

**FIREFIGHTERS'  
RETIREMENT SYSTEM**

ACTUARIAL VALUATION AS OF  
JUNE 30, 2007

# **G. S. CURRAN & COMPANY, LTD.**

Actuarial Services

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

November 16, 2007

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, 2007. Our report is based on the actuarial assumptions specified and relies on the data supplied by the system's administrator and accountants. This report was prepared at the request of the Board of Trustees of the Firefighters' Retirement System. The primary purposes of the report are to determine the actuarially required contribution for the retirement system for the fiscal year ending June 30, 2008, to recommend the net direct employer contribution rate for fiscal 2009, and to provide information required for the system's financial statements.

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.

Sincerely,

G. S. CURRAN & COMPANY, LTD.

By: \_\_\_\_\_  
Gary Curran, F.C.A., A.S.A.

**G. S. CURRAN & COMPANY, LTD.**

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## SUMMARY OF VALUATION RESULTS FIREFIGHTERS' RETIREMENT SYSTEM

Valuation Date:	June 30, 2007	June 30, 2006
Census Summary: Active Contributing Members	3,632	3,534
Retired Members and Beneficiaries	1,555	1,477
DROP Participants	134	111
Terminated Due a Deferred Benefit	54	52
Terminated Due a Refund	298	249

Payroll (excludes DROP Participants):	\$ 150,960,665	\$ 140,175,740
Benefits in Payment:	\$ 43,972,738	\$ 39,649,619
Market Value of Assets:	\$ 1,138,227,081	\$ 963,805,222
Unfunded Actuarial Accrued Liability:	\$ 166,667,308	\$ 177,950,515
Actuarial Asset Value:	\$ 1,025,656,019	\$ 911,329,622
Actuarial Accrued Liability:	\$ 1,192,323,327	\$ 1,089,280,137

Ratio of Actuarial Value of Assets to Actuarial Accrued Liabilities:	86.02%	83.66%
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\*\*\*\*\*  
FISCAL 2008
FISCAL 2007  
 \*\*\*\*\*

Normal Cost as of July 1:	\$ 35,755,562	\$ 33,933,985
Amortization Cost (Credit) as of July 1:	\$ 14,032,563	\$ 14,961,526
Total Actuarially Required Contribution Inclusive of Estimated Administrative Costs:	\$ 52,587,938	\$ 51,439,150
Projected Employee Contributions (8%)	\$ 12,475,594	\$ 11,810,487
Expected Insurance Premium Taxes	\$ 20,521,771	\$ 18,946,928
Employer's Net Direct Actuarially Req'd Contributions	\$ 19,590,573	\$ 20,681,735
Actual Net Direct Employer Contribution Rate:	13.75%	15.50%
Actuarially Required Net Direct Employer Cont. Rate:	12.56%	14.01%

\*\*\*\*\*  
 Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2009: 12.50%

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.

Changes in Methods and Assumptions: NONE

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 by 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 3,632 active contributing members in the system of whom 1,680 have vested retirement benefits; in addition, there are 134 participants in the Deferred Retirement Option Plan (DROP); 1,555 former system members or their beneficiaries are receiving retirement benefits. An additional 352 members have contributions remaining on deposit with the system; of this number, 54 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 \$1,138,227,081 as of June 30, 2007. Net investment income for fiscal 2007 measured on a market value basis amounted to \$165,942,188. Contributions to the system for fiscal 2007 totaled \$57,419,132; benefits and expenses amounted to \$48,939,461.

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-five through thirty-eight. 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.

## CHANGES IN PLAN PROVISIONS

**Act 143** provides for the removal of a former spouse as beneficiary of any benefits paid or payable, provided the former spouse consents to this removal. Proof of this consent by the former spouse is to be in the form of a certified court order issued in connection with a divorce proceeding. Once the former spouse is removed as beneficiary, the benefit is to be restored to the maximum amount payable, less any reduction required to account for the time that the former spouse was a beneficiary.

**Act 51** authorizes the board of trustees to conduct an audit of any participating employer. The objectives of the audit will be as follows:

- 1) verify the eligibility of a member or members to participate in the system
- 2) verify compensation being earned by a member or members as compared to the amount being reported to the retirement system
- 3) verify the years of covered employment and service credit accrued by a member or members
- 4) determine the accuracy of benefits scheduled to be paid or already being paid to any member or members

The participating employer will provide to the auditor complete access to any books, records, documents, and accounts needed to complete the audit, including but not limited to copies of any member's birth certificate, death certificate, driver's license, marriage license, time sheets, leave forms, payroll records, and contribution records. The retirement system may request the legislative auditor to conduct the full audit or any portion of the audit. Failure to comply with the requirements of this act may subject the governing authority of the employer and the custodian of records of the employer to the enforcement provisions of the public record laws found in R.S. 44:35(D) and (E).

**Act 352** states that notwithstanding the prudent-man rule, the system may but is not required to divest itself of any holding in a company having facilities or employees located in a prohibited nation as that term is defined in R.S. 11:312(B)(2). The provisions of this act will apply to both direct ownership of securities and securities held in a collective fund. The system will be required to adopt and implement a corporate governance strategy of constructive engagement with each company. The corporate governance strategy of constructive engagement will contain a plan of system action to cause the company to remove its facilities and/or employees from the prohibited nation. As part of the plan of system action, the system will make its best efforts to identify all such companies. The plan of system action will be implemented not later than one hundred twenty days after the effective date of this act.

## 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>Actuarial Value</u>	<u>Market Value</u>
1998	11.8%	11.5%
1999	8.4%	6.9%
2000	5.5%	3.5%
2001	0.7%	-2.9%
2002	-3.0%	-3.7%
2003	0.9%	5.4%
2004	8.0%	11.0%
2005	10.4%	10.4%
2006	9.9% *	12.3%
2007	11.6%	➔ 17.1%

\* 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 2007, the fund earned \$25,858,288 of dividends, interest and other recurring income. The Fund had a realized gain of \$3,638,215 from the sale of a fixed asset. In addition, the Fund had net realized and unrealized capital gains on investments of \$141,102,473. This was partially offset by \$4,656,788 of investment expense. The geometric mean of the market value rates of return measured over the last ten years was 7.0%.

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. The geometric mean of this rate over the last ten years has been 6.3%. For fiscal 2007 the system experienced net actuarial investment earnings of \$37,184,765 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 \$4,062,953 or 2.61% of payroll, in fiscal 2008.

## PLAN DEMOGRAPHICS AND LIABILITY EXPERIENCE

A reconciliation of the census for the system is given in Exhibit X. The system's active contributing membership experienced an increase during fiscal 2007 of 98 members. The number of retirees and



beneficiaries receiving benefits from the system increased by 78. The number of DROP participants increased by 23.

Over the last five years active membership has increased by 310 members; over the same period the number of retirees increased by 277. A review of the active census by age indicates that over the last ten years the population in the under-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 with service less than fifteen years and the corresponding decrease in the percentage of members with service over fifteen years. Although the changes in the makeup of the population along with changes in their salary increased the normal cost over the last year by \$1,888,652, the normal cost percentage decreased by 0.06% of payroll.

During fiscal year 2007 fourteen firefighters from the municipalities of Westwego, Westlake, Abbeville, and Hammond were merged into the Firefighters' Retirement System from the Municipal Employees' Retirement System under the provisions of Act 89 of the 1994 Third Extraordinary Legislative Session. The effective date of this merger was July 1, 2006. The portion of the cost of this merger to be paid from the Insurance Premium Tax Fund as of June 30, 2006 was calculated to be \$991,454. This amount with interest at 7.50% through June 30, 2007 is \$1,065,812. Based on a 30-year amortization, the interest-adjusted amortization payment for this merger is \$87,039 or 0.06% of projected payroll.

Plan liability experience for fiscal 2007 was unfavorable. Salary increase rates at most durations were somewhat above projections. Actual retirements and DROP entries were slightly above projections. Actual retiree deaths were below projections. All of these factors increased costs. Withdrawals significantly exceeded projections. Disabilities were slightly below projections. These factors partially offset the increase in costs. Net plan liability losses totaled \$17,836,299. These losses increased the interest-adjusted amortization payments on the system's unfunded accrued liability by \$1,948,863, or 1.25% of payroll, in fiscal 2008. In addition to the general liability losses, an additional loss of \$13,421,495 was generated by a COLA granted in fiscal 2007. The interest-adjusted amortization payment for the COLA liability was \$1,466,485 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 2007 contributions totaled \$3,684,696 more than required; the interest-adjusted amortization payment on the contribution surplus for fiscal 2007 is \$402,603 or 0.26% of payroll. In addition, for fiscal 2008 the net effect of the change in payroll on amortization costs was to reduce such costs by 0.56% 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 2007 except for those items labeled fiscal 2006.

	Dollars	Percentage of Payroll
Normal Cost for Fiscal 2007	\$ 35,183,504	23.83%
Cost of Demographic and Salary Changes	\$ <u>1,888,652</u>	<u>(0.06%)</u>
Normal Cost for Fiscal 2008	\$ 37,072,156	23.77%
UAL Payments for Fiscal 2007	\$ 15,512,440	10.51%
Change due to change in payroll	N/A	(0.56%)
Additional Amortization Expenses for Fiscal 2008:		
Merger Loss (Gain)	\$ 87,039	0.06%
Asset Loss (Gain)	\$ (4,062,953)	(2.61%)
Contribution Loss (Gain)	\$ (402,603)	(0.26%)
Liability Loss (Gain)	\$ <u>3,415,348</u>	<u>2.19%</u>
Net Amortization Expense (Credit) for Fiscal 2008	\$ (963,169)	(0.62%)
Estimated Administrative Cost for Fiscal 2008	\$ 966,511	0.62%
Total Normal Cost & Amortization Payments	\$ 52,587,938	33.72%

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The normal cost for fiscal 2008 as of July 1, 2007 is \$35,755,562. The amortization payments on the system's unfunded actuarial accrued liability as of July 1, 2007 total \$14,032,563. 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 2008 is \$52,587,938. We project that employee contributions will total \$12,475,594 for the fiscal year. This leaves

\$40,112,344 to be funded from direct employer contributions and insurance premium taxes. We estimate insurance premium taxes of \$20,521,771 will be paid to the system in fiscal 2008. Hence, the total actuarially required net direct employer contribution for fiscal 2008 amounts to \$19,590,573, or 12.56% of payroll.

Since actual employer contributions for fiscal 2008 are 13.75% of payroll, we estimate the effect of the contribution surplus will be to reduce required contributions in fiscal 2009 by 0.13% 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 12.50% for fiscal 2009.

## **COST OF LIVING INCREASES**

During fiscal 2007 the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 2.69%. 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 2007 the plan has met the necessary target ratio and earned sufficient investment earnings to grant a cost of living increase. For fiscal 2007, the fund earned \$37,184,765 in excess investment earnings.

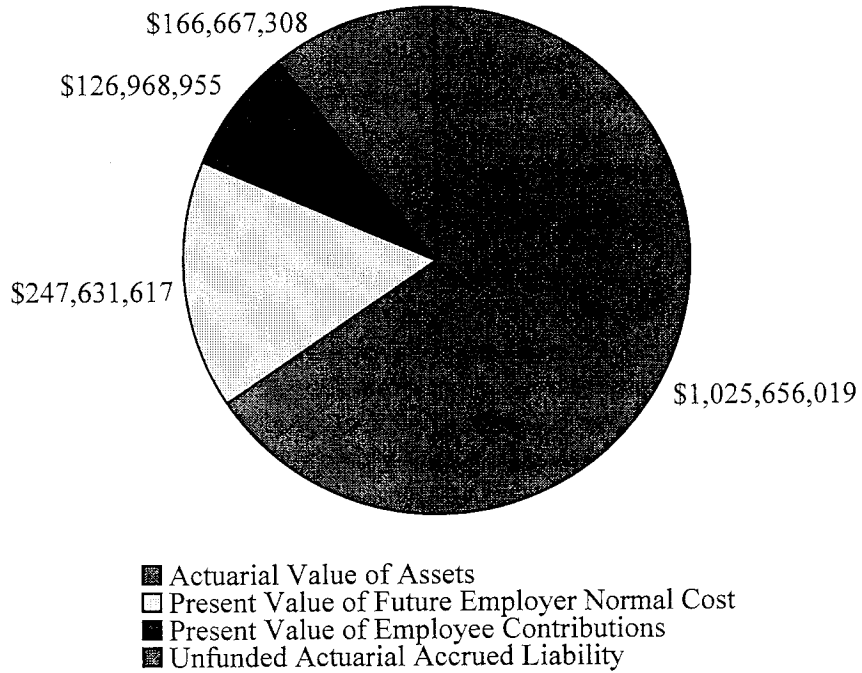
Below is a summary of available cost of living increases and their respective costs:

<u>COLA Description</u>	<u>Annual Increase in Benefits</u>	<u>Present Value Of Increase</u>	<u>Contribution Cost as a % or Payroll</u>
3% to all allowable pensioners	\$ 1,288,165	\$ 13,087,533	0.92%
2% to pensioners over age 65	\$ 225,969	\$ 1,919,219	0.13%

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.

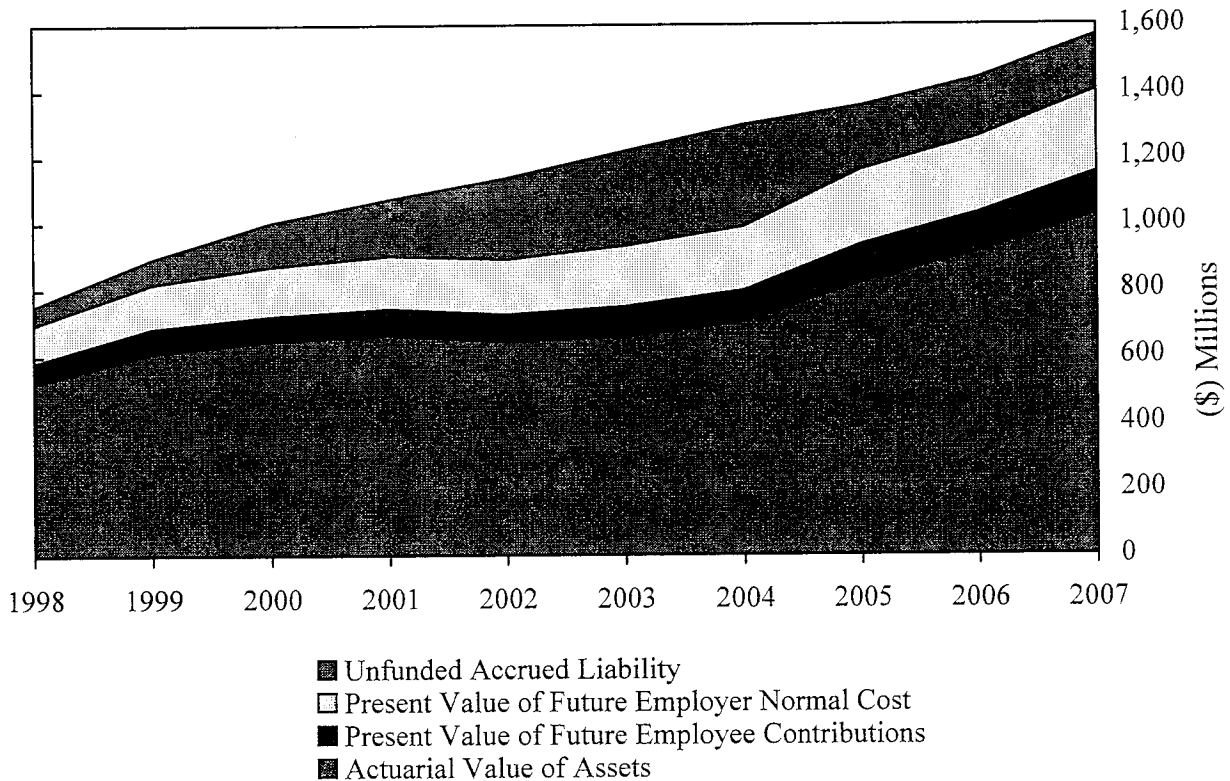
# Components of Present Value of Future Benefits

## June 30, 2007

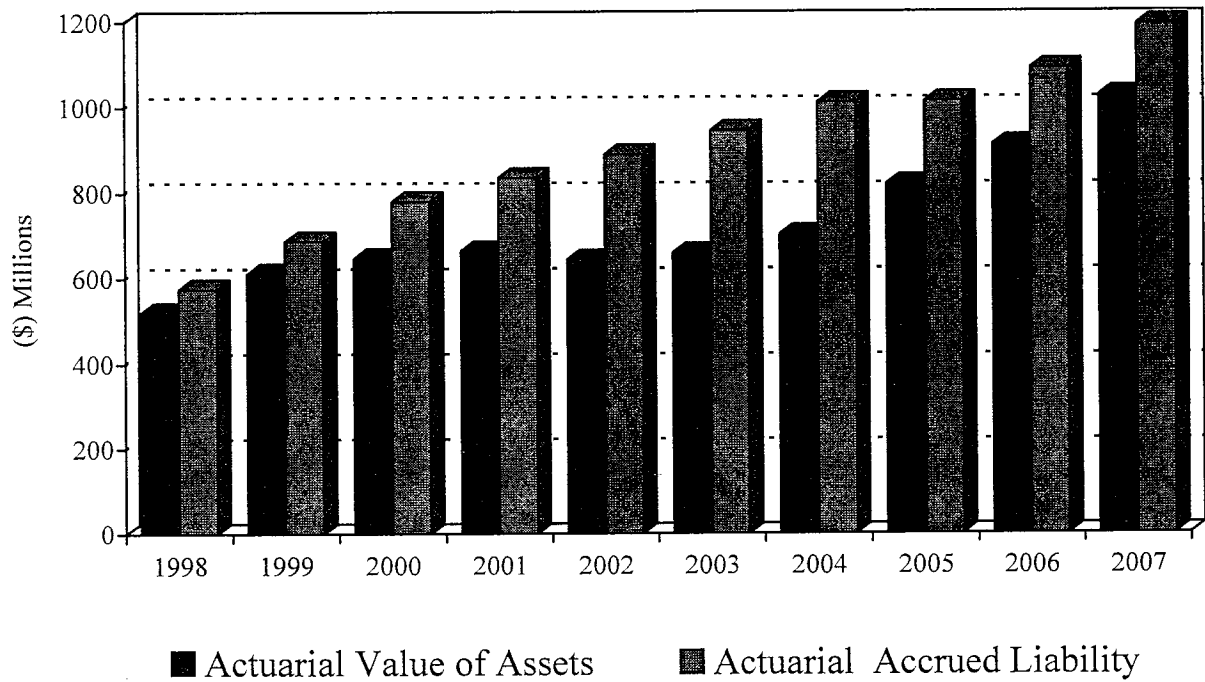


# Components of Present Value of Future Benefits

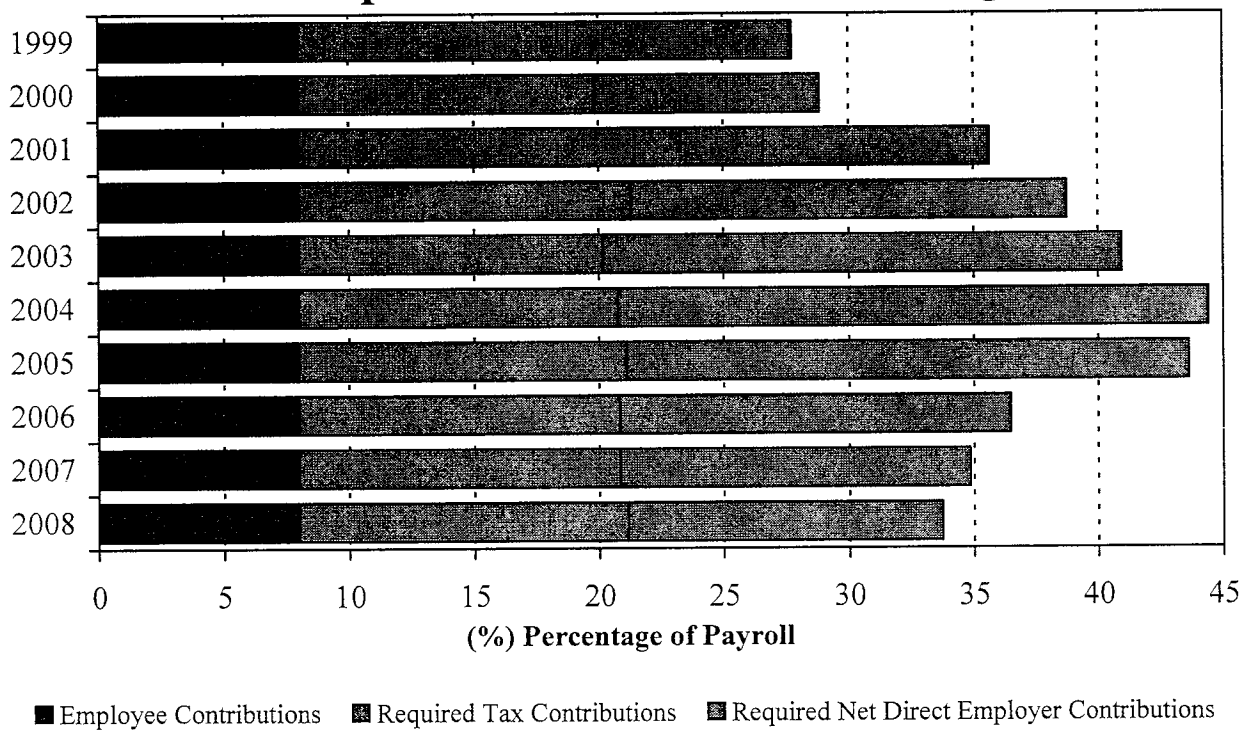
## Historical



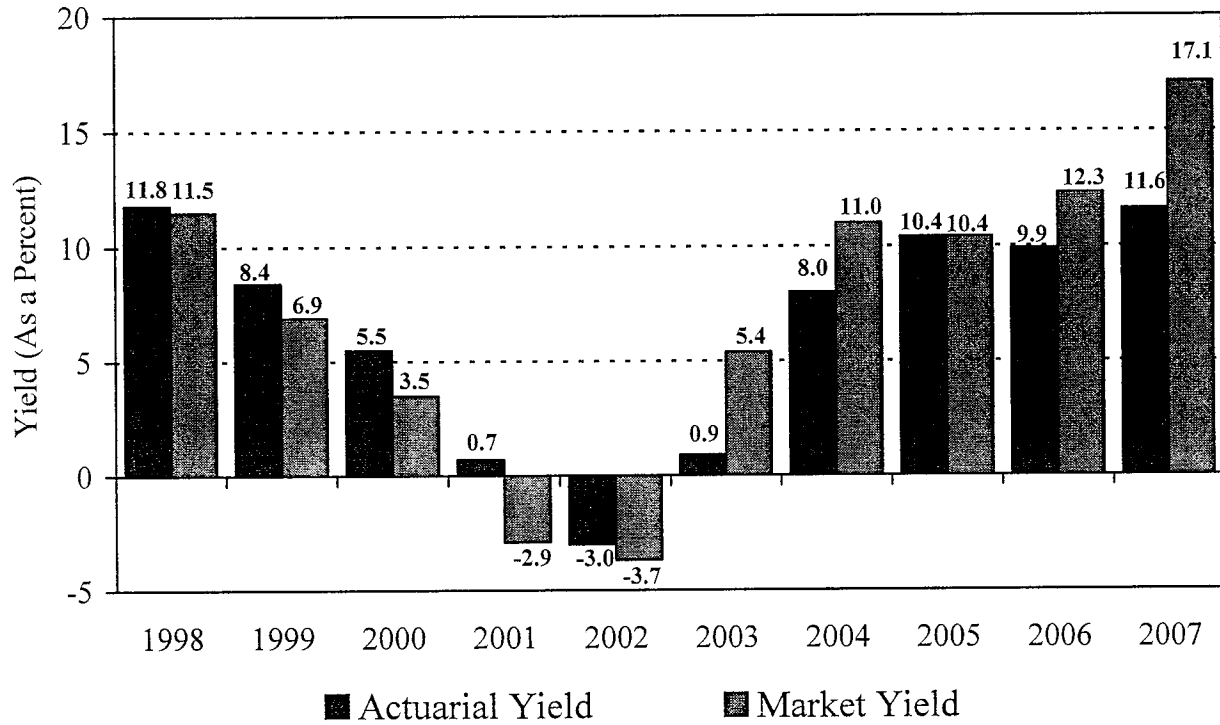
## Actuarial Value of Assets vs. Actuarial Accrued Liability



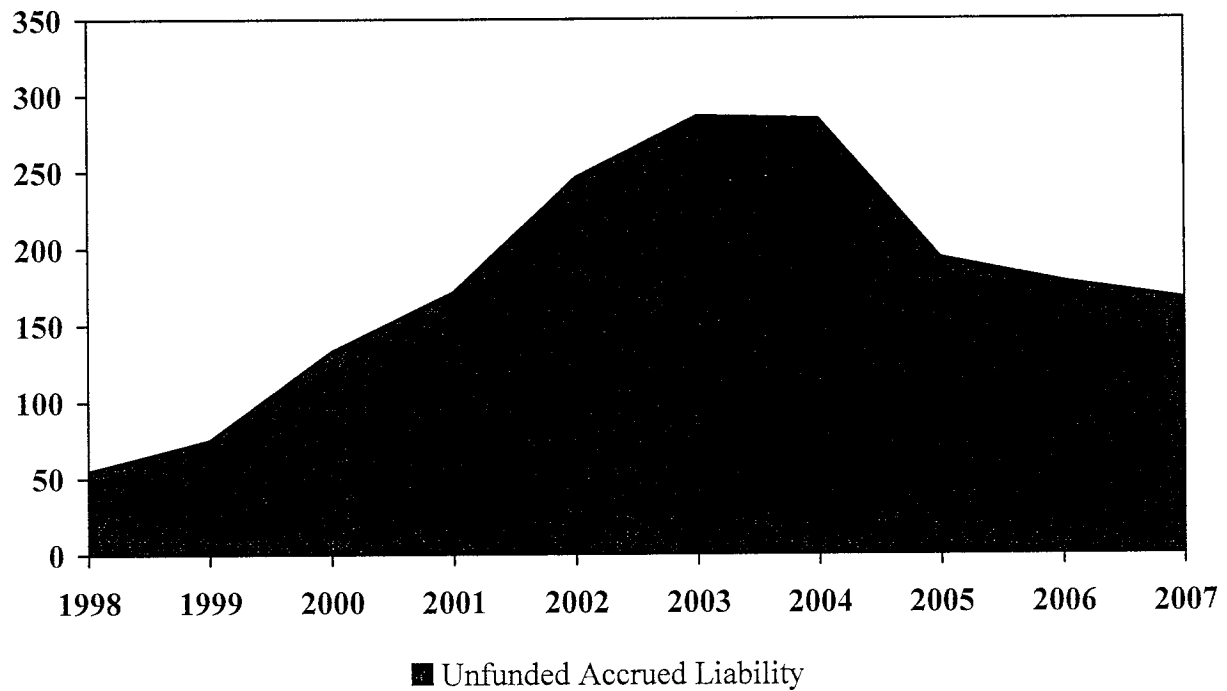
## Components of Actuarial Funding



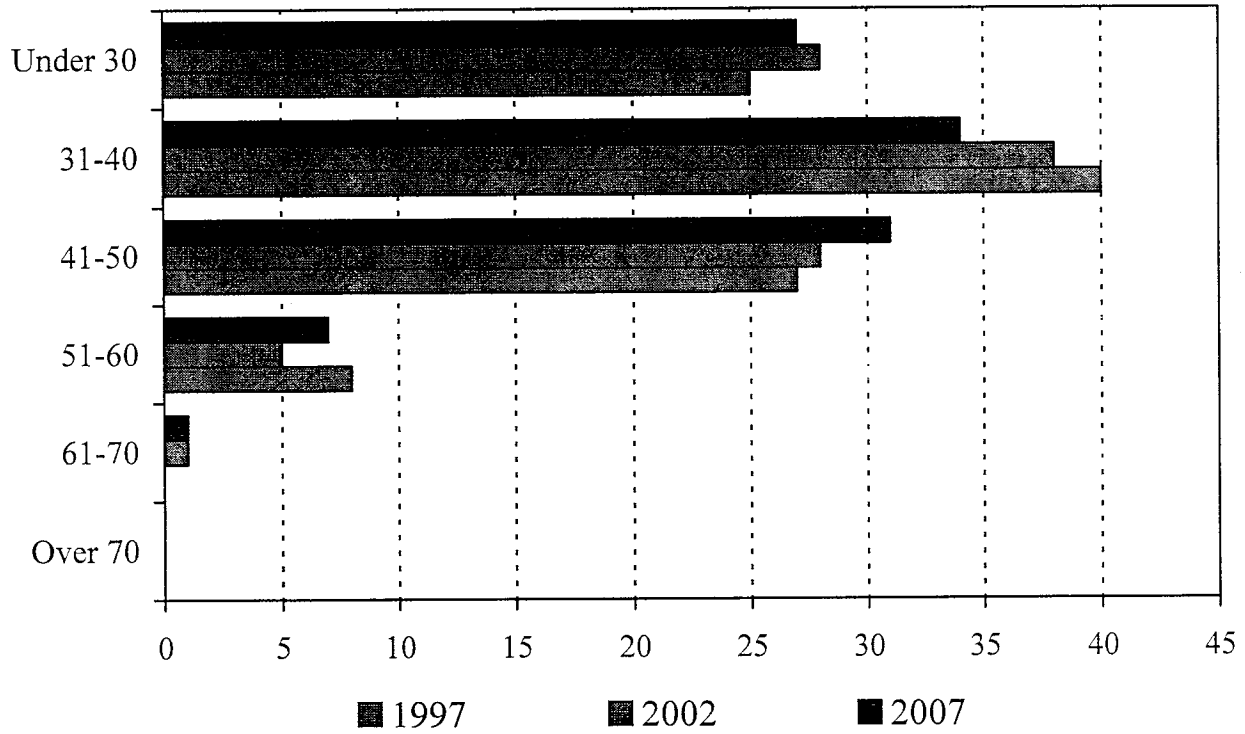
## Historical Asset Yields



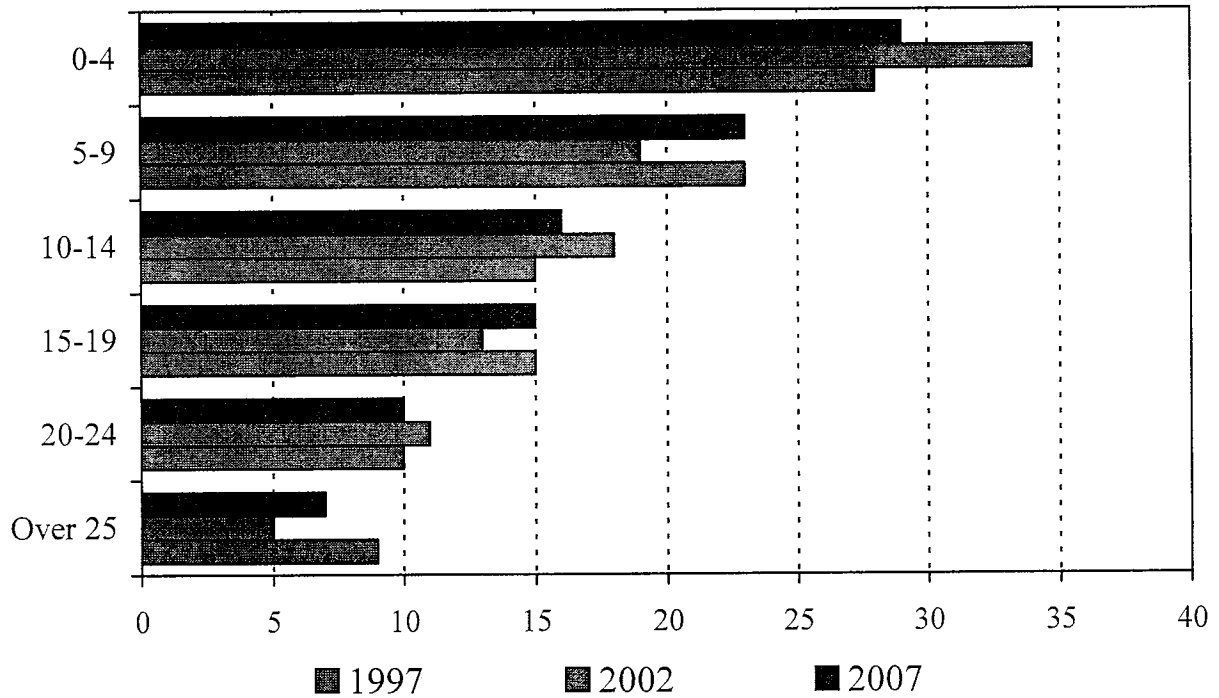
## Unfunded Accrued Liability



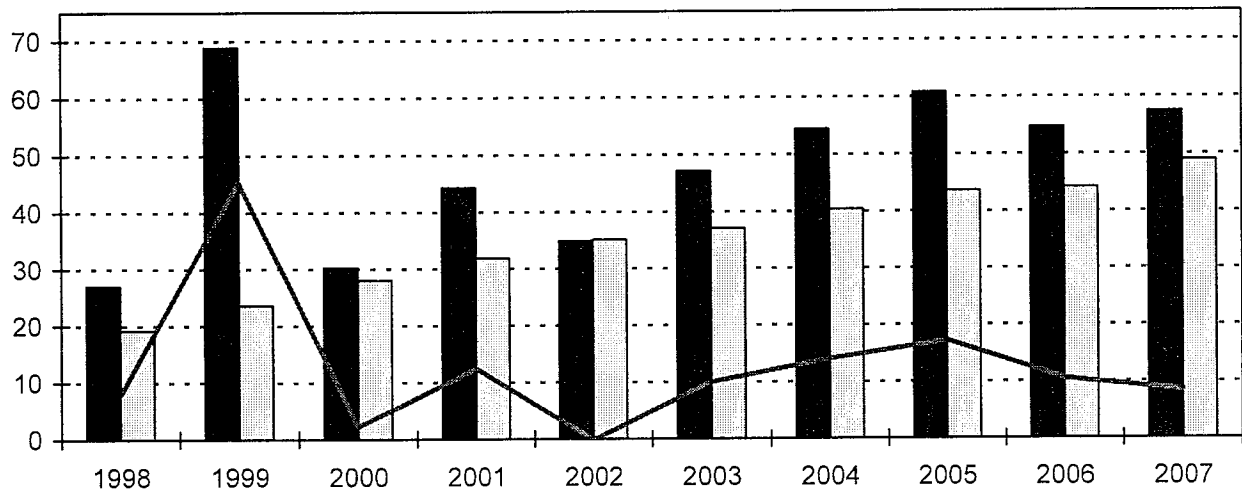
## Active – Census By Age (as a percent)



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

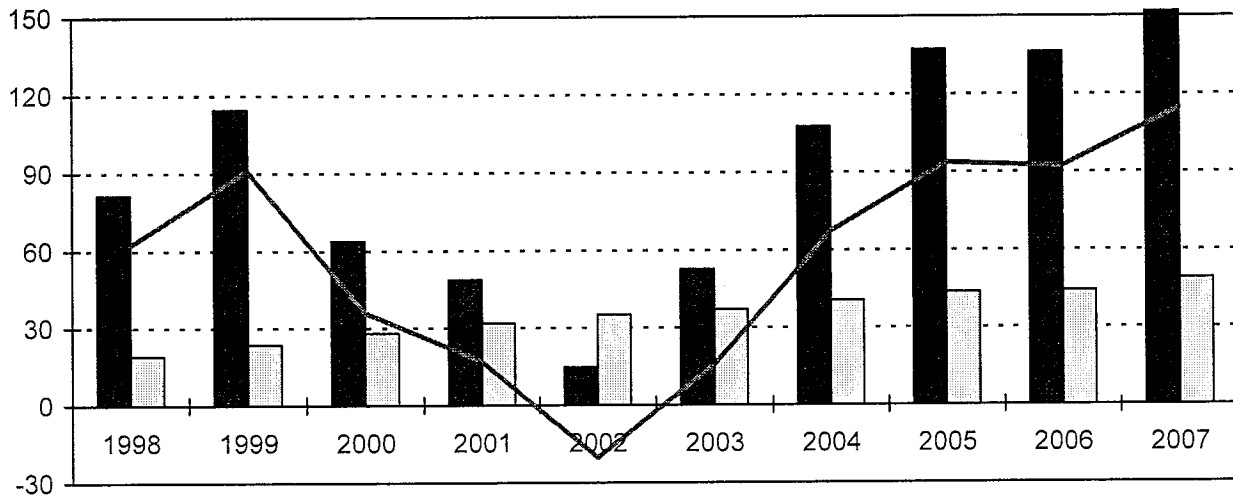


## Net Non-Investment Income



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Non-Investment Income (\$Mil) ■	27.0	68.9	30.2	44.3	34.9	47.1	54.4	60.8	54.7	57.4
Benefits and Expenses (\$Mil) ▨	19.2	23.6	28.0	31.9	35.1	37.1	40.4	43.6	44.2	48.9
Net Non-Investment Income (\$Mil) —	7.8	45.3	2.2	12.4	-0.2	10.0	14.4	17.2	10.5	8.5

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



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total Income (\$Mil) ■	81.4	114.5	63.8	48.7	14.7	52.6	107.6	137.2	136.3	163.3
Benefits and Expenses (\$Mil) ▨	19.2	23.6	28.0	31.9	35.1	37.1	40.4	43.6	44.2	48.9
Net Change in AVA (\$Mil) —	62.2	90.9	35.8	16.8	-20.4	15.5	67.2	93.6	92.1	114.4



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

1.	Normal Cost of Retirement Benefits.....	\$ 31,073,696
2.	Normal Cost of Death Benefits.....	\$ 1,440,826
3.	Normal Cost of Disability Benefits.....	\$ 1,116,829
4.	Normal Cost of Deferred Retirement Benefits .....	\$ 1,072,382
5.	Normal Cost of Contribution Refunds .....	\$ 1,051,829
6.	TOTAL Normal Cost as of July 1, 2007 (1+2+3+4+5).....	\$ 35,755,562
7.	Amortization of Unfunded Accrued Liability of \$166,667,308 .....	\$ 14,032,563
8.	TOTAL Normal Cost & Amortization Payments (6+7).....	\$ 49,788,125
9.	Normal Cost and Amortization Payments Interest Adjusted for Midyear Payment .....	\$ 51,621,426
10.	Estimated Administrative Cost for Fiscal 2008 .....	\$ 966,511
11.	TOTAL Administrative and Interest Adjusted Actuarial Costs (9+10).....	\$ 52,587,938
12.	Projected Employee Contributions for Fiscal 2008 .....	\$ 12,475,594
13.	GROSS Employer Actuarially Required Contribution to be funded by direct employer contributions and Insurance Premium Taxes for Fiscal 2008 (11 - 12) .....	\$ 40,112,344
14.	Expected Insurance Premium Taxes due in Fiscal 2008.....	\$ 20,521,771
15.	Net Direct Actuarially Required Employer Contributions for Fiscal 2008 (13-14)	\$ 19,590,573
16.	Projected Payroll For Contributing Members July 1, 2007 through June 30, 2008 .....	\$155,944,919
17.	Employer's Net Direct Actuarially Required Contribution as a % of Projected Payroll for Fiscal 2008 (15 ÷ 16) .....	12.56%
18.	Actual Net Direct Employer Contribution Rate for Fiscal 2008.....	13.75%
19.	Contribution Gain (Loss) as a Percentage of Payroll (18 – 17) .....	1.19%
20.	Adjustment to Following Year Payment for Contribution Gain (Loss).....	0.13%
21.	Recommended Net Direct Employer Contribution Rate for Fiscal 2009 (17 – 20) (Rounded to nearest 0.25%) .....	12.50%

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

Present Value of Future Benefits for Active Members:

Retirement Benefits.....	\$ 994,641,237
Survivor Benefits .....	24,757,897
Disability Benefits.....	16,376,482
Vested Deferred Termination Benefits .....	19,939,477
Contribution Refunds .....	7,058,592

TOTAL Present Value of Future Benefits for Active Members..... \$ 1,062,773,685

Present Value of Future Benefits for Terminated Members:

Terminated Vested Members Due Benefits at Retirement .....	\$ 7,213,592
Terminated Members with Reciprocal Due Benefits at Retirement.....	0
Terminated Members Due a Refund.....	1,041,239

TOTAL Present Value of Future Benefits for Terminated Members ..... \$ 8,254,831

Present Value of Future Benefits for Retirees:

Regular Retirees.....	\$ 394,169,762
Disability Retirees .....	22,525,298
Survivors & Widows .....	32,592,877
Retiree DROP Account Balance.....	45,504,045
IBO Retirees' Account Balance.....	1,103,401

TOTAL Present Value of Future Benefits for Retirees & Survivors ..... \$ 495,895,383

TOTAL Present Value of Future Benefits..... \$ 1,566,923,899

**EXHIBIT III**  
**ACTUARIAL VALUE OF ASSETS**

Current Assets:

Cash & Cash Equivalents in Banks .....	\$ 4,859,523
Contributions Receivable from Members .....	1,125,898
Contributions Receivable from Employers.....	2,312,676
Accrued Interest on Investments .....	1,708,698
Prepaid Expenses .....	7,548
TOTAL CURRENT ASSETS .....	\$ 10,014,343

Property, Plant and Equipment (Net of accumulated depreciation) .....	\$ 931,321
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Investments:

Common Stock .....	\$ 616,015,451
Alternative Investments .....	307,184,791
Corporate Bonds .....	101,079,586
U. S. Government Securities.....	53,173,582
Cash Equivalents.....	48,771,076
Adjustment for Actuarial Smoothing.....	(112,571,062)
TOTAL INVESTMENTS .....	\$ 1,013,653,424
MERGER NOTES .....	\$ 5,590,387
TOTAL ASSETS .....	\$ 1,030,189,475

Current Liabilities:

Purchased Investments Payable .....	\$ 3,216,400
Accounts Payable.....	1,317,056
TOTAL CURRENT LIABILITIES .....	\$ 4,533,456
ACTUARIAL VALUE OF ASSETS.....	\$ 1,025,656,019

**EXHIBIT IV  
PRESENT VALUE OF FUTURE CONTRIBUTIONS**

Employee Contributions to the Annuity Savings Fund .....	\$ 126,968,955
Employer Normal Contributions to the Pension Accumulation Fund .....	247,631,617
Employer Payments on the Unfunded Actuarial Accrued Liability .....	166,667,308
<b>TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS .....</b>	<b>\$ 541,267,880</b>

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

<b>LIABILITY FOR ACTIVE MEMBERS</b>	
Accrued Liability for Retirement Benefits .....	\$ 669,226,937
Accrued Liability for Survivor Benefits .....	9,628,261
Accrued Liability for Disability Benefits .....	4,643,648
Accrued Liability for Vested Termination Benefits .....	8,681,634
Accrued Liability for Refunds of Contributions .....	(4,007,367)
<b>TOTAL Actuarial Accrued Liability for Active Members .....</b>	<b>\$ 688,173,113</b>
<b>LIABILITY FOR TERMINATED MEMBERS .....</b>	<b>\$ 8,254,831</b>
<b>LIABILITY FOR RETIREES AND SURVIVORS .....</b>	<b>\$ 495,895,383</b>
<b>TOTAL ACTUARIAL ACCRUED LIABILITY .....</b>	<b>\$1,192,323,327</b>
<b>ACTUARIAL VALUE OF ASSETS .....</b>	<b>\$ 1,025,656,019</b>
<b>UNFUNDED ACTUARIAL ACCRUED LIABILITY .....</b>	<b>\$ 166,667,308</b>

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

Prior Year Unfunded Accrued Liability .....	\$ 177,950,515
Interest on Unfunded Accrued Liability .....	\$ 13,346,289
Normal Cost for Prior Year .....	33,933,985
Interest on the Normal Cost .....	2,545,049
Normal Cost for Merged Systems with Accrued Interest .....	138,444
Administrative Expenses .....	746,434
Interest on Expenses .....	27,485
<b>TOTAL Increases to Unfunded Accrued Liability .....</b>	<b>\$ 50,737,686</b>
Required Contributions for Prior Year with interest .....	\$ 53,475,038
Contribution Excess (Shortfall) with accrued interest .....	3,684,696
Cost of Living Adjustment Gains (Losses) .....	(13,421,495)
Merger Gains (Losses) .....	(1,065,812)
Investment Gains (Losses) .....	37,184,765
Liability Experience Gains (Losses) .....	(17,836,299)
<b>TOTAL Decreases to Unfunded Accrued Liability .....</b>	<b>\$ 62,020,893</b>
<b>CURRENT YEAR UNFUNDED ACCRUED LIABILITY .....</b>	<b>\$ 166,667,308</b>

**EXHIBIT V - SCHEDULE C**  
**AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY**  
**JUNE 30, 2006**

FISCAL YEAR	DESCRIPTION	AMORT. PERIOD	INITIAL BALANCE	YEARS REMAINING	REMAINING BALANCE	AMORT. PAYMENTS
1993	Merger Loss (Gain)	30	13,485,002	16	10,295,523	1,047,664
1995	Merger Loss (Gain)	30	41,779,611	18	33,959,544	3,254,713
1996	Merger Loss (Gain)	30	1,772,399	19	1,480,119	138,251
1997	Merger Loss (Gain)	30	890,324	20	762,026	69,533
1998	Merger Loss (Gain)	30	1,602,435	21	1,402,664	125,299
1999	Merger Loss (Gain)	30	14,104,876	22	12,602,572	1,104,183
2001	Merger Loss (Gain)	30	3,117,590	24	2,887,830	244,593
* 2002	Cumulative Non-Merger Bases	27	175,578,584	22	162,405,128	14,229,238
2003	Contribution Loss (Gain)	15	2,678,010	11	2,212,324	281,320
2003	Assumption Loss (Gain)	15	(3,248,077)	11	(2,683,260)	(341,205)
2003	Experience Loss (Gain)	15	44,477,780	11	36,743,424	4,672,310
2004	Contribution Loss (Gain)	15	2,129,874	12	1,863,500	224,102
2004	Experience Loss (Gain)	15	1,570,785	12	1,374,334	165,275
2005	Experience Loss (Gain)	15	(24,922,321)	13	(22,942,342)	(2,626,401)
2005	Assumption Loss (Gain)	15	(57,207,831)	13	(52,662,897)	(6,028,760)
2005	Contribution Loss (Gain)	15	(2,457,193)	13	(2,261,980)	(258,948)
2006	Experience Loss (Gain)	15	(17,548,002)	14	(16,876,138)	(1,849,269)
2006	Assumption Loss (Gain)	15	7,880,410	14	7,578,691	830,465
2006	Contribution Loss (Gain)	15	(3,044,474)	14	(2,927,899)	(320,837)
2007	Experience Loss (Gain)	15	(5,926,971)	15	(5,926,971)	(624,605)
2007	Contribution Loss (Gain)	15	(3,684,696)	15	(3,684,696)	(388,306)
2007	Merger Loss (Gain)	30	1,065,812	30	1,065,812	83,948

TOTAL Unfunded Actuarial Accrued Liability \$ 166,667,308

TOTAL Fiscal 2008 Amortization Payments \$14,032,563

\* 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, 2006) .....	\$ 911,329,622
Income:	
Regular Member Contributions.....	\$ 12,343,832
Regular Employer Contributions.....	23,989,079
Insurance Premium Taxes .....	18,796,831
Irregular Contributions .....	527,404
Contributions from Mergers .....	1,761,986
TOTAL CONTRIBUTIONS.....	\$ 57,419,132
Interest and Dividends .....	25,233,339
Rent Income .....	28,391
Net Appreciation of Fair Value of Investments.....	141,102,473
Gain on Sale of Fixed Assets.....	3,638,215
Merger Interest.....	417,091
Securities Lending .....	179,467
Investment Expenses .....	(4,656,788)
Adjustment for Actuarial Smoothing.....	(60,095,462)
TOTAL INVESTMENT INCOME .....	\$ 105,846,726
TOTAL Income .....	\$ 163,265,858
Expenses:	
Retirement and Survivor Benefits .....	\$ 38,692,954
DROP Disbursements.....	5,262,139
Disability Benefits .....	3,321,152
Refunds of Contributions.....	916,782
Administrative Expenses .....	746,434
Funds Transferred to Another System.....	0
TOTAL Expenses .....	\$ 48,939,461
Net Income for Fiscal 2007 (Income - Expenses) .....	\$ 114,326,397
Actuarial Value of Assets (June 30, 2007) .....	\$1,025,656,019

**EXHIBIT VII  
FUND BALANCE**

Present Assets of the System Creditable to:

Annuity Savings Fund .....	\$ 102,726,606
Annuity Reserve Fund .....	449,287,937
Pension Accumulation Fund .....	526,190,195
Deferred Retirement Option Plan Account .....	58,918,942
Initial Benefit Option Plan Account .....	1,103,401
NET MARKET VALUE OF ASSETS .....	\$ 1,138,227,081
ADJUSTMENT FOR ACTUARIAL SMOOTHING .....	(112,571,062)
NET ACTUARIAL VALUE OF ASSETS .....	\$ 1,025,656,019

*AVA  
PBO = Funded Ratio*

**EXHIBIT VIII  
PENSION BENEFIT OBLIGATION**

Present Value of Credited Projected Payable to Current Employees .....	\$ 652,895,937
Present Value of Benefits Payable to Terminated Employees .....	8,254,831
Present Value of Benefits Payable to Current Retirees and Beneficiaries .....	495,895,383
TOTAL PENSION BENEFIT OBLIGATION .....	\$ 1,157,046,151

**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: .....		0.46%
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%)	
TOTAL Adjustments .....		(30.00%)
Amortization of Adjustments in Funded Ratio over 30 years:		
Changes for Fiscal 1987 .....	0.48%	
Changes for Fiscal 1988 .....	2.05%	
Changes for Fiscal 1989 .....	2.28%	
Changes for Fiscal 1992 .....	(0.67%)	
Changes for Fiscal 1993 .....	0.58%	
Changes for Fiscal 1994 .....	0.01%	
Changes for Fiscal 1995 .....	0.69%	
Changes for Fiscal 1996 .....	5.97%	
Changes for Fiscal 1997 .....	1.22%	
Changes for Fiscal 1998 .....	0.08%	
Changes for Fiscal 1999 .....	0.26%	
Changes for Fiscal 2000 .....	0.69%	
Changes for Fiscal 2001 .....	0.05%	
Changes for Fiscal 2003 .....	(0.06%)	
Changes for Fiscal 2005 .....	(0.28%)	
Changes for Fiscal 2006 .....	0.02%	
Changes for Fiscal 2007 .....	0.00%	
TOTAL Amortization of Adjustments .....		13.37%
Target Ratio for Current Fiscal Year .....		83.18%
Actuarial Value of Assets Divided by PBO as of Fiscal 2007 .....		88.64%



**EXHIBIT X  
CENSUS DATA**

	Active	Terminated with Funds on Deposit	DROP	Retired	Total
Number of members as of June 30, 2006	3,534	301	111	1,477	5,423
Additions to Census					
Initial membership	324	35			359
Death of another member	(3)			3	
Omitted in error last year					
Change in Status during Year					
Actives terminating service	(71)	71			
Actives who retired	(52)			52	
Actives entering DROP	(65)		65		
Term. members rehired	19	(19)			
Term. members who retire		(6)		6	
Retirees who are rehired	2			(2)	
Refunded who are rehired	15	2			17
DROP participants retiring			(30)	30	
DROP returned to work	11		(11)		
Omitted in error last year		1		2	3
Eliminated from Census					
Refund of contributions	(79)	(33)			(112)
Deaths	(3)		(1)	(9)	(13)
Included in error last year					
Adjustment for multiple records				2	2
Suspended Benefits				(6)	(6)
Number of members as of June 30, 2007	3,632	352	134	1,555	5,673



















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

	Fiscal 2007	Fiscal 2006	Fiscal 2005	Fiscal 2004
Number of Active Contributing Members	3,632	3,534	3,532	3,431
Number of Retirees & Survivors	1,555	1,477	1,434	1,379
DROP Participants	134	111	103	114
Number Terminated Due Deferred Benefits	54	52	45	42
Number of Terminated Due Refund	298	249	189	181
Active Lives Payroll (excludes DROP participants)	\$ 150,960,665	\$ 140,175,740	\$ 134,313,739	\$ 128,144,746
Retiree Benefits in Payment	\$ 43,972,738	\$ 39,649,619	\$ 36,510,489	\$ 34,076,169
Market Value of Assets	\$1,138,227,081	\$ 963,805,222	\$ 848,499,924	\$ 752,274,788
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability	86.02%	83.66%	80.88%	71.84%
Actuarial Accrued Liability	\$1,192,323,327	\$1,089,280,137	\$1,012,901,863	\$1,010,016,864
Actuarial Value of Assets	\$1,025,656,019	\$ 911,329,622	\$ 819,240,156	\$ 725,615,787
UAL (Funding Excess)	\$ 166,667,308	\$ 177,950,515	\$ 193,661,707	\$ 284,401,078
P.V. of Future Employer Normal Contributions	\$ 247,631,617	\$ 230,234,335	\$ 226,307,495	\$ 192,151,099
P.V. of Future Employee Contributions	\$ 126,968,955	\$ 118,092,552	\$ 114,703,708	\$ 94,736,659
Present Value of Future Benefits	\$1,566,923,899	\$1,437,607,024	\$1,353,913,066	\$1,296,904,623

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	Fiscal 2008	Fiscal 2007	Fiscal 2006	Fiscal 2005
Employee Contribution Rate	8.00%	8.00%	8.00%	8.00%
Required Tax Contributions as a Percentage of Projected Payroll	13.16%	12.83%	12.82%	13.11%
Actuarially Required Employer Contribution As a Percentage of Projected Payroll	12.56%	14.01%	15.66%	22.51%
Actual Employer Contribution Rate	13.75%	15.50%	18.00%	24.00%

Fiscal 2003	Fiscal 2002	Fiscal 2001	Fiscal 2000	Fiscal 1999	Fiscal 1998
3,360	3,322	3,257	3,098	2,966	2,567
1,315	1,278	1,230	1,155	1,093	915
120	145	156	155	144	139
36	30	25	18	20	20
143	133	118	95	73	45
\$ 121,012,780	\$ 114,422,827	\$ 107,667,223	\$ 100,504,497	\$ 92,758,784	\$ 79,171,364
\$ 31,542,638	\$ 29,610,698	\$ 27,934,986	\$ 25,932,694	\$ 23,085,435	\$ 18,177,220
\$ 664,570,797	\$ 620,860,572	\$ 641,929,807	\$ 645,641,501	\$ 621,030,022	\$ 536,826,709
69.69%	72.33%	79.45%	82.95%	89.04%	90.44%
\$ 944,688,430	\$ 888,963,640	\$ 834,986,462	\$ 779,541,318	\$ 686,029,152	\$ 574,884,182
\$ 658,376,086	\$ 642,947,201	\$ 663,377,250	\$ 646,609,069	\$ 610,870,354	\$ 519,924,527
\$ 286,312,344	\$ 246,016,439	\$ 171,609,212	\$ 132,932,249	\$ 75,158,798	\$ 54,959,655
\$ 182,925,316	\$ 166,298,912	\$ 159,311,329	\$ 149,049,128	\$ 133,929,737	\$ 114,269,278
\$ 90,145,420	\$ 82,398,183	\$ 79,024,405	\$ 73,957,562	\$ 73,159,070	\$ 62,144,411
\$1,217,759,166	\$1,137,660,735	\$1,073,322,196	\$1,002,548,008	\$ 893,117,959	\$ 751,297,871

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Fiscal 2004	Fiscal 2003	Fiscal 2002	Fiscal 2001	Fiscal 2000	Fiscal 1999
8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
12.77%	12.17%	13.31%	18.64%	11.86%	10.76%
23.64%	20.78%	17.44%	9.00%	9.00%	9.00%
21.00%	18.25%	9.00%	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 payable until the spouse remarries. 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%

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. Under this methodology the value of the assets will not be less than 90% nor more than 110% of the actual market value.

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.

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

**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 an allocation of pension costs to each fiscal year. Although all proper cost methods will accumulate sufficient assets to provide for members pensions, some accumulate assets more or less rapidly than others by producing higher or lower costs in the earlier years with corresponding decreasing or increasing costs in future years.

**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.

**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.

**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.

**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 member's expected final average compensation at retirement. For current retirees or terminated members this is equivalent to the actuarial present value of their accrued benefit.

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

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

**NOTES:**