=100, when available), not seasonally adjusted.

#### **Economic Assumptions**

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

#### **Demographic Assumptions**

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



#### RELATIONSHIP BETWEEN PLAN GOVERNING BODY AND THE ACTUARY

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

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

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

#### **DEFINITIONS OF TECHNICAL TERMS**

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

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

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

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

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

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

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

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

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

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

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

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

### MISCELLANEOUS AND TECHNICAL ASSUMPTIONS DECEMBER 31, 2008

Marriage Assumption: 100% of males and 100% of females are assumed to be married

for purposes of death-in-service benefits. Male spouses are

assumed to be three years older than female spouses.

**Pay Increase Timing:** Nine months after the valuation date (October 1).

**Decrement Timing:** Decrements of all types are assumed to occur mid-year.

Eligibility Testing: Eligibility for benefits is determined based upon the age

nearest birthday and service nearest whole year on the date the

decrement is assumed to occur.

**Miscellaneous Loads:** For members hired prior to July 1, 2001 computed liabilities

and normal costs are increased by 3% to reflect service credit

for unused sick leave that may be granted at retirement.

**Decrement Relativity:** Decrement rates are used directly from the experience study,

without adjustment for multiple decrement table effects.

**Decrement Operation:** Disability and turnover do not operate during retirement

eligibility.

**Incidence of Contributions:** Contributions are assumed to be received continuously

throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at

the time contributions are made.

**Normal Form of Benefit:** The assumed normal form of benefit is the straight life form.

**Benefit Service:** Exact Fractional Service is used to determine the amount of

benefit payable.

**Actuarial Equivalent** 

**Factors:** 

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.



May 13, 2009

ERFC Board of Trustees c/o Dr. Alan Belstock, Executive Director 8001 Forbes Place, Suite 300 Springfield, Virginia 22151

Re: The Report of the ERFC Annual Actuarial Valuation December 31, 2008

Dear Alan:

Enclosed are 10 copies of the report. Please call if you need additional copies.

Sincerely,

Judith A. Kermans

whith A. Keinens

JAK:mrb Enclosures