

**FIREFIGHTERS'  
RETIREMENT SYSTEM**

ACTUARIAL VALUATION AS OF  
JUNE 30, 2008

# G. S. CURRAN & COMPANY, LTD.

Actuarial Services

10555 North Glenstone Place • Baton Rouge, Louisiana 70810 • (225)769-4825

Gary S. Curran, FCA, MAAA, ASA, EA  
Consulting Actuary

December 6, 2008

Board of Trustees  
Firefighters' Retirement System  
3100 Brentwood Drive  
Baton Rouge, LA 70809

Ladies and Gentlemen:

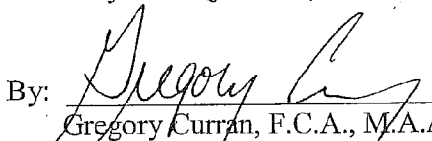
We are pleased to present our report on the actuarial valuation of the Firefighters' Retirement System for the fiscal year ending June 30, 2008. Our report is based on the actuarial assumptions specified and relies on the data supplied by the system's administrators and accountants. This report was prepared at the request of the Board of Trustees of the Firefighters' Retirement System of the State of Louisiana. The primary purposes of the report are to determine the actuarially required contribution for the retirement system for the fiscal year ending June 30, 2009, to recommend the net direct employer contribution rate for fiscal 2010, and to provide information for the system's financial statements. This report was prepared exclusively for the Firefighters' Retirement System for a specific limited purpose. It is not for the use or benefit of any third party for any purpose.

This report has been prepared in accordance with generally accepted actuarial principles and practices, and to the best of our knowledge and belief, fairly reflects the actuarial present values and costs stated herein. The undersigned actuaries are members of the American Academy of Actuaries and have met the qualification standards for the American Academy of Actuaries to render the actuarial opinions incorporated in this report, and are available to provide further information or answer any questions with respect to this valuation.

Sincerely,

G. S. CURRAN & COMPANY, LTD.

By:   
Gary Curran, F.C.A., M.A.A.A., A.S.A.

By:   
Gregory Curran, F.C.A., M.A.A.A., A.S.A.

## TABLE OF CONTENTS

<u>SUBJECT</u>	<u>PAGE</u>
Summary of Valuation Results .....	1
Comments on Data .....	2
Comments on Actuarial Methods and Assumptions .....	2
Changes in Plan Provisions .....	3
Asset Experience .....	4
Plan Demographics and Liability Experience .....	5
Funding Analysis and Recommendations .....	5
Cost of Living Increases .....	7
Graphs.....	9
Exhibit I - Analysis of Actuarially Required Contributions.....	14
Exhibit II - Present Value of Future Benefits .....	15
Exhibit III (Schedule A) - Market Value of Assets .....	16
Exhibit III (Schedule B) - Actuarial Value of Assets .....	17
Exhibit IV - Present Value of Future Contributions.....	18
Exhibit V (Schedule A) - Actuarial Accrued Liabilities.....	18
Exhibit V (Schedule B) - Change in Unfunded Actuarial Accrued Liability.....	18
Exhibit V (Schedule C) - Amortization of Unfunded Actuarial Accrued Liability .....	19
Exhibit VI - Analysis of Increase in Assets.....	20
Exhibit VII - Fund Balance.....	21
Exhibit VIII - Pension Benefit Obligation.....	21
Exhibit IX - Cost of Living Adjustments - Target Ratio .....	22
Exhibit X - Census Data .....	23
Exhibit XI - Year to Year Comparison.....	32
Summary of Principal Plan Provisions .....	34
Actuarial Assumptions.....	37
Glossary .....	41

## SUMMARY OF VALUATION RESULTS FIREFIGHTERS' RETIREMENT SYSTEM

Valuation Date:	June 30, 2008	June 30, 2007
Census Summary: Active Contributing Members	3,821	3,632
Retired Members and Beneficiaries	1,631	1,555
DROP Participants	130	134
Terminated Due a Deferred Benefit	55	54
Terminated Due a Refund	350	298
Payroll (excludes DROP Participants):	\$ 169,401,716	\$ 150,960,665
Benefits in Payment:	\$ 48,416,581	\$ 43,972,738
Market Value of Assets:	\$ 1,092,459,674	\$ 1,138,227,081
Unfunded Actuarial Accrued Liability:	\$ 187,351,961	\$ 166,667,308
Actuarial Asset Value:	\$ 1,129,809,421	\$ 1,025,656,019
Actuarial Accrued Liability:	\$ 1,317,161,382	\$ 1,192,323,327
Ratio of Actuarial Value of Assets to Actuarial Accrued Liabilities:	85.78%	86.02%
*****		
	FISCAL 2009	FISCAL 2008
Normal Cost as of July 1:	\$ 39,982,649	\$ 35,755,562
Amortization Cost (Credit) as of July 1:	\$ 16,443,367	\$ 14,032,563
Total Actuarially Required Contribution Inclusive of Estimated Administrative Costs:	\$ 59,424,024	\$ 52,587,938
Projected Employee Contributions (8%)	\$ 13,946,489	\$ 12,475,594
Expected Insurance Premium Taxes	\$ 21,265,547	20,521,771
Employer's Net Direct Actuarially Req'd Contributions	\$ 24,211,988	\$ 19,590,573
Actual Net Direct Employer Contribution Rate:	12.50%	13.75%
Actuarially Required Net Direct Employer Cont. Rate:	13.89%	12.56%
*****		
Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2010:	14.00%	
Employee Contribution Rate:	8.00% of payroll	
Actuarial Cost Method:	Individual Entry Age Normal with allocation of cost based on earnings. Unfunded Accrued Liability (exclusive of liability for mergers) as of June 30, 2002 amortized through June 30, 2029 with level dollar payments. Unfunded Accrued Liability resulting from merged systems amortized over thirty years.	
Valuation Interest Rate:	7½% (Net of Investment Expense)	
Exclusions from Census:	None	
Basis of Actuarial Asset Value:	The actuarial value of assets is based on the market value of investment securities adjusted to average in asset earnings above or below the assumed rate of return over a five-year period, subject to a minimum of 90% of the market value of assets and a maximum of 110% of the market value of assets.	
Changes in Methods and Assumptions:	Technical change in valuation of survivor benefits.	
Method of Recognizing Gains and Losses Accrued After June 30, 2004:	Amortized over 15 years with level dollar payments.	

## COMMENTS ON DATA

For the valuation, the administrator of the system furnished a census on CD ROM derived from the system's master data processing file indicating each active covered employee's sex, date of birth, service credit, annual salary, and accumulated contributions. Information on retirees detailing dates of birth of retirees and beneficiaries, sex, as well as option categories and benefit amounts, was provided in like manner. In addition, data was supplied on former employees who are vested or who have contributions remaining on deposit. As illustrated in Exhibit X, there are 3,821 active contributing members in the system of whom 1,581 have vested retirement benefits; in addition, there are 130 participants in the Deferred Retirement Option Plan (DROP); 1,631 former system members or their beneficiaries are receiving retirement benefits. An additional 405 members have contributions remaining on deposit with the system; of this number, 55 have vested rights for future retirement benefits. All individuals submitted were included in the valuation.

Census data submitted to our office is tested for errors. Several types of census data errors are possible; to ensure that the valuation results are as accurate as possible, a significant effort is made to identify and correct these errors. In order to minimize coverage errors (i.e., missing or duplicated individual records) the records are checked for duplicates, and a comparison of the current year's records to those submitted in prior years is made. Changes in status, new records, and previous records, which have no corresponding current record are identified. This portion of the review indicates the annual flow of members from one status to another and is used to check some of the actuarial assumptions, such as retirement rates, rates of withdrawal, and mortality. In addition, the census is checked for reasonableness in several areas, such as age, service, salary, and current benefits. The records identified by this review as questionable are checked against data from prior valuations; those not recently verified are included in a detailed list of items sent to the system's administrative staff for verification and/or correction. Once the identified data has been researched and verified or corrected, it is returned to us for use in the valuation. Occasionally some requested information is either unavailable or impractical to obtain. In such cases, values may be assigned to missing data. The assigned values are based on information from similar records or based on information implied from other data in the record.

In addition to the statistical information provided on the system's participants, the system's administrator furnished general information related to other aspects of the system's expenses, benefits and funding. Valuation asset values as well as income and expenses for the fiscal year were based on information furnished by the system's accounting staff. As indicated in the system's financial statements, the net market value of the system's assets was \$1,092,459,674 as of June 30, 2008. Net investment income for fiscal 2008 measured on a market value basis amounted to a loss of \$56,782,626. Contributions to the system for fiscal 2008 totaled \$66,305,435; benefits and expenses amounted to \$55,290,215.

Notwithstanding our efforts to review both census and financial data for apparent errors, we must rely upon the system's administrative staff and accountants to provide accurate information. Our review of submitted information is limited to validation of reasonableness and consistency. Verification of submitted data to source information is beyond the scope of our efforts.

## COMMENTS ON ACTUARIAL METHODS AND ASSUMPTIONS

This valuation is based on the Entry Age Normal actuarial cost method. Under the provisions of Louisiana R.S. 11:103 the funding excess for the plan which was determined to be \$239,425 as of June

30, 1989 was amortized over thirty years. Subsequent experience gains and losses are amortized over fifteen years. Contribution gains or losses arising from contributions in excess of or less than the required contributions are also amortized over fifteen years as are benefit and assumption changes. Further changes in the unfunded accrued liability generated by mergers of groups of firefighters into the system are amortized over thirty years. All non-merger amortization bases in existence on June 30, 2002, were combined, offset, and re-amortized through June 30, 2029, in accordance with R.S. 11:103(D). All amortization payments are on a level dollar basis.

The actuarial assumptions utilized for the report are outlined on pages thirty-seven through forty. In the aggregate the assumptions represent our "best estimate" of future long-term experience for the fund. All calculations, recommendations, and conclusions are based on the assumptions specified. To the extent that prospective experience differs from that assumed, adjustments will be required to contribution levels. Such differences will be revealed in future actuarial valuations.

All assumptions were the same as those used for the prior year with the exception of a technical change made in the valuation of survivor benefits. The change resulted in a gain of \$138,425, which decreased the interest adjusted amortization payments on the system's UAL by \$15,125 or 0.01% of payroll.

## CHANGES IN PLAN PROVISIONS

The following changes in plan provisions were enacted during the 2008 Regular Session of the Louisiana Legislature:

**Act 75** eliminates the provision found in R.S. 11:2258(C) whereby the benefits paid to the surviving spouse of disability retiree cease upon remarriage.

**Act 114** provides for the accrual of interest on delinquent contribution payments at a rate equal to the greater of:

- 1) the actuarial valuation rate, or
- 2) an amount equal to the rate of earnings of the system's investment portfolio

**Act 258** stipulates that an affirmative vote by at least five members of the board of trustees will be necessary for a decision by the trustees at any meeting of the board. The phrase "affirmative vote" means that the vote will be cast in favor of approving any motion.

**Act 261** stipulates that, notwithstanding the provisions of R.S. 11:233(B)(2)(g), any participating employer that defers the payment of regularly scheduled holiday pay and then pays this compensation to its employees in the same calendar year as its deferral in the form of a one-time annual payment will include this deferred compensation in the employees' earnable compensation for the purpose of calculating and paying employee contributions to the system.

**Act 496** requires the board of trustees to develop and implement a procedure for determining whether a member was killed in the line of duty.

**Act 817** provides, in regard to individuals merged into the Firefighters' Retirement System from the Firemen's Pension and Relief Fund for the city of Lafayette, that the accumulated cost-of-living adjustments (COLAs) granted by the Lafayette City-Parish Consolidated Government to any

individual by virtue of the individual's previous membership in the Firemen's Pension and Relief Fund for the city of Lafayette, will not be reduced by the Lafayette City-Parish Consolidated Government if any COLA is payable by the Firefighters' Retirement System. However, if the Lafayette City-Parish Consolidated Government has granted a COLA to any such individual in any year in which the Firefighters' Retirement System has also granted a COLA, then nothing will prevent the Lafayette City-Parish Consolidated Government from reducing the amount of its COLA for that same year by an amount not to exceed two percent, provided the amount of the Firefighters' Retirement System COLA is greater than two percent, and the amount of the previous years' accumulated COLAs will not be reduced.

### ASSET EXPERIENCE

The actuarial and market rates of return for the past ten years are given below. These rates of return on assets were arrived at by assuming a uniform distribution of income and expense throughout the fiscal year.

	<u>Market Value</u>	<u>Actuarial Value</u>
1999	6.9%	8.4%
2000	3.5%	5.5%
2001	-2.9%	0.7%
2002	-3.7%	-3.0%
2003	5.4%	0.9%
2004	11.0%	8.0%
2005	10.4%	10.4%
2006	12.3%	9.9% *
2007	17.2%	11.6%
2008	- 5.0%	9.0%

\* Based on the actuarial value of assets and income and expense including the effect of a change in the method for calculating the actuarial value of assets under a 5-year smoothing of investment earnings above or below the assumed 7.5% rate of return. Returns for years 1998 through 2005 were based on a 2-year smoothing of recognized realized and unrealized capital gains (losses) on all securities.

The market rate of return gives a measure of investment return on a total return basis and includes realized and unrealized capital gains and losses as well as interest income. (Asset and income values for merger notes were excluded from calculations in order to provide a measurement of the return on the portion of the portfolio under management.) This rate of return gives an indication of performance for an actively managed portfolio where securities are bought and sold with the objective of producing the highest total rate of return. During 2008, the fund earned \$24,750,069 of dividends, interest and other recurring income. In addition, the Fund had net realized and unrealized capital losses on investments of \$77,605,058. In addition, investment expenses amounted to \$3,927,637. The geometric mean of the market value rates of return measured over the last ten years was 5.3%.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 7.5% used for the valuation. This rate is calculated based on the actuarial value of assets and all interest, dividends, and recognized capital gains as given in Exhibit VI. Investment income used to calculate this yield is based upon a smoothing of gains or losses over a five year period. The difference between rates of return on an actuarial and market value basis results from the smoothing of gains or losses on investments relative to the valuation interest rate over a five-year period. Yields in excess of the 7.5% assumption will reduce future costs; yields below 7.5% will increase future costs. For fiscal 2008 the

system experienced net actuarial investment earnings of \$15,808,377 more than the actuarial assumed earnings rate of 7.5%. This excess in earnings produced an actuarial gain, which decreased the interest-adjusted amortization payments on the system's UAL by \$1,727,285 or 0.99% of payroll, in fiscal 2009.

## **PLAN DEMOGRAPHICS AND LIABILITY EXPERIENCE**

A reconciliation of the census for the system is given in Exhibit X. The average active contributing member is 41 years old with 11.11 years of service credit and an annual salary of \$44,334. The system's active contributing membership experienced an increase during fiscal 2008 of 189 members. The number of DROP participants decreased by 4. Over the last five years active membership has increased by 461 members. A review of the active census by age indicates that over the last ten years the population in the thirty-one to forty age group has decreased while the proportion of active members over forty increased. Over the same ten-year period the system showed a slight increase in the percentage of members in the ten to nineteen year service group and the corresponding decrease in the percentage of members with service over twenty years.

The average retiree is 63 years old with a monthly benefit of \$2,771. The number of retirees and beneficiaries receiving benefits from the system increased by 76 during the fiscal year. Over the last five years, the number has increased by 316; during the same period, the annual benefits in payment increased by \$16,873,943. The changes in the makeup of the population along with changes in their salary increased the interest adjusted normal cost over the last year by \$4,382,737; the normal cost percentage increased by 0.01% of payroll.

During fiscal year 2008 thirty-three firefighters from St. George and Central Fire Protection Districts were merged into the Firefighters' Retirement System from the East Baton Rouge Parish Retirement System under the provisions of R. S. 11:2253(c). The effective date of this merger was August 31, 2007. The portion of the cost of this merger to be paid from the Insurance Premium Tax Fund as of August 31, 2007 was calculated to be \$1,465,638. This amount with interest at 7.50% through June 30, 2008 is \$1,556,324. Based on a 30-year amortization, the interest-adjusted amortization payment for this merger is 127,096 or 0.07% of projected payroll.

Plan liability experience for fiscal 2008 was unfavorable. Salary increase rates at most durations were significantly above projections. Actual retirements were slightly above projections. Both of these factors increased costs. Withdrawals exceeded projections. Disabilities and DROP entries were slightly below projections. Retiree deaths were above projections. These factors partially offset the increase in costs. Net plan liability losses totaled \$27,052,835. These losses increased the interest-adjusted amortization payments on the system's unfunded accrued liability by \$2,955,899, or 1.70% of payroll, in fiscal 2009. In addition to the general liability losses, an additional loss of \$15,006,752 was generated by a COLA granted in fiscal 2008. The interest-adjusted amortization payment for the COLA liability was \$1,639,697 or 0.94% of projected payroll.

## **FUNDING ANALYSIS AND RECOMMENDATIONS**

Actuarial funding of a retirement system is a process whereby funds are accumulated over the working lifetimes of employees in such a manner as to have sufficient assets available at retirement to pay for the lifetime benefits accrued by each member of the system. The required contributions are



determined by an actuarial valuation based on rates of mortality, termination, disability, and retirement, as well as investment return and other statistical measures specific to the particular group. Each year a determination is made of two cost components, and the actuarially required contributions are based on the sum of these two components plus administrative expenses. These two components are the normal cost and the amortization payments on the unfunded actuarial accrued liability. The normal cost refers to the annual cost for active members allocated to each year by the particular cost method utilized. The term unfunded accrued liability (UAL) refers to the excess of the present value of plan benefits over the sum of current assets and future normal costs. Each year the UAL grows with interest and is reduced by payments. In addition it may be increased or diminished by plan experience, changes in assumptions, or changes in benefits including COLA's. Contributions in excess of or less than the actuarially required amount can also decrease or increase the UAL balance. New entrants to the system can also increase or lower costs as a percent of payroll depending upon their demographic distribution. Finally, payroll growth affects plan costs since payments on the system's unfunded liability are on a fixed, level schedule. If payroll increases, these costs are reduced as a percentage of payroll.

In order to establish the actuarially required contribution in any given year, it is necessary to define the assumptions, funding method, and method of amortizing the UAL. Thus, the determination of what contribution is actuarially required depends upon the funding method and amortization schedules employed. Regardless of the method selected, the ultimate cost of providing benefits is dependent upon the benefits, expenses, and investment earnings. Only to the extent that some methods accumulate assets more rapidly and thus produce greater investment earnings does the funding method affect the ultimate cost.

An explanation of the change in costs related to asset and liability gains and losses as well as changes in demographics and assumptions is given in prior sections of the report. In addition to these components, variances in contribution levels and payroll also affect costs. For fiscal 2008 contributions totaled \$4,399,499 more than required; the interest-adjusted amortization payment on the contribution surplus for fiscal 2008 is \$480,706 or 0.28% of payroll. In addition, for fiscal 2009 the net effect of the change in payroll on amortization costs was to reduce such costs by 0.98% of payroll.

A reconciliation in the change in costs is given below. Values listed in dollars are interest adjusted for payment throughout the fiscal year. Percentages are based on the projected payroll for fiscal 2009 except for those items labeled fiscal 2008.

	Dollars	Percentage of Payroll
Normal Cost for Fiscal 2008	\$ 37,072,156	23.77%
Cost of Demographic and Salary Changes	<u>\$ 4,382,737</u>	<u>0.01%</u>
Normal Cost for Fiscal 2009	\$ 41,454,893	23.78%
UAI Payments for Fiscal 2008	\$ 14,549,271	9.33%
Change due to change in payroll	N/A	(0.98%)
Additional Amortization Expenses for Fiscal 2009:		
Benefits/COLA Loss (Gain)	\$ 1,639,697	0.94%
Assumption Loss (Gain)	\$ (15,125)	(0.01%)
Merger Loss (Gain)	\$ 127,096	0.07%
Asset Loss (Gain)	\$ (1,727,285)	(0.99%)

determined by an actuarial valuation based on rates of mortality, termination, disability, and retirement, as well as investment return and other statistical measures specific to the particular group. Each year a determination is made of two cost components, and the actuarially required contributions are based on the sum of these two components plus administrative expenses. These two components are the normal cost and the amortization payments on the unfunded actuarial accrued liability. The normal cost refers to the annual cost for active members allocated to each year by the particular cost method utilized. The term unfunded accrued liability (UAL) refers to the excess of the present value of plan benefits over the sum of current assets and future normal costs. Each year the UAL grows with interest and is reduced by payments. In addition it may be increased or diminished by plan experience, changes in assumptions, or changes in benefits including COLA's. Contributions in excess of or less than the actuarially required amount can also decrease or increase the UAL balance. New entrants to the system can also increase or lower costs as a percent of payroll depending upon their demographic distribution. Finally, payroll growth affects plan costs since payments on the system's unfunded liability are on a fixed, level schedule. If payroll increases, these costs are reduced as a percentage of payroll.

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An explanation of the change in costs related to asset and liability gains and losses as well as changes in demographics and assumptions is given in prior sections of the report. In addition to these components, variances in contribution levels and payroll also affect costs. For fiscal 2008 contributions totaled \$4,399,499 more than required; the interest-adjusted amortization payment on the contribution surplus for fiscal 2008 is \$480,706 or 0.28% of payroll. In addition, for fiscal 2009 the net effect of the change in payroll on amortization costs was to reduce such costs by 0.98% of payroll.

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Cost of Demographic and Salary Changes	\$ <u>4,382,737</u>	<u>0.01%</u>
Normal Cost for Fiscal 2009	\$ 41,454,893	23.78%
UAL Payments for Fiscal 2008	\$ 14,549,271	9.33%
Change due to change in payroll	N/A	(0.98%)
Additional Amortization Expenses for Fiscal 2009:		
Benefits/COLA Loss (Gain)	\$ 1,639,697	0.94%
Assumption Loss (Gain)	\$ (15,125)	(0.01%)
Merger Loss (Gain)	\$ 127,096	0.07%
Asset Loss (Gain)	\$ (1,727,285)	(0.99%)

Contribution Loss (Gain)	\$ (480,706)	(0.28%)
Liability Loss (Gain)	<u>\$ 2,955,899</u>	<u>1.70%</u>
Net Amortization Expense (Credit) for Fiscal 2009	\$ 2,499,576	1.43%
Estimated Administrative Cost for Fiscal 2009	\$ 920,284	0.53%
Total Normal Cost & Amortization Payments	\$ 59,424,024	34.09%

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The normal cost for fiscal 2009 as of July 1, 2008 is \$39,982,649. The amortization payments on the system's unfunded actuarial accrued liability as of July 1, 2008 total \$16,443,367. The total actuarially required contribution is determined by adjusting the sum of these two values for interest (since payments are made throughout the fiscal year) and adding estimated administrative expenses. As given in line 11 of Exhibit I the total actuarially required contribution for fiscal 2009 is \$59,424,024. We project that employee contributions will total \$13,946,489 for the fiscal year. This leaves \$45,477,535 to be funded from direct employer contributions and insurance premium taxes. We estimate insurance premium taxes of 21,265,547 will be paid to the system in fiscal 2009. Hence, the total actuarially required net direct employer contribution for fiscal 2009 amounts to 24,211,988 or 13.89% of payroll.

Since actual employer contributions for fiscal 2009 are 12.50% of payroll, we estimate the effect of the contribution shortfall will be to increase required contributions in fiscal 2010 by 0.15% of payroll. Since the statutes require rounding the net direct employer contributions rate to the nearest 0.25%, we recommend a net direct employer contribution rate of 14.00% for fiscal 2010.

### COST OF LIVING INCREASES

During fiscal 2008 the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 5.02%. Cost of living provisions for the system are detailed in R.S. 11:2260A(7) and R.S. 11:246. The former statute allows the board to use interest earnings in excess of the normal requirements to grant annual cost of living increases of 3% of each retiree's current benefit. R.S. 11:246 provides cost of living increases to retirees and beneficiaries over the age of 65 equal to 2% of the benefit in payment on October 1, 1977, or the date the benefit was originally received if retirement commenced after that date. R.S. 11:241 provides that cost of living benefits shall be in the form (unless the board otherwise specifies) of  $\$X \times (A+B)$  where X is at most \$1 and "A" represents the number of years of credited service accrued at retirement or at death of the member or retiree and "B" is equal to the number of years since retirement or since death of the member or retiree to June 30<sup>th</sup> of the initial year of such increase. The provisions of this subpart do not repeal provisions relative to cost of living adjustments contained within the individual laws governing systems; however, they are to be controlling in cases of conflict. All of the above provisions require that the system earn sufficient excess interest earnings to fund the increases. In addition, the ratio of the plan's assets to benefit obligations must meet the criteria established in R.S. 11:242. This section sets forth a minimum "target ratio" of the actuarial value of assets to the Pension Benefit Obligation. We have determined that for fiscal 2008 the plan has met the necessary target ratio. For fiscal 2008, the fund earned \$15,808,377 in excess investment earnings. These earnings are insufficient to provide the full amount of the cost of living increase detailed under the statutes.

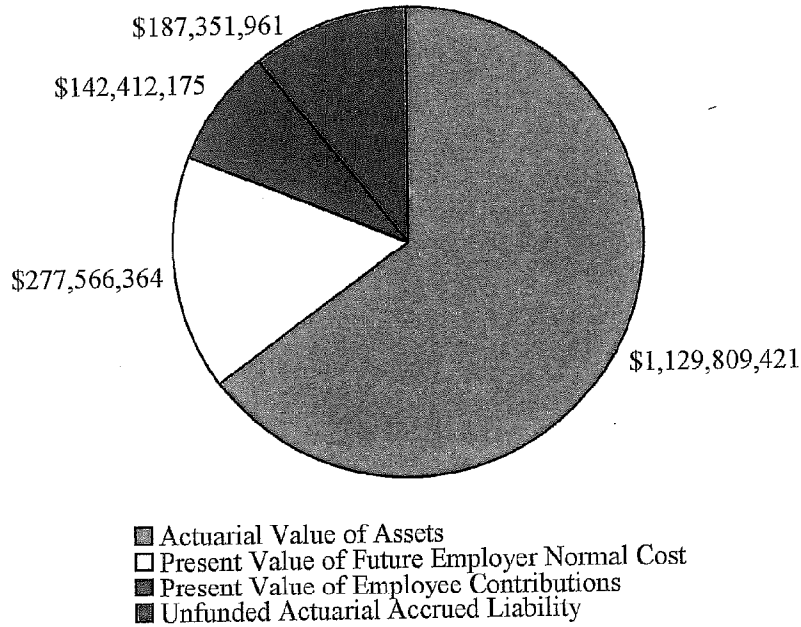
Below is a summary of available cost of living increases and their respective costs:

<u>COLA Description</u>	<u>Annual Increase in Benefits</u>	<u>Present Value Of Increase</u>	<u>Contribution Cost as a % of Payroll</u>
3% to all allowable pensioners	\$ 1,411,699	\$ 14,261,881	0.89%
2% to pensioners over age 65	\$ 251,518	\$ 2,141,014	0.13%
		\$ 16,402,895	

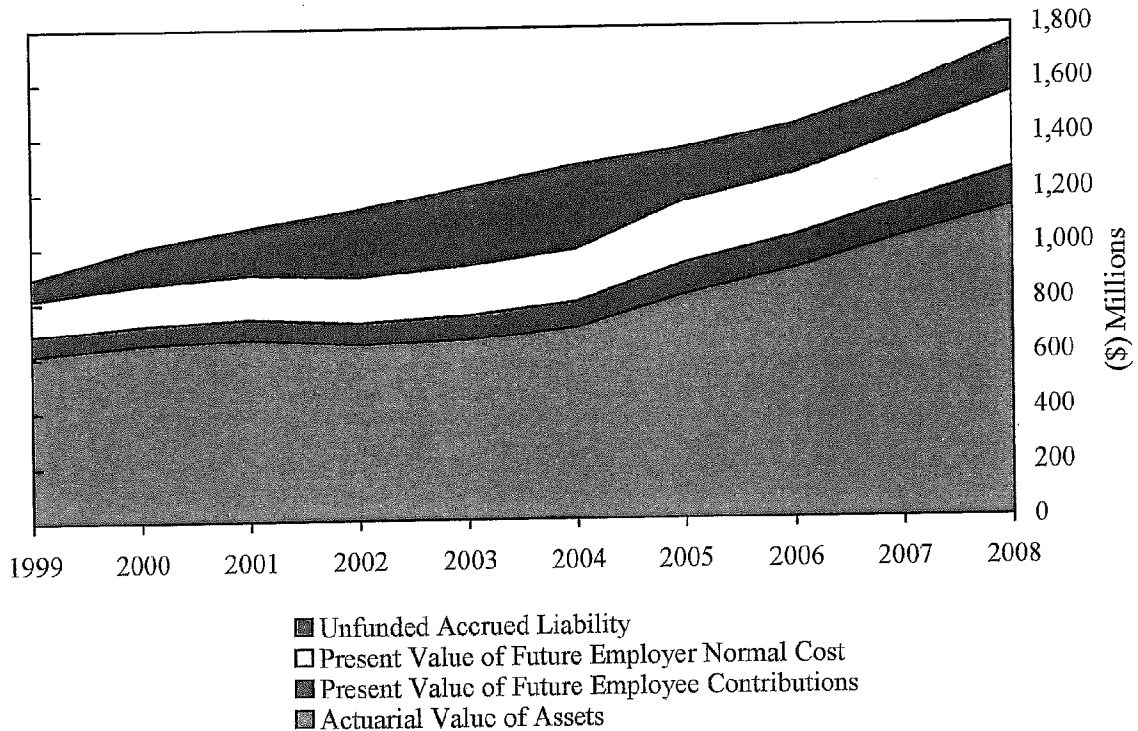
Since there is insufficient excess interest to fund both of the above cost of living adjustments, the board may grant either one of the permissible cost of living adjustments or a portion of each such that the total present value of additional benefits is no more than \$15,808,377.

There is insufficient information available on the system's database to provide meaningful estimates of the costs associated with awarding the cost of living increase detailed in R.S. 11:241.

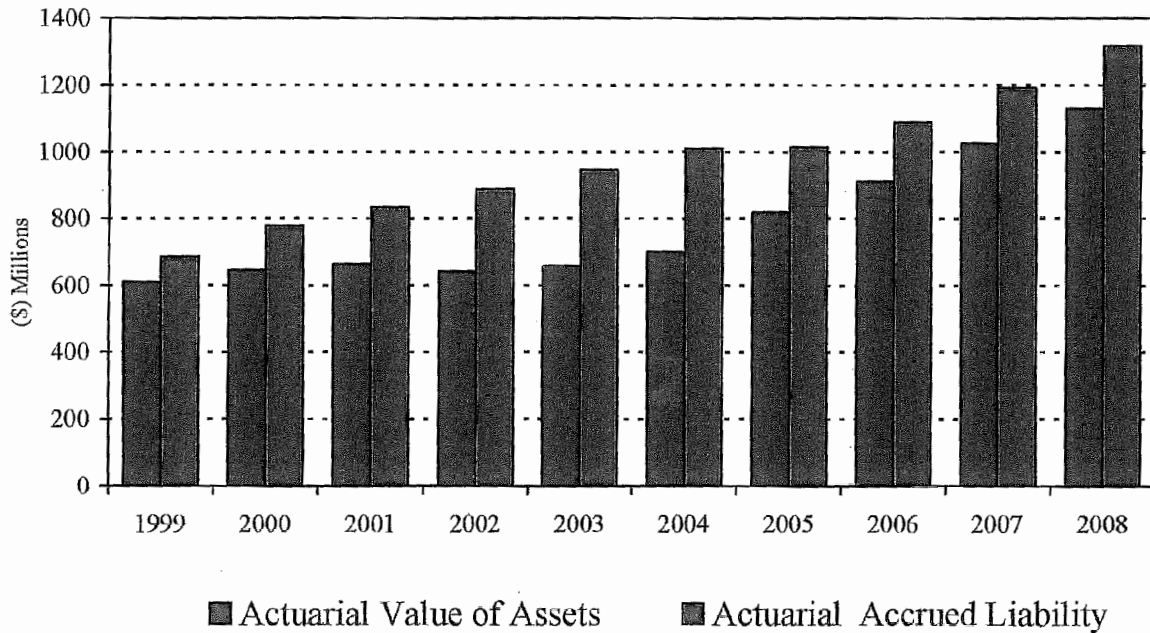
## Components of Present Value of Future Benefits June 30, 2008



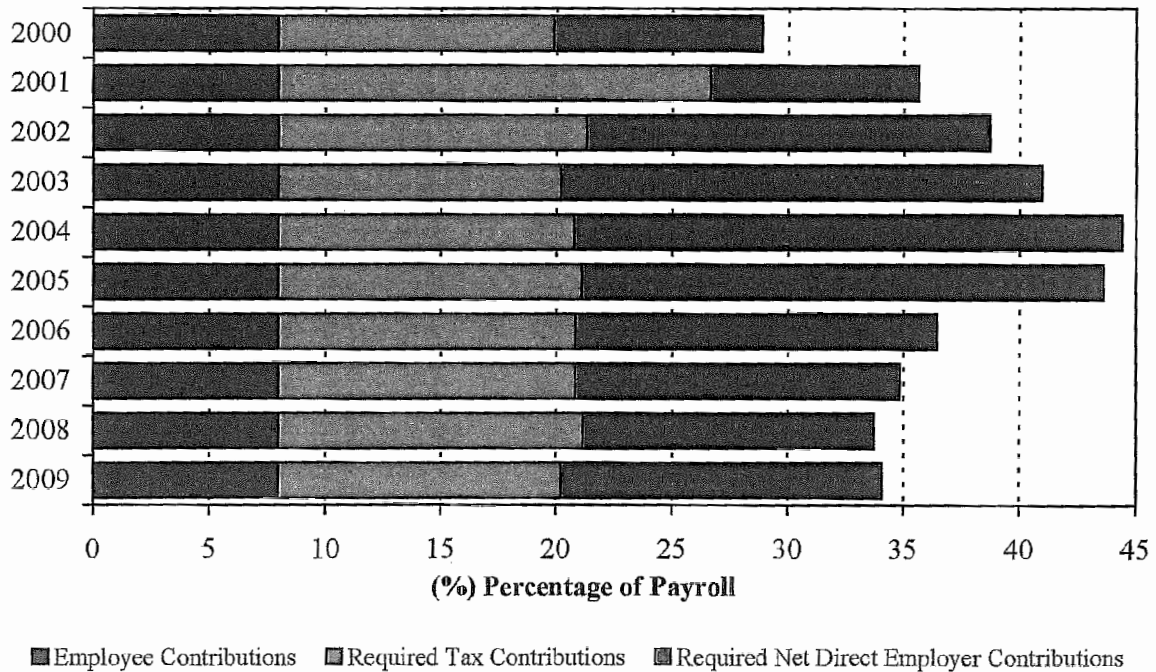
## Components of Present Value of Future Benefits Historical



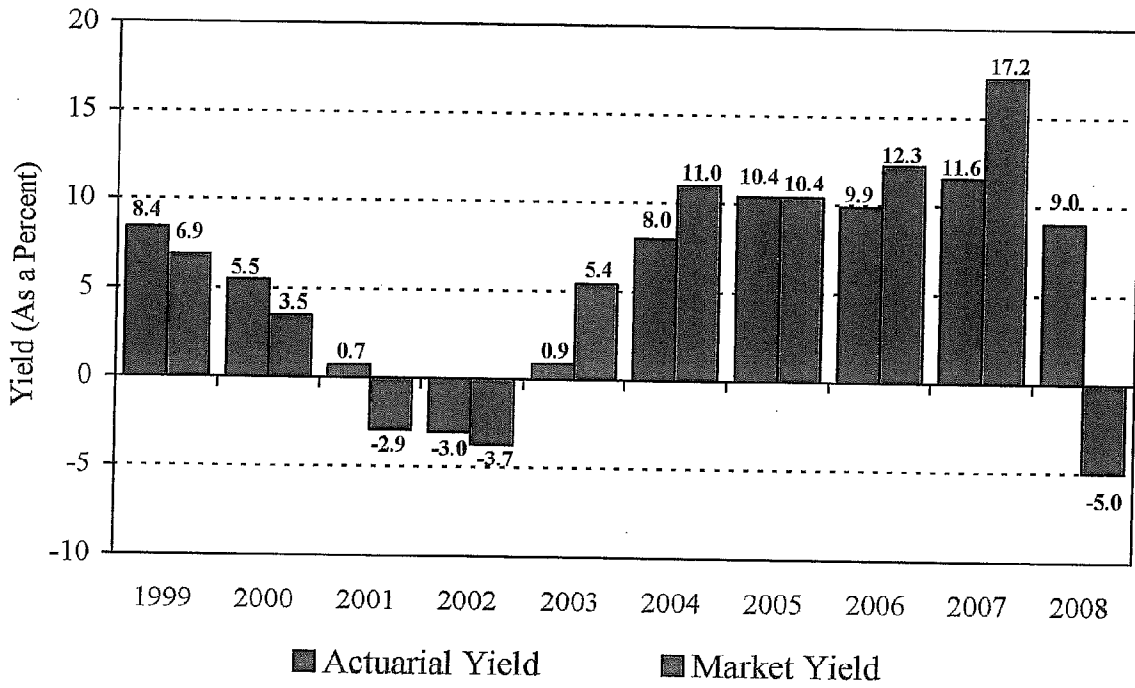
## Actuarial Value of Assets vs. Actuarial Accrued Liability



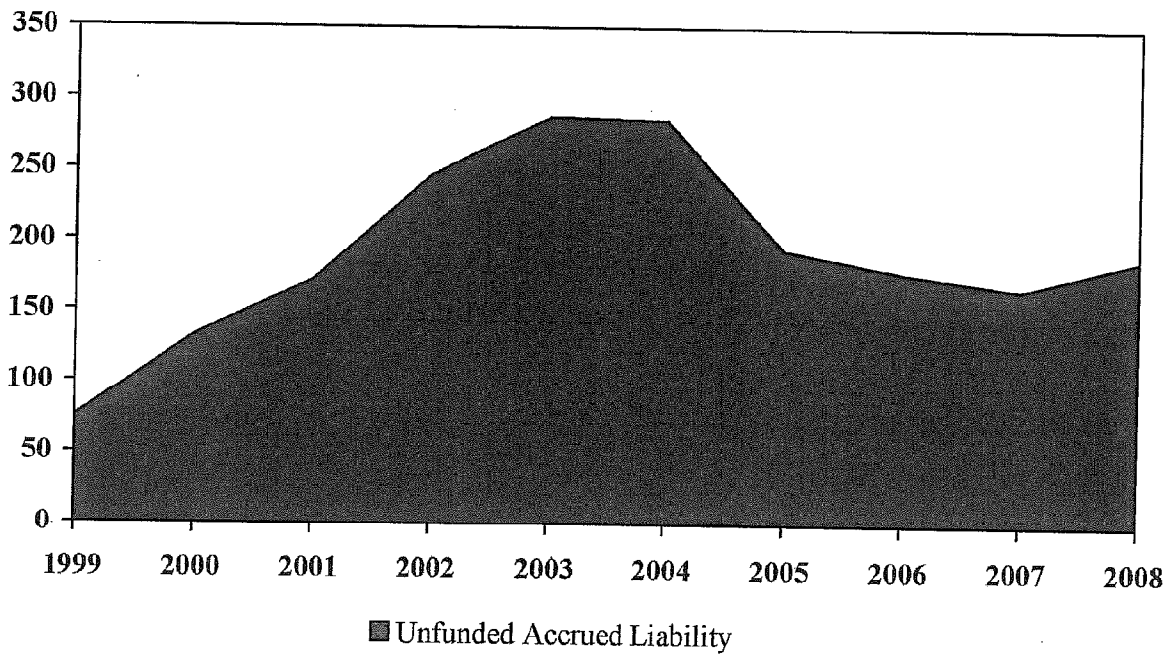
## Components of Actuarial Funding



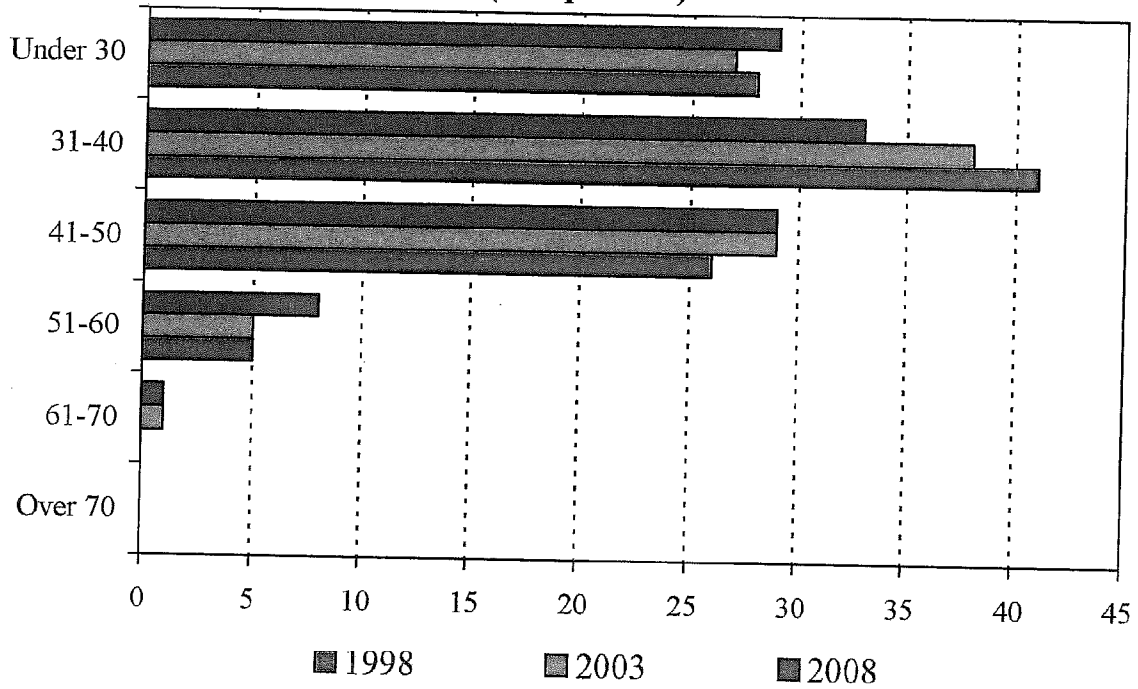
## Historical Asset Yields



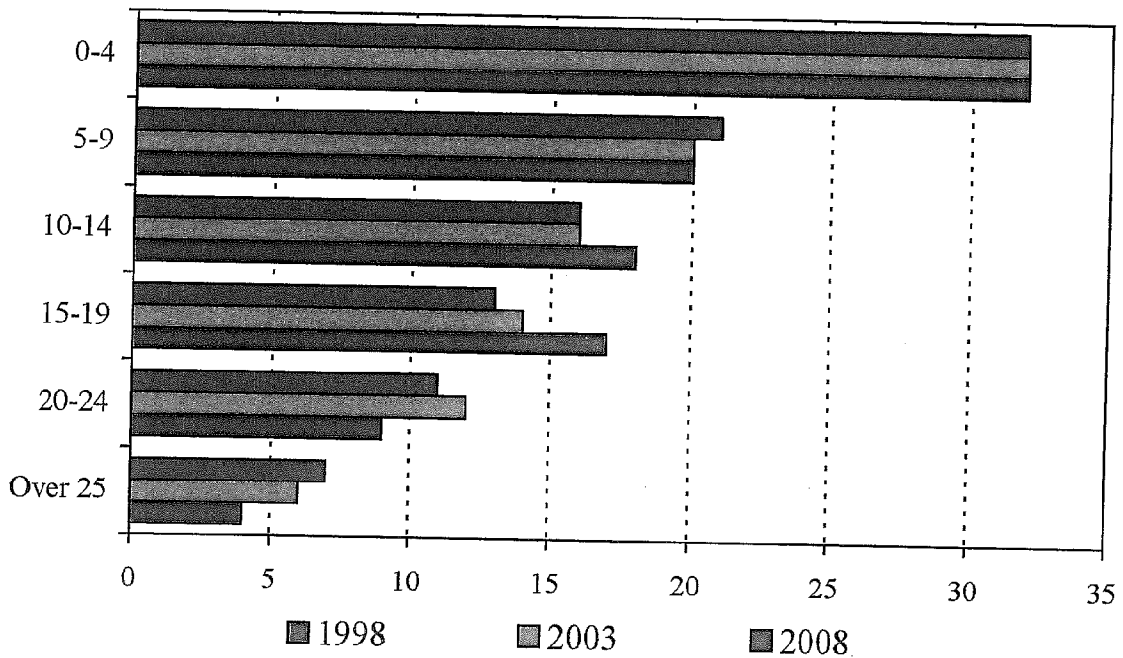
## Unfunded Accrued Liability



### Active – Census By Age (as a percent)

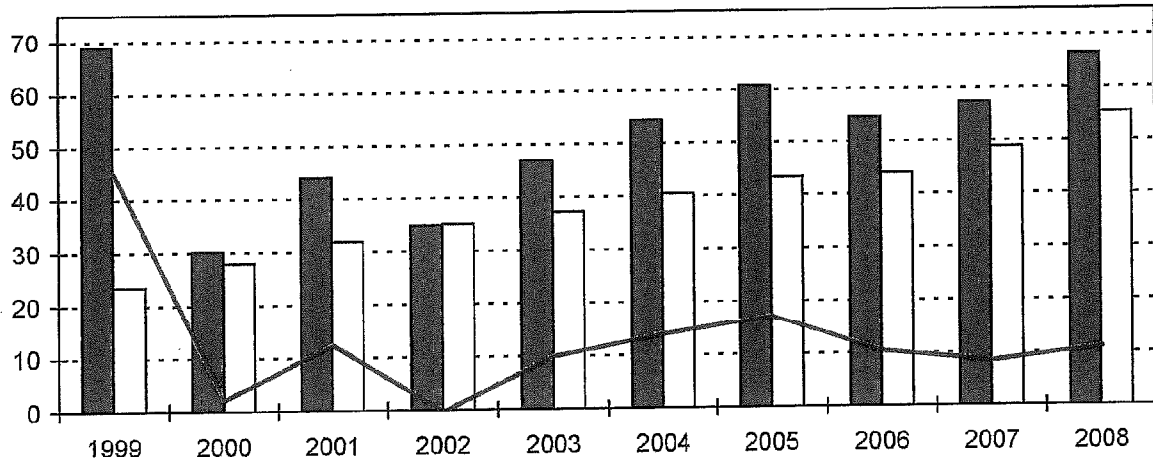


### Active – Census By Service (as a percent)



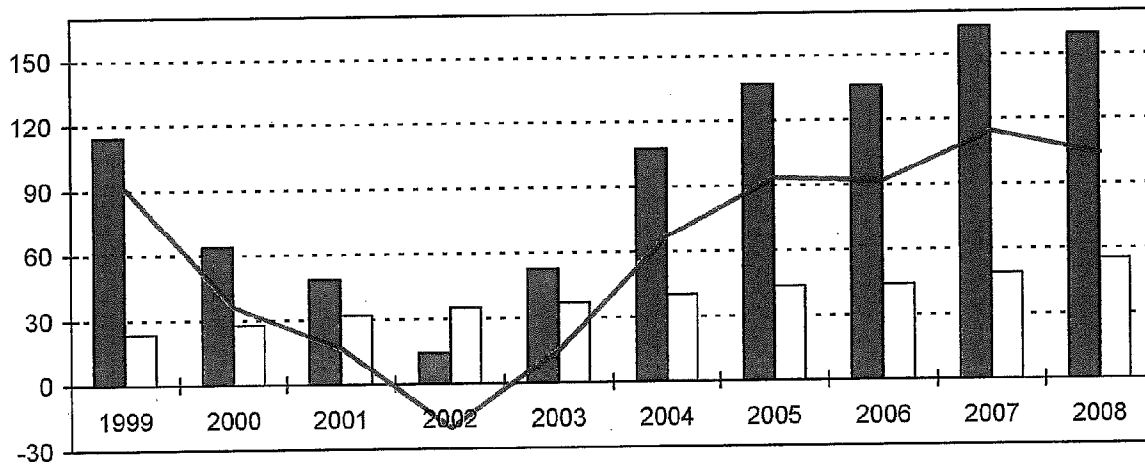


## Net Non-Investment Income



		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Non-Investment Income (\$Mil)	■	68.9	30.2	44.3	34.9	47.1	54.4	60.8	54.7	57.4	66.3
Benefits and Expenses (\$Mil)	□	23.6	28.0	31.9	35.1	37.1	40.4	43.6	44.2	48.9	55.3
Net Non-Investment Income (\$Mil)	—	45.3	2.2	12.4	-0.2	10.0	14.4	17.2	10.5	8.5	11.0

## Total Income vs. Expenses (Based on Actuarial Value of Assets)



		1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Income (\$Mil)	■	114.5	63.8	48.7	14.7	52.6	107.6	137.2	136.3	163.3	159.4
Benefits and Expenses (\$Mil)	□	23.6	28.0	31.9	35.1	37.1	40.4	43.6	44.2	48.9	55.3
Net Change in AVA (\$Mil)	—	90.9	35.8	16.8	-20.4	15.5	67.2	93.6	92.1	114.4	104.1

**EXHIBITS**

**EXHIBIT I**  
**ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS**

1. Normal Cost of Retirement Benefits.....	\$ 34,779,518
2. Normal Cost of Death Benefits.....	\$ 1,592,575
3. Normal Cost of Disability Benefits.....	\$ 1,244,678
4. Normal Cost of Deferred Retirement Benefits.....	\$ 1,213,573
5. Normal Cost of Contribution Refunds.....	\$ 1,152,305
6. TOTAL Normal Cost as of July 1, 2008 (1+2+3+4+5).....	\$ 39,982,649
7. Amortization of Unfunded Accrued Liability of \$187,351,961.....	\$ 16,443,367
8. TOTAL Normal Cost & Amortization Payments (6+7).....	\$ 56,426,016
9. Normal Cost and Amortization Payments Interest Adjusted for Midyear Payment.....	\$ 58,503,740
10. Estimated Administrative Cost for Fiscal 2009.....	\$ 920,284
11. TOTAL Administrative and Interest Adjusted Actuarial Costs (9+10).....	\$ 59,424,024
12. Projected Employee Contributions for Fiscal 2009.....	\$ 13,946,489
13. GROSS Employer Actuarially Required Contribution to be funded by direct employer contributions and Insurance Premium Taxes for Fiscal 2009 (11 - 12).....	\$ 45,477,535
14. Expected Insurance Premium Taxes due in Fiscal 2009.....	\$ 21,265,547
15. Net Direct Actuarially Required Employer Contributions for Fiscal 2009 (13-14)	\$ 24,211,988
16. Projected Payroll For Contributing Members July 1, 2008 through June 30, 2009.....	\$ 174,331,116
17. Employer's Net Direct Actuarially Required Contribution as a % of Projected Payroll for Fiscal 2009 (15 ÷ 16).....	13.89%
18. Actual Net Direct Employer Contribution Rate for Fiscal 2009.....	12.50%
19. Contribution Gain (Loss) as a Percentage of Payroll (18 - 17).....	(1.39%)
20. Adjustment to Following Year Payment for Contribution Gain (Loss).....	(0.15%)
21. Recommended Net Direct Employer Contribution Rate for Fiscal 2010 (17 - 20) (Rounded to nearest 0.25%).....	14.00%

**EXHIBIT II**  
**PRESENT VALUE OF FUTURE BENEFITS**

Present Value of Future Benefits for Active Members:

Retirement Benefits.....	\$1,103,522,095
Survivor Benefits .....	27,431,622
Disability Benefits.....	18,187,696
Vested Deferred Termination Benefits .....	22,434,147
Contribution Refunds.....	7,874,496
<b>TOTAL Present Value of Future Benefits for Active Members.....</b>	<b>\$ 1,179,450,056</b>

Present Value of Future Benefits for Terminated Members:

Terminated Vested Members Due Benefits at Retirement.....	\$ 7,911,973
Terminated Members with Reciprocal Due Benefits at Retirement.....	0
Terminated Members Due a Refund.....	1,144,081
<b>TOTAL Present Value of Future Benefits for Terminated Members .....</b>	<b>\$ 9,056,054</b>

Present Value of Future Benefits for Retirees:

Regular Retirees.....	\$ 434,340,947
Disability Retirees .....	22,312,618
Survivors & Widows .....	36,191,789
Retiree DROP Account Balance.....	53,738,160
IBO Retirees' Account Balance.....	2,050,297
<b>TOTAL Present Value of Future Benefits for Retirees &amp; Survivors .....</b>	<b>\$ 548,633,811</b>
<b>TOTAL Present Value of Future Benefits.....</b>	<b>\$ 1,737,139,921</b>

**EXHIBIT III – Schedule A  
MARKET VALUE OF ASSETS**

Current Assets:

Cash & Cash Equivalents in Banks .....	\$ 5,497,231
Contributions Receivable from Members .....	1,124,994
Contributions Receivable from Employers .....	1,970,784
Accrued Interest on Investments .....	614,175
Prepaid Expenses .....	7,548
<b>TOTAL CURRENT ASSETS .....</b>	<b>\$ 9,214,732</b>

Property, Plant and Equipment (Net of accumulated depreciation) ..... \$ 799,646

Investments:

Common Stock .....	\$ 436,096,830
Alternative Investments .....	531,343,607
Corporate Bonds .....	41,589,211
U. S. Government Securities .....	12,361,512
Cash Equivalents .....	56,860,835
<b>TOTAL INVESTMENTS .....</b>	<b>\$ 1,078,251,995</b>
<b>MERGER NOTES .....</b>	<b>\$ 5,001,952</b>
<b>TOTAL ASSETS .....</b>	<b>\$ 1,093,268,325</b>

Current Liabilities:

Accounts Payable .....	808,651
<b>TOTAL CURRENT LIABILITIES .....</b>	<b>\$ 808,651</b>
<b>NET MARKET VALUE OF ASSETS .....</b>	<b>\$ 1,092,459,674</b>

**EXHIBIT III – SCHEDULE B  
ACTUARIAL VALUE OF ASSETS**

Excess (Shortfall) of invested income  
for current and previous 4 years:

Fiscal year 2008 .....	\$ (142,555,260)
Fiscal year 2007 .....	93,344,557
Fiscal year 2006 .....	40,744,514
Fiscal year 2005 .....	21,949,605
Fiscal year 2004 .....	<u>23,344,328</u>
 Total for four years.....	 \$ 36,827,744

Deferral of excess (shortfall) of invested income:

Fiscal year 2008 (80%).....	\$ (114,044,208)
Fiscal year 2007 (60%).....	56,006,734
Fiscal year 2006 (40%).....	16,297,806
Fiscal year 2005 (20%).....	4,389,921
Fiscal year 2004 ( 0%).....	<u>0</u>
 Total deferred for year .....	 \$ (37,349,747)

Market value of plan net assets, end of year..... \$ 1,092,459,674

Preliminary actuarial value of plan assets, end of year ..... \$ 1,129,809,421

Actuarial value of assets corridor

90% of market value, end of year.....	\$ 983,213,707
110% of market value, end of year.....	\$ 1,201,705,641

Final actuarial value of plan net assets, end of year ..... \$ 1,129,809,421

**EXHIBIT IV  
PRESENT VALUE OF FUTURE CONTRIBUTIONS**

Employee Contributions to the Annuity Savings Fund .....	\$ 142,412,175
Employer Normal Contributions to the Pension Accumulation Fund .....	277,566,364
Employer Payments on the Unfunded Actuarial Accrued Liability .....	187,351,961
<b>TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS .....</b>	<b>\$ 607,330,500</b>

**EXHIBIT V - SCHEDULE A  
ACTUARIAL ACCRUED LIABILITIES**

<b>LIABILITY FOR ACTIVE MEMBERS</b>	
Accrued Liability for Retirement Benefits .....	\$ 738,215,508
Accrued Liability for Survivor Benefits .....	10,698,602
Accrued Liability for Disability Benefits .....	5,109,231
Accrued Liability for Vested Termination Benefits .....	9,683,625
Accrued Liability for Refunds of Contributions .....	(4,235,449)
<b>TOTAL Actuarial Accrued Liability for Active Members .....</b>	<b>\$ 759,471,517</b>
<b>LIABILITY FOR TERMINATED MEMBERS .....</b>	<b>\$ 9,056,054</b>
<b>LIABILITY FOR RETIREES AND SURVIVORS .....</b>	<b>\$ 548,633,811</b>
<b>TOTAL ACTUARIAL ACCRUED LIABILITY .....</b>	<b>\$1,317,161,382</b>
<b>ACTUARIAL VALUE OF ASSETS .....</b>	<b>\$1,129,809,421</b>
<b>UNFUNDED ACTUARIAL ACCRUED LIABILITY .....</b>	<b>\$ 187,351,961</b>

**EXHIBIT V - SCHEDULE B  
CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY**

Prior Year Unfunded Accrued Liability .....	\$ 166,667,308
Interest on Unfunded Accrued Liability .....	\$ 12,500,048
Normal Cost for Prior Year .....	35,755,562
Interest on the Normal Cost .....	2,681,667
Normal Cost for Merged Systems with Accrued Interest .....	523,670
Administrative Expenses .....	1,055,672
Interest on Expenses .....	38,872
<b>TOTAL Increases to Unfunded Accrued Liability .....</b>	<b>\$ 52,555,491</b>
Required Contributions for Prior Year with interest .....	\$ 55,140,448
Contribution Excess (Shortfall) with accrued interest .....	4,399,499
Cost of Living Adjustment Gains (Losses) .....	(15,006,752)
Merger Gains (Losses) .....	(1,556,324)
Investment Gains (Losses) .....	15,808,377
Liability Experience Gains (Losses) .....	(27,052,835)
Liability Assumption Gains (Losses) .....	138,425
<b>TOTAL Decreases to Unfunded Accrued Liability .....</b>	<b>\$ 31,870,838</b>
<b>CURRENT YEAR UNFUNDED ACCRUED LIABILITY .....</b>	<b>\$ 187,351,961</b>

**EXHIBIT V - SCHEDULE C**  
**AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY**  
**JUNE 30, 2008**

FISCAL YEAR	DESCRIPTION	AMORT. PERIOD	INITIAL BALANCE	YEARS REMAINING	REMAINING BALANCE	AMORT. PAYMENTS
1993	Merger Loss (Gain)	30	13,485,002	15	9,941,449	1,047,664
1995	Merger Loss (Gain)	30	41,779,611	17	33,007,693	3,254,713
1996	Merger Loss (Gain)	30	1,772,399	18	1,442,507	138,251
1997	Merger Loss (Gain)	30	890,324	19	744,429	69,533
1998	Merger Loss (Gain)	30	1,602,435	20	1,373,167	125,299
1999	Merger Loss (Gain)	30	14,104,876	21	12,360,769	1,104,183
2001	Merger Loss (Gain)	30	3,117,590	23	2,841,480	244,593
* 2002	Cumulative Non-Merger Bases	27	175,578,584	21	159,289,082	14,229,238
2003	Contribution Loss (Gain)	15	2,678,010	10	2,075,829	281,320
2003	Assumption Loss (Gain)	15	(3,248,077)	10	(2,517,710)	(341,205)
2003	Experience Loss (Gain)	15	44,477,780	10	34,476,448	4,672,310
2004	Contribution Loss (Gain)	15	2,129,874	11	1,762,354	224,102
2004	Experience Loss (Gain)	15	1,570,785	11	1,299,739	165,275
2005	Experience Loss (Gain)	15	(24,922,321)	12	(21,839,637)	(2,626,401)
2005	Assumption Loss (Gain)	15	(57,207,831)	12	(50,131,697)	(6,028,760)
2005	Contribution Loss (Gain)	15	(2,457,193)	12	(2,153,259)	(258,948)
2006	Experience Loss (Gain)	15	(30,043,731)	13	(27,656,876)	(3,166,112)
2006	Benefits/COLA Loss (Gain)	15	12,495,729	13	11,502,993	1,316,843
2006	Assumption Loss (Gain)	15	7,880,410	13	7,254,343	830,465
2006	Contribution Loss (Gain)	15	(3,044,474)	13	(2,802,603)	(320,837)
2007	Contribution Loss (Gain)	15	(3,684,696)	14	(3,543,619)	(388,306)
2007	Merger Loss (Gain)	30	1,065,812	29	1,055,504	83,948
2007	Experience Loss (Gain)	15	(19,348,466)	14	(18,607,667)	(2,039,009)
2007	Benefits/COLA Loss (Gain)	15	13,421,495	14	12,907,633	1,414,404
2008	Assumption Loss (Gain)	15	(138,425)	15	(138,425)	(14,588)
2008	Contribution Loss (Gain)	15	(4,399,499)	15	(4,399,499)	(463,634)
2008	Merger Loss (Gain)	30	1,556,324	30	1,556,324	122,582
2008	Experience Loss (Gain)	15	11,244,458	15	11,244,458	1,184,980
2008	Benefits/COLA Loss (Gain)	15	15,006,752	15	15,006,752	1,581,464

TOTAL Unfunded Actuarial Accrued Liability \$ 187,351,961

TOTAL Fiscal 2008 Amortization Payments \$16,443,367

\* Under the provisions of Act 620 of the 2003 Regular Legislative Session, all non-merger bases established on or before June 30, 2002 were combined, offset, and re-amortized through June 30, 2029.



**EXHIBIT VI**  
**ANALYSIS OF INCREASE IN ASSETS**

Actuarial Value of Assets (June 30, 2007) .....	\$ 1,025,656,019
 Income:	
Regular Member Contributions.....	\$ 13,611,403
Regular Employer Contributions.....	23,292,250
Insurance Premium Taxes .....	20,521,771
Irregular Contributions .....	718,974
Contributions from Mergers.....	8,161,037
<b>TOTAL CONTRIBUTIONS.....</b>	<b>\$ 66,305,435</b>
 Interest and Dividends .....	 24,144,397
Rent Income.....	14,195
Net Appreciation of Fair Value of Investments.....	(77,605,383)
Gain on Sale of Assets.....	325
Merger Interest.....	356,709
Securities Lending .....	234,768
Investment Expenses .....	(3,927,637)
<b>SUBTOTAL OF ALL MARKET INVESTMENT INCOME .....</b>	<b>\$ (56,782,626)</b>
 <b>TOTAL Income .....</b>	 <b>\$ 9,522,809</b>
 Expenses:	
Retirement and Survivor Benefits .....	\$ 42,691,085
DROP Disbursements .....	6,459,083
Disability Benefits .....	3,833,211
Refunds of Contributions.....	1,251,164
Administrative Expenses .....	1,055,672
Funds Transferred to Another System.....	0
 <b>TOTAL Expenses .....</b>	 <b>\$ 55,290,215</b>
 Net Market Income for Fiscal 2008 (Income - Expenses).....	 <b>\$ (45,767,406)</b>
 Adjustment for Actuarial Smoothing.....	 <b>\$ 149,920,808</b>
 Actuarial Value of Assets (June 30, 2008) .....	 <b>\$ 1,129,809,421</b>

**EXHIBIT VII  
FUND BALANCE**

Present Assets of the System Creditable to:

Annuity Savings Fund .....	\$ 111,366,347
Annuity Reserve Fund .....	492,845,354
Pension Accumulation Fund .....	417,638,746
Deferred Retirement Option Plan Account .....	68,558,930
Initial Benefit Option Plan Account .....	2,050,297
NET MARKET VALUE OF ASSETS .....	\$ 1,092,459,674
ADJUSTMENT FOR ACTUARIAL SMOOTHING .....	37,349,747
NET ACTUARIAL VALUE OF ASSETS .....	\$ 1,129,809,421

**EXHIBIT VIII  
PENSION BENEFIT OBLIGATION**

Present Value of Credited Projected Payable to Current Employees .....	\$ 720,409,575
Present Value of Benefits Payable to Terminated Employees .....	9,056,054
Present Value of Benefits Payable to Current Retirees and Beneficiaries .....	548,633,811
TOTAL PENSION BENEFIT OBLIGATION .....	\$ 1,278,099,440

**EXHIBIT IX**  
**COST OF LIVING ADJUSTMENTS - TARGET RATIO**

Actuarial Value of Assets Divided by PBO as of Fiscal 1986: .....		99.35%
Amortization of Unfunded Balance over 30 years: .....		0.48%
Adjustments in Funded Ratio Due to Mergers or Changes in Assumption(s):		
Changes for Fiscal 1987 .....	(0.72%)	
Changes for Fiscal 1988 .....	(3.24%)	
Changes for Fiscal 1989 .....	(3.80%)	
Changes for Fiscal 1992 .....	1.34%	
Changes for Fiscal 1993 .....	(1.25%)	
Changes for Fiscal 1994 .....	(0.03%)	
Changes for Fiscal 1995 .....	(1.73%)	
Changes for Fiscal 1996 .....	(16.29%)	
Changes for Fiscal 1997 .....	(3.65%)	
Changes for Fiscal 1998 .....	(0.27%)	
Changes for Fiscal 1999 .....	(0.97%)	
Changes for Fiscal 2000 .....	(2.97%)	
Changes for Fiscal 2001 .....	(0.23%)	
Changes for Fiscal 2003 .....	0.45%	
Changes for Fiscal 2005 .....	4.16%	
Changes for Fiscal 2006 .....	(0.71%)	
Changes for Fiscal 2007 .....	(0.09%)	
Changes for Fiscal 2008 .....	(0.01%)	
TOTAL Adjustments .....		(30.01%)
Amortization of Adjustments in Funded Ratio over 30 years:		
Changes for Fiscal 1987 .....	0.50%	
Changes for Fiscal 1988 .....	2.16%	
Changes for Fiscal 1989 .....	2.41%	
Changes for Fiscal 1992 .....	(0.71%)	
Changes for Fiscal 1993 .....	0.63%	
Changes for Fiscal 1994 .....	0.01%	
Changes for Fiscal 1995 .....	0.75%	
Changes for Fiscal 1996 .....	6.52%	
Changes for Fiscal 1997 .....	1.34%	
Changes for Fiscal 1998 .....	0.09%	
Changes for Fiscal 1999 .....	0.29%	
Changes for Fiscal 2000 .....	0.79%	
Changes for Fiscal 2001 .....	0.05%	
Changes for Fiscal 2003 .....	(0.08%)	
Changes for Fiscal 2005 .....	(0.42%)	
Changes for Fiscal 2006 .....	0.05%	
Changes for Fiscal 2007 .....	0.00%	
Changes for Fiscal 2008 .....	0.00%	
TOTAL Amortization of Adjustments .....		14.38%
Target Ratio for Current Fiscal Year .....		84.20%
Actuarial Value of Assets Divided by PBO as of Fiscal 2008 .....		88.40%

**EXHIBIT X  
CENSUS DATA**

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2007	3,632	352	134	1,555	5,673
Additions to Census					
Initial membership	396	34			430
Death of another member	(6)		(1)	7	
Omitted in error last year					
Change in Status during Year					
Actives terminating service	(83)	83			
Actives who retired	(48)			48	
Actives entering DROP	(41)		41		
Term. members rehired	20	(20)			
Term. members who retire		(3)		3	
Retirees who are rehired	1			(1)	
Refunded who are rehired	20				20
DROP participants retiring			(30)	30	
DROP returned to work	14		(14)		
Omitted in error last year					
Eliminated from Census					
Refund of contributions	(81)	(41)			(122)
Deaths	(3)			(21)	(24)
Included in error last year					
Adjustment for multiple records				9	9
Suspended Benefits				1	1
Number of members as of June 30, 2008	3,821	405	130	1,631	5,987

ACTIVES CENSUS BY AGE:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
16 - 20	52	0	52	23,060	1,199,117
21 - 25	409	14	423	28,931	12,237,697
26 - 30	579	43	622	34,505	21,462,099
31 - 35	573	31	604	40,268	24,321,836
36 - 40	629	32	661	44,817	29,624,166
41 - 45	582	41	623	50,611	31,530,537
46 - 50	455	42	497	57,056	28,357,076
51 - 55	237	14	251	60,870	15,278,322
56 - 60	66	2	68	61,798	4,202,273
61 - 65	14	3	17	58,638	996,840
66 - 70	3	0	3	63,918	191,753
TOTAL	3,599	222	3,821	44,334	169,401,716

THE ACTIVE CENSUS INCLUDES 1,581 ACTIVES WITH VESTED BENEFITS, INCLUDING 48 ACTIVE FORMER DROP PARTICIPANTS. THE 130 CURRENT DROP PARTICIPANTS ARE EXCLUDED.

DROP PARTICIPANTS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	3	0	3	75,871	227,613
46 - 50	37	2	39	44,524	1,736,422
51 - 55	59	0	59	47,419	2,797,720
56 - 60	24	2	26	44,798	1,164,754
61 - 65	2	0	2	26,929	53,857
66 - 70	1	0	1	33,262	33,262
TOTAL	126	4	130	46,259	6,013,628

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
31 - 35	2	0	2	14,868	29,736
36 - 40	11	1	12	17,575	210,903
41 - 45	17	1	18	24,745	445,402
46 - 50	19	0	19	23,781	451,839
51 - 55	3	1	4	22,345	89,379
TOTAL	52	3	55	22,314	1,227,259

TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:

Contributions Ranging		Number	Total Contributions
From	To		
0	- 99	45	2,132
100	- 499	98	26,213
500	- 999	45	31,510
1000	- 1999	40	56,232
2000	- 4999	50	152,623
5000	- 9999	33	241,597
10000	- 19999	32	472,327
20000	- 99999	7	161,447
TOTAL		350	1,144,081

## REGULAR RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	10	0	10	36,072	360,716
46 - 50	50	3	53	39,781	2,108,369
51 - 55	147	7	154	40,089	6,173,702
56 - 60	295	5	300	38,432	11,529,459
61 - 65	253	4	257	35,370	9,090,141
66 - 70	173	2	175	34,261	5,995,589
71 - 75	102	0	102	28,205	2,876,953
76 - 80	84	0	84	24,567	2,063,614
81 - 85	49	0	49	26,610	1,303,906
86 - 90	10	0	10	19,212	192,119
91 - 99	2	0	2	25,847	51,694
TOTAL	1,175	21	1,196	34,905	41,746,262

## DISABILITY RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
26 - 30	1	0	1	14,308	14,308
36 - 40	4	0	4	14,694	58,777
41 - 45	11	3	14	19,019	266,264
46 - 50	24	3	27	20,789	561,290
51 - 55	18	0	18	19,070	343,267
56 - 60	25	2	27	19,488	526,189
61 - 65	14	0	14	17,409	243,723
66 - 70	8	0	8	11,244	89,949
71 - 75	11	0	11	12,787	140,661
76 - 80	3	0	3	18,042	54,125
81 - 85	2	0	2	8,936	17,871
TOTAL	121	8	129	17,957	2,316,424

## SURVIVORS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
0 - 25	9	9	18	6,011	108,204
31 - 35	1	2	3	11,102	33,305
36 - 40	1	6	7	16,582	116,076
41 - 45	0	4	4	15,062	60,247
46 - 50	1	7	8	17,953	143,626
51 - 55	5	15	20	18,616	372,324
56 - 60	1	20	21	18,518	388,881
61 - 65	1	19	20	13,906	278,121
66 - 70	0	31	31	19,877	616,197
71 - 75	0	45	45	14,687	660,905
76 - 80	0	56	56	13,690	766,639
81 - 85	1	36	37	11,295	417,907
86 - 90	0	23	23	12,211	280,857
91 - 99	0	13	13	8,508	110,606
TOTAL	20	286	306	14,228	4,353,895

ACTIVE MEMBERS:

Attained Ages	Completed Years of Service											Total
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	
0 - 20	48	3	1									52
21 - 25	158	122	62	39	30	12						423
26 - 30	87	90	67	65	77	228	8					622
31 - 35	43	36	20	40	32	249	181	3				604
36 - 40	24	25	17	23	21	156	232	161	2			661
41 - 45	13	8	6	9	9	80	122	201	158	17		623
46 - 50	9	6	10	3	5	36	39	99	177	108	5	497
51 - 55		2		3	3	24	24	35	63	68	29	251
56 - 60		1			1	1	10	6	7	17	25	68
61 - 65							4	3	1	2	7	17
66 - 70								1			2	3
71 & Over												0
Totals	382	293	183	182	178	786	620	509	408	212	68	3821

AVERAGE ANNUAL SALARY OF ACTIVE MEMBERS:

Attained Ages	Completed Years of Service											Average Salary
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	
0 - 20	22,498	28,648	33,273									23,060
21 - 25	23,749	29,485	33,137	34,032	35,329	37,214						28,931
26 - 30	24,804	30,678	33,676	35,719	35,437	39,001	43,028					34,505
31 - 35	26,505	31,105	33,613	34,018	38,431	40,838	46,814	52,495				40,268
36 - 40	26,339	32,655	30,199	33,970	35,534	41,964	48,433	51,226	52,217			44,817
41 - 45	28,798	33,303	29,471	39,557	39,435	42,142	49,716	51,505	58,179	60,024		50,611
46 - 50	22,384	27,353	40,678	31,660	33,374	45,499	52,882	52,444	60,152	68,747	71,807	57,056
51 - 55		82,378		40,063	36,330	47,777	46,302	53,399	60,344	68,796	78,542	60,870
56 - 60		48,038			57,034	41,811	46,964	42,824	63,897	66,131	70,292	61,798
61 - 65							43,383	49,940	37,437	43,275	78,500	58,638
66 - 70								51,601			70,076	63,918
71 & Over												0
Average	24,445	30,797	33,406	34,957	36,249	41,033	48,284	51,624	59,387	67,613	74,760	44,334



TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Attained Ages	Years Until Retirement Eligibility										Total	
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29		30&Over
0 - 30												0
31 - 35									2			2
36 - 40								12				12
41 - 45						1	17					18
46 - 50	3	4		1	2	9						19
51 - 55	1		1	2								4
56 & Over												0
Totals	4	4	1	3	2	10	17	12	2	0	0	55

AVERAGE ANNUAL BENEFITS OF TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Attained Ages	Years Until Retirement Eligibility										Average Benefit	
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29		30&Over
0 - 30												0
31 - 35									14,868			14,868
36 - 40								17,575				17,575
41 - 45						37,991	23,965					24,745
46 - 50	27,753	33,933		27,093	31,362	15,892						23,781
51 - 55	24,642		23,337	20,700								22,345
56 & Over												0
Average	26,975	33,933	23,337	22,831	31,362	18,102	23,965	17,575	14,868	0	0	22,314

SERVICE RETIREES:

Attained Ages	Completed Years Since Retirement											
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 50	26	19	7	9	2							63
51 - 55	21	45	20	18	22	25	3					154
56 - 60	18	14	24	29	26	146	29	12	2			300
61 - 65	7	2	7	9	16	103	81	14	17	1		257
66 - 70	2	1	4	1	4	24	67	39	16	16	1	175
71 - 75		1			1	4	12	25	25	21	13	102
76 - 80						2	3	9	16	22	32	84
81 - 85						3		3	9	14	20	49
86 - 90							1	1		3	5	10
91 & Over										2		2
Totals	74	82	62	66	71	307	196	103	85	79	71	1196

AVERAGE ANNUAL BENEFITS PAYABLE TO SERVICE RETIREES:

Attained Ages	Completed Years Since Retirement											Average Benefit
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	
0 - 50	40,622	38,243	40,802	37,682	30,770							39,192
51 - 55	40,836	39,102	38,960	42,930	42,705	39,126	28,984					40,089
56 - 60	46,957	39,652	43,055	41,571	40,501	38,117	32,120	24,343	24,262			38,432
61 - 65	27,084	32,884	32,924	44,558	36,020	39,060	34,725	26,222	23,921	17,263		35,370
66 - 70	62,098	42,750	30,744	36,589	48,883	35,421	40,412	30,105	23,691	20,406	36,176	34,261
71 - 75		23,027			18,136	40,019	37,213	33,513	31,114	19,469	15,741	28,205
76 - 80						7,226	36,829	34,957	37,093	25,337	14,787	24,567
81 - 85						19,003		53,422	35,874	27,798	18,730	26,610
86 - 90							25,238	15,101		32,002	11,155	19,212
91 & Over										25,847		25,847
Average	41,524	38,694	39,542	41,743	40,057	37,942	36,332	30,691	29,746	23,378	16,118	34,905

DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement											Total
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	
0 - 30						1						1
31 - 35												0
36 - 40	1	1				2						4
41 - 45		1	3	2		5	3					14
46 - 50	2	1	6	4	1	7	3	3				27
51 - 55		1			1	5	5	1	4	1		18
56 - 60					2	3	4	12	3	3		27
61 - 65					1	2	1	2	5	2	1	14
66 - 70						3		1		2	2	8
71 - 75						2		1	1	5	2	11
76 - 80							1			1	1	3
81 - 85						1					1	2
86 & Over												0
Totals	3	4	9	6	5	31	17	20	13	14	7	129

AVERAGE ANNUAL BENEFITS PAYABLE TO DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement											Average Benefit
	0	1	2	3	4	5- 9	10-14	15-19	20-24	25-29	30&Over	
0 - 30						14,308						14,308
31 - 35												0
36 - 40	17,606	19,657				10,757						14,694
41 - 45		9,683	24,300	27,685		16,716	14,911					19,019
46 - 50	20,985	27,556	23,622	25,534	23,630	20,913	11,359	14,598				20,789
51 - 55		21,733			26,919	16,356	18,460	21,369	23,181	6,445		19,070
56 - 60					25,518	24,408	19,249	18,219	21,479	13,957		19,488
61 - 65					9,246	16,713	23,252	21,141	20,601	14,075	4,363	17,409
66 - 70						11,363		16,893		13,748	5,737	11,244
71 - 75						8,788		12,848	20,700	15,662	5,613	12,787
76 - 80							32,046			18,662	3,417	18,042
81 - 85						4,927					12,944	8,936
86 & Over												0
Average	19,859	19,657	23,848	26,251	22,166	16,478	17,847	17,791	21,605	14,352	6,204	17,957

SURVIVING BENEFICIARIES OF FORMER MEMBERS:

Attained Ages	Completed Years Since Retirement											Total
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30&Over	
0 - 20	2	4		1	2	1	6					16
21 - 25	1						1					2
26 - 30												0
31 - 35		1					1	1				3
36 - 40	1	1		1	1	1	2					7
41 - 45	1					1	1	1				4
46 - 50	1	1	1			1	4					8
51 - 55			1	2	3	3	1	5	4	1		20
56 - 60		1	1		2	4	7	5		1		21
61 - 65						3	7	1	4	2	3	20
66 - 70	1					7	2	7	4	5	5	31
71 - 75						5	5	8	4	8	15	45
76 - 80						1		4	9	12	30	56
81 - 85								1	5	7	24	37
86 - 90						2			4	4	13	23
91 & Over						1			3		9	13
Totals	7	8	3	4	8	30	37	33	37	40	99	306

AVERAGE ANNUAL BENEFITS PAYABLE TO SURVIVORS OF FORMER MEMBERS:

Attained Ages	Completed Years Since Retirement											Average Benefit
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30&Over	
0 - 20	4,173	8,348		17,683	3,821	3,664	3,562					5,756
21 - 25	13,034						3,073					8,054
26 - 30												0
31 - 35		22,875					8,726	1,703				11,102
36 - 40	19,422	26,146		11,863	22,923	13,178	11,272					16,582
41 - 45	26,948					21,459	2,623	9,217				15,062
46 - 50	21,589	26,317	10,788			14,658	17,569					17,953
51 - 55			27,488	23,597	22,381	10,564	41,023	18,292	14,125	9,825		18,616
56 - 60			15,047		15,532	19,970	19,825	24,248		2,873		18,518
61 - 65						15,544	13,926	28,446	18,010	8,572	5,458	13,906
66 - 70	25,926					22,189	54,370	25,317	12,323	11,400	8,539	19,877
71 - 75						3,572	31,488	24,069	14,658	14,739	7,767	14,687
76 - 80						2,771		16,239	19,399	16,819	10,750	13,690
81 - 85								4,758	15,183	15,828	9,435	11,295
86 - 90						2,686			23,195	16,154	9,084	12,211
91 & Over						2,771			12,793		7,717	8,508
Average	16,467	13,591	17,774	19,185	16,097	13,175	18,164	20,956	16,706	14,550	9,213	14,228

**EXHIBIT XI  
YEAR-TO-YEAR COMPARISON**

	Fiscal 2008	Fiscal 2007	Fiscal 2006	Fiscal 2005
Number of Active Contributing Members	3,821	3,632	3,534	3,532
Number of Retirees & Survivors	1,631	1,555	1,477	1,434
DROP Participants	130	134	111	103
Number Terminated Due Deferred Benefits	55	54	52	45
Number of Terminated Due Refund	350	298	249	189
Active Lives Payroll (excludes DROP participants)	\$ 169,401,716	\$ 150,960,665	\$ 140,175,740	\$ 134,313,739
Retiree Benefits in Payment	\$ 48,416,581	\$ 43,972,738	\$ 39,649,619	\$ 36,510,489
Market Value of Assets	\$1,092,459,674	\$1,138,227,081	\$ 963,805,222	\$ 848,499,924
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability	85.78%	86.02%	83.66%	80.88%
Actuarial Accrued Liability	\$1,317,161,382	\$1,192,323,327	\$1,089,280,137	\$1,012,901,863
Actuarial Value of Assets	\$1,129,809,421	\$1,025,656,019	\$ 911,329,622	\$ 819,240,156
UAL (Funding Excess)	\$ 187,351,961	\$ 166,667,308	\$ 177,950,515	\$ 193,661,707
P.V. of Future Employer Normal Contributions	\$ 277,566,364	\$ 247,631,617	\$ 230,234,335	\$ 226,307,495
P.V. of Future Employee Contributions	\$ 142,412,175	\$ 126,968,955	\$ 118,092,552	\$ 114,703,708
Present Value of Future Benefits	\$1,737,139,921	\$1,566,923,899	\$1,437,607,024	\$1,353,913,066

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	Fiscal 2009	Fiscal 2008	Fiscal 2007	Fiscal 2006
Employee Contribution Rate	8.00%	8.00%	8.00%	8.00%
Required Tax Contributions as a Percentage of Projected Payroll	12.20%	13.16%	12.83%	12.82%
Actuarially Required Employer Contribution As a Percentage of Projected Payroll	13.89%	12.56%	14.01%	15.66%
Actual Employer Contribution Rate	12.50%	13.75%	15.50%	18.00%

Fiscal 2004	Fiscal 2003	Fiscal 2002	Fiscal 2001	Fiscal 2000	Fiscal 1999
3,431	3,360	3,322	3,257	3,098	2,966
1,379	1,315	1,278	1,230	1,155	1,093
114	120	145	156	155	144
42	36	30	25	18	20
181	143	133	118	95	73
\$ 128,144,746	\$ 121,012,780	\$ 114,422,827	\$ 107,667,223	\$ 100,504,497	\$ 92,758,784
\$ 34,076,169	\$ 31,542,638	\$ 29,610,698	\$ 27,934,986	\$ 25,932,694	\$ 23,085,435
\$ 752,274,788	\$ 664,570,797	\$ 620,860,572	\$ 641,929,807	\$ 645,641,501	\$ 621,030,022
71.84%	69.69%	72.33%	79.45%	82.95%	89.04%
\$1,010,016,864	\$ 944,688,430	\$ 888,963,640	\$ 834,986,462	\$ 779,541,318	\$ 686,029,152
\$ 725,615,787	\$ 658,376,086	\$ 642,947,201	\$ 663,377,250	\$ 646,609,069	\$ 610,870,354
\$ 284,401,078	\$ 286,312,344	\$ 246,016,439	\$ 171,609,212	\$ 132,932,249	\$ 75,158,798
\$ 192,151,099	\$ 182,925,316	\$ 166,298,912	\$ 159,311,329	\$ 149,049,128	\$ 133,929,737
\$ 94,736,659	\$ 90,145,420	\$ 82,398,183	\$ 79,024,405	\$ 73,957,562	\$ 73,159,070
\$1,296,904,623	\$1,217,759,166	\$1,137,660,735	\$1,073,322,196	\$1,002,548,008	\$ 893,117,959

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Fiscal 2005	Fiscal 2004	Fiscal 2003	Fiscal 2002	Fiscal 2001	Fiscal 2000
8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
13.11%	12.77%	12.17%	13.31%	18.64%	11.86%
22.51%	23.64%	20.78%	17.44%	9.00%	9.00%
24.00%	21.00%	18.25%	9.00%	9.00%	9.00%

## SUMMARY OF PRINCIPAL PLAN PROVISIONS

The Firefighters' Retirement System was established as of January 1, 1980, for the purpose of providing retirement allowances and other benefits as described under R.S. 11:2256 - 11:2259. The following summary of plan provisions is for general informational purposes only and does not constitute a guarantee of benefits.

**MEMBERSHIP** - All full time firefighters or any person in a position as defined in the municipal fire and police civil service system who is employed by a fire department of any municipality, parish, or fire protection district of the State of Louisiana, except Orleans, and East Baton Rouge Parishes, who earns at least three hundred seventy-five dollars per month excluding state supplemental pay are required to be members of this retirement system. Employees of the system are eligible, at their option to become members of the system. Persons must be under the age of fifty to be eligible for system membership unless they become members through merger.

**CONTRIBUTION RATES** - The fund is financed by employee and employer contributions together with funds from dedicated insurance premium taxes as allocated by the Public Retirement Systems' Actuarial Committee in accordance with RS 22:1419A(3). Employee contributions are eight percent (8%) of earnable compensation. Net direct employer contributions are nine percent (9%) of earnable compensation unless the funds allocated from dedicated taxes are insufficient to provide the actuarially required contributions or the actuarially required contributions are less than 9%.

**CONTRIBUTION REFUNDS** - Upon withdrawal from service, members not entitled to a retirement allowance may receive a refund of accumulated contributions. Refunds are payable ninety days after the effective date of withdrawal from service.

**RETIREMENT BENEFITS** - Members with twelve years of creditable service may retire at age fifty-five; members with twenty years of service may retire at age fifty; members with twenty-five years of service may retire regardless of age, provided that they have been a member of this system for at least one year. The retirement allowance is equal to three and one-third percent of the member's average final compensation multiplied by his years of creditable service, not to exceed one hundred percent of his average final compensation.

**OPTIONAL ALLOWANCES** - Members may receive their benefits as a life annuity, or in lieu of such receive a reduced benefit according to the option selected which is the actuarial equivalent of the maximum benefit.

**Option 1** - If the member dies before he has received in annuity payments the present value of his member's annuity as it was at the time of retirement the balance is paid to his beneficiary.

**Option 2** - Upon retirement, the member receives a reduced benefit. Upon the member's death, the designated beneficiary will continue to receive the same reduced benefit.

**Option 3** - Upon retirement, the member receives a reduced benefit. Upon the member's death, the designated beneficiary will receive one-half of the member's reduced benefit.

**Option 4** - Upon retirement, the member elects to receive a board approved benefit which is actuarially equivalent to the maximum benefit.

**Initial Benefit Option** – This option is available only to regular retirees who have not participated in the Deferred Retirement Option Plan. Under this option members may receive an initial benefit plus a reduced monthly retirement allowance which, when combined, equal the actuarially equivalent amount of the maximum retirement allowance. The initial benefit may not exceed an amount equal to thirty-six payments of the member's maximum retirement allowance. The initial benefit can be paid either as a lump-sum payment or placed in an account called an "initial benefit account" with interest credited thereto and monthly payments made from the account.

**DISABILITY BENEFITS** - Any member who has been officially certified as totally disabled solely as the result of injuries sustained in the performance of his official duties, or for any cause, provided the member has a least five years of creditable service and provided that the disability was incurred while the member was an active contributing member, is entitled to disability benefits. Any member under the age of fifty who becomes totally disabled will receive a disability benefit equal to 60% of final compensation for an injury received in the line of duty; or 75% of his accrued retirement benefit with a minimum of 25% of average salary for any injury received, even though not in the line of duty. Any member age fifty or older who becomes totally disabled from an injury sustained in the line of duty is entitled to a disability benefit equal to the greater of 60% of final compensation or his accrued retirement benefit. Any member age fifty or older who becomes totally disabled as a result of any injury, even though not in the line of duty, is entitled to a disability benefit equal to his accrued retirement benefit with a minimum of 25% of average salary. The surviving spouse of a member who was on disability retirement at the time of death receives a benefit of \$200 per month. When the member takes disability retirement, he may in addition take an actuarially reduced benefit in which case the member's surviving spouse receives 50% of the disability benefit being paid immediately prior to the death of the disability retiree. The retirement system may reduce benefits paid to a disability retiree who is also receiving workers compensation payments.

**SURVIVOR BENEFITS** - Benefits are payable to survivors of a deceased member who dies and is not eligible for retirement as follows. If any member is killed in the line of duty and leaves a surviving eligible spouse, the spouse is entitled to an annual benefit equal to two-thirds of the deceased member's final compensation. If any member dies from a cause not in the line of duty, the surviving spouse is entitled to an annual benefit equal to 3% of the deceased member's average final compensation multiplied by his total years of creditable service; however, in no event is the annual benefit less than 40% nor more than 60% of the deceased member's average final compensation. Children of the deceased member who are under the age of eighteen years are entitled to the greater of \$200 per month or 10% of average final compensation (not to exceed 100% of average final compensation) until reaching the age of eighteen or until the age of twenty-two if enrolled full-time in an institution of higher learning, unless the surviving child is physically handicapped or mentally retarded in which case the benefit is payable regardless of age. If a deceased member dies leaving no surviving spouse, but at least one minor child, each child is entitled to receive forty percent of the deceased's average final compensation, not to exceed an aggregate of sixty percent of average final compensation.

**DEFERRED RETIREMENT OPTION PLAN** - In lieu of terminating employment and accepting a service retirement allowance, any member of the system who has at least twenty years of creditable service and who is eligible to receive a service retirement allowance may elect to participate in the deferred retirement option plan for up to thirty-six months and defer the receipt of benefits. Upon commencement of participation in the plan, membership in the system terminates and neither the employee nor employer contributions are payable. Compensation and creditable service will remain as they existed on the effective date of commencement of participation in the plan. The monthly



retirement benefits that would have been payable, had the member elected to cease employment and receive a service retirement allowance, are paid into the deferred retirement option plan account. Upon termination of employment at the end of the specified period of participation, a participant in the program may receive, at his option, a lump sum payment from the account equal to the payments to the account, or a true annuity based upon his account, or he may elect any other method of payment if approved by the board of trustees. The monthly benefits that were being paid into the fund during the period of participation will begin to be paid to the retiree. If employment is not terminated at the end of the thirty-six months, payments into the account cease and the member resumes active contributing membership in the system. If the participant dies during the period of participation in the program, a lump sum payment equal to his account balance is paid to his named beneficiary or, if none, to his estate; in addition, normal survivor benefits are payable to survivors of retirees.

**COST OF LIVING INCREASES** - The board of trustees is authorized to grant retired members and widows of members who have retired an annual cost of living increase of up to 3% of their current benefit, and all retired members and widows who are sixty-five years of age and older a 2% increase in their original benefit. In order for the board to grant either of these increases the system must meet certain criteria detailed in the statute related to funding status and interest earnings. In lieu of these cost of living adjustments the board may also grant an increase in the form of " $X \times (A+B)$ " where "X" is any amount up to \$1 per month, and "A" is equal to the number of years of credited service accrued at retirement or at death of the member or retiree, and "B" is equal to the number of years since retirement or since death of the member or retiree to June thirtieth of the initial year of such increase.

## ACTUARIAL ASSUMPTIONS

In determining actuarial costs, certain assumptions must be made regarding future experience under the plan. These assumptions include the rate of investment return, mortality of plan members, rates of salary increase, rates of retirement, rates of termination, rates of disability, and various other factors that have an impact on the cost of the plan. To the extent that future experience varies from the assumptions selected for valuation, future costs will be either higher or lower than anticipated. The following chart illustrates the effect of emerging experience on the plan.

Factor	Increase in Factor Results in
Investment Earnings Rate	Decrease in Cost
Annual Rate of Salary Increase	Increase in Cost
Rates of Retirement	Increase in Cost
Rates of Termination	Decrease in Cost
Rates of Disability	Increase in Cost
Rates of Mortality	Decrease in Cost

ACTUARIAL COST METHOD: Individual Entry Age Normal With Allocation of Cost Based on Earnings. Entry and Attained Ages Calculated on an Age Near Birthday Basis.

VALUATION INTEREST RATE: 7.5% (Net of investment expense)

ACTUARIAL ASSET VALUES: Invested assets are valued at market value adjusted to defer four-fifths of all earnings above or below the valuation interest rate in the valuation year, three-fifths of all earnings above or below the valuation interest rate in the prior year, two-fifths of all earnings above or below the valuation interest rate from two years prior, and one-fifth of all earnings above or below the valuation interest rate from three years prior. The actuarial value of assets is also subject to minimum and maximum values such that it will not be less than 90% nor more than 110% of the actual market value of assets.

ANNUITANT MORTALITY: 1994 Uninsured Pensioner Mortality Table Utilized for Pre-Retirement and Post-Retirement Mortality

RETIREE COST OF LIVING INCREASES: The present value of future retirement benefits is based on benefits currently being paid by the system and includes previously granted cost of living increases. The present values do not include provisions for potential future increases not yet authorized by the Board of Trustees.

ANNUAL SALARY INCREASE RATE: Salary increases include 3.25% inflation and merit increases. The gross rates including inflation and merit increases are as follows:

Years of Service	Salary Growth Rate
1 - 2	14.700%
3 - 14	6.300%
15 & over	5.300%

RETIREMENT RATES: The table of these rates is included later in the report. These rates apply only to those individuals eligible to retire.

RETIREMENT LIMITATIONS: Projected retirement benefits are not subject to IRS Section 415 limits.

DROP ENTRY RATES: The table of these rates is included later in the report. These rates apply only to those individuals eligible to participate.

DROP PARTICIPATION PERIOD: All DROP participants are assumed to participate for 3 years and retire at the end of this participation period.

RETIREMENT RATES FOR ACTIVE FORMER DROP PARTICIPANTS: Retirement rates for active former DROP participants are as follows:

Ages	Retirement Rates
74 & Under	0.25
75 & Over	1.00

DISABILITY RATES: 70% of the disability rates used for the 21<sup>st</sup> valuation of the Railroad Retirement System for individuals with 10-19 years of service. The table of these rates is included later in the report. 20% of total disabilities are assumed to be in the line of duty.

WITHDRAWAL RATES: The rates of withdrawal are applied based upon completed years of service according to the following table:

<u>Service</u>	<u>Factor</u>	<u>Service</u>	<u>Factor</u>
<1	0.100	7	0.020
1	0.060	8	0.020
2	0.060	9	0.020
3	0.060	10	0.020
4	0.035	11	0.020
5	0.035	>11	0.010
6	0.035		

Note: The withdrawal rate for individuals eligible to retire is assumed to be zero.

MARRIAGE STATISTICS: 80% of the members are assumed to be married; husbands are assumed to be three years older than wives.

SERVICE RELATED DEATH: 20% of Total Deaths

FAMILY STATISTICS: Assumptions utilized in determining the costs of various survivor benefits as listed below, are derived from the information provided in the 2000 U. S. Census:

<u>Member's Age</u>	<u>% With Children</u>	<u>Number of Children</u>	<u>Average Age</u>
25	62%	1.7	6
35	82%	2.1	10
45	66%	1.8	13
55	19%	1.4	15
65	2%	1.4	15

DISABLED LIVES MORTALITY: RP-2000 Disabled Lives Mortality Tables for Males and Females

VESTING ELECTING PERCENTAGE: 70% of those vested elect deferred benefits in lieu of contribution refunds.

## ACTUARIAL TABLES AND RATES

Age	Male Mortality Rates	Female Mortality Rates	Retirement Rates	DROP Entry Rates	Disability Rates
18	0.00050	0.00029	0.00000	0.00000	0.00105
19	0.00052	0.00030	0.00000	0.00000	0.00105
20	0.00054	0.00031	0.00000	0.00000	0.00105
21	0.00057	0.00031	0.00000	0.00000	0.00105
22	0.00060	0.00031	0.00000	0.00000	0.00105
23	0.00063	0.00031	0.00000	0.00000	0.00105
24	0.00067	0.00031	0.00000	0.00000	0.00105
25	0.00071	0.00031	0.00000	0.00000	0.00105
26	0.00075	0.00032	0.00000	0.00000	0.00105
27	0.00078	0.00032	0.00000	0.00000	0.00105
28	0.00081	0.00034	0.00000	0.00000	0.00105
29	0.00084	0.00036	0.00000	0.00000	0.00105
30	0.00086	0.00038	0.00000	0.00000	0.00105
31	0.00088	0.00040	0.00000	0.00000	0.00105
32	0.00090	0.00043	0.00000	0.00000	0.00105
33	0.00091	0.00045	0.00000	0.00000	0.00105
34	0.00091	0.00048	0.00000	0.00000	0.00105
35	0.00091	0.00051	0.00000	0.00000	0.00119
36	0.00093	0.00055	0.00000	0.00000	0.00133
37	0.00096	0.00059	0.00000	0.00000	0.00147
38	0.00101	0.00064	0.00000	0.00000	0.00168
39	0.00107	0.00070	0.00000	0.00000	0.00189
40	0.00115	0.00076	0.00000	0.00000	0.00217
41	0.00124	0.00083	0.06500	0.14000	0.00245
42	0.00135	0.00089	0.06500	0.14000	0.00273
43	0.00145	0.00094	0.06500	0.14000	0.00308
44	0.00157	0.00099	0.06500	0.14000	0.00350
45	0.00170	0.00105	0.06500	0.14000	0.00399
46	0.00185	0.00111	0.06500	0.14000	0.00455
47	0.00204	0.00120	0.06500	0.14000	0.00511
48	0.00226	0.00130	0.06500	0.14000	0.00581
49	0.00250	0.00141	0.06500	0.14000	0.00658
50	0.00277	0.00154	0.06500	0.14000	0.00749
51	0.00309	0.00169	0.03500	0.14000	0.00854
52	0.00345	0.00186	0.03500	0.23000	0.00966
53	0.00385	0.00205	0.03500	0.23000	0.01099
54	0.00428	0.00224	0.03500	0.23000	0.01246
55	0.00476	0.00247	0.12000	0.23000	0.01414
56	0.00532	0.00276	0.12000	0.23000	0.01610
57	0.00600	0.00314	0.12000	0.23000	0.01827
58	0.00677	0.00361	0.12000	0.10000	0.02072
59	0.00762	0.00415	0.12000	0.10000	0.02359
60	0.00858	0.00477	0.12000	0.10000	0.03416
61	0.00966	0.00548	0.12000	0.10000	0.03416
62	0.01091	0.00627	0.12000	0.35000	0.03416
63	0.01233	0.00718	0.12000	0.35000	0.03416
64	0.01391	0.00819	0.50000	0.35000	0.03416
65	0.01563	0.00929	0.50000	0.35000	0.03416

## GLOSSARY

**Accrued Benefit** – The pension benefit that an individual has earned as of a specific date based on the provisions of the plan and the individual's age, service, and salary as of that date.

**Actuarial Accrued Liability** – The actuarial present value of benefits payable to members of the fund less the present value of future normal costs attributable to the members.

**Actuarial Assumptions** - Assumptions as to the occurrence of future events affecting pension costs. These assumptions include rates of mortality, withdrawal, disablement, and retirement. Also included are rates of investment earnings, changes in compensation, as well as statistics related to marriage and family composition.

**Actuarial Cost Method** – A procedure for determining the portion of the cost of a pension plan to be allocated to each year. Each cost method allocates a certain portion of the actuarial present value of benefits between the actuarial accrued liability and future normal costs. Once this allocation is made, a determination of the normal cost attributable to a specific year can be made along with the payment to amortize any unfunded actuarial accrued liability. To the extent that a particular funding method allocates a greater (lesser) portion of the actual present value of benefits to the actuarial accrued liability it will allocate less (more) to future normal costs.

**Actuarial Equivalence** – Payments or receipts with equal actuarial value on a given date when valued using the same set of actuarial assumptions.

**Actuarial Gain (Loss)** – The financial effect on the fund of the difference between the expected and actual experience of the fund. The experience may be related to investment earnings above (or below) those expected or changes in the liability structure due to fewer (or greater) than the expected numbers of retirements, deaths, disabilities, or withdrawals. In addition, other factors such as pay increases above (or below) those forecast can result in actuarial gains or losses. The effect of such gains (or losses) is to decrease (or increase) future costs.

**Actuarial Present Value** - The value, as of a specified date, of an amount or series of amounts payable or receivable thereafter, with each amount adjusted to reflect the time value of money (through accrual of interest) and the probability of payments. For example: if \$600 invested today will be worth \$1,000 in 10 years and there is a 50% probability that a person will live 10 years, then the actuarial present value of \$1,000 payable to that person if he should survive 10 years is \$300.

**Actuarial Value of Assets** - The value of cash, investments, and other property belonging to the pension plan as used by the actuary for the purpose of the actuarial valuation. This may correspond to the book value, market value, or some modification involving either or both book and market value. Adjustments to market values are often made to reduce the volatility of asset values.

**Asset Gain (Loss)** - That portion of the actuarial gain attributable to investment performance above (below) the expected rate of return in the actuarial assumptions.

**Amortization Payment** - That portion of the pension plan contribution designated to pay interest and reduce the outstanding principal balance of unfunded actuarial accrued liability. If the amortization payment is less than the accrued interest on the unfunded actuarial accrued liability the outstanding principal balance will increase.

**Contribution Shortfall (Excess)** - The difference between contributions recommended in the prior valuation and the actual amount received.

**Decrements** – Events which result in the termination of membership in the system such as retirement, disability, withdrawal, or death.

**Employer Normal Cost** - That portion of the normal cost not attributable to employee contributions. It includes both direct contributions made by the employer and contributions from other non-employee sources such as revenue sharing and revenues related to taxes.

**Funded Ratio** – A measure of the ratio of assets to liabilities of the system according to a specific definition of those two values. Typically the assets used in the measure are the actuarial value of assets; the liabilities are defined by reference to some recognized actuarial funding method. Thus the funded ratio of a plan depends not only on the financial strength of the plan but also on the funding method used to determine the liabilities and the asset valuation method used to determine the assets in the ratio.

**Normal Cost** - That portion of the actuarial present value of pension plan benefits and expenses allocated to a valuation year by the actuarial cost method. This is analogous to one year's insurance premium.

**Pension Benefit Obligation** - The actuarial present value of benefits earned or credited to date based on the members expected final average compensation at retirement. For current retirees or terminated members this is equivalent to the actuarial present value of their accrued benefit.

**Projected Benefits** – The benefits expected to be paid in the future based on the provisions of the plan and the actuarial assumptions. The projected values are based on anticipated future advancement in age and accrual of service as well as increases in salary paid to the participant.

**Unfunded Actuarial Accrued Liability** - The excess of the actuarial accrued liability over the actuarial value of assets.

**Vested Benefits** - Benefits that the members are entitled to even if they withdraw from service.

**NOTES:**