# FIREFIGHTERS' RETIREMENT SYSTEM

ACTUARIAL VALUATION AS OF JUNE 30, 2006

# 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

November 21, 2006

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, 2006. 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, 2007, to recommend the net direct employer contribution rate for fiscal 2008, 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.

# TABLE OF CONTENTS

<u>SUBJECT</u> <u>PAG</u>	<u>GE</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	6
Cost of Living Increases	
Graphs	9
Exhibit I - Analysis of Actuarially Required Contributions	14
Exhibit II - Present Value of Future Benefits	15
Exhibit III - Actuarial Value of Assets	16
Exhibit IV - Present Value of Future Contributions	17
Exhibit V (Schedule A) - Actuarial Accrued Liabilities	17
Exhibit V (Schedule B) - Change in Unfunded Actuarial Accrued Liability	17
Exhibit V (Schedule C) - Amortization of Unfunded Actuarial Accrued Liability	18
Exhibit VI - Analysis of Increase in Assets	19
Exhibit VII - Fund Balance	20
Exhibit VIII - Pension Benefit Obligation	20
Exhibit IX - Cost of Living Adjustments - Target Ratio	21
Exhibit X - Census Data	22
Exhibit XI - Year to Year Comparison	31
Summary of Principal Plan Provisions	33
Actuarial Assumptions	36
Glossary	41

# SUMMARY OF VALUATION RESULTS FIREFIGHTERS' RETIREMENT SYSTEM

Valuation Date:			June 30, 2006		June 30, 2005
Census Summary:	Active Contributing Members Retired Members and Beneficiaries DROP Participants Terminated Due a Deferred Benefit Terminated Due a Refund		3,534 1,477 111 52 249		3,532 1,434 103 45 189
Payroll (excludes I	DROP Participants):	\$	140,175,740	\$	134,313,739
Benefits in Paymer	nt:	\$	39,649,619	\$	36,510,489
Market Value of A	ssets:	\$	963,805,222	\$	848,499,924
Unfunded Actuaria	l Accrued Liability:	\$	177,950,515	\$	193,661,707
Actuarial Asset Va	lue:	\$	911,329,622	\$	819,240,156
Actuarial Accrued	Liability:	\$	1,089,280,137	\$	1,012,901,863
Ratio of Actuarial Actuarial Actuarial Accrued		****	83.66% ***********************************	******	80.88% ***********************************
Normal Cost as of	July 1:	\$	33,933,985	\$	32,758,986
Amortization Cost	(Credit) as of July 1:	\$	14,961,526	\$	16,301,167
	equired Contribution Estimated Administrative Costs:	\$	51,439,150	\$	51,555,407
Projected Employe	e Contributions (8%)	\$	11,810,487	\$	11,303,437
Expected Insurance	Premium Taxes	\$	18,946,928	\$	18,119,048
Employer's Net Dir	rect Actuarially Req'd Contributions	\$	20,681,735	\$	22,132,922
Actual Net Direct E	Employer Contribution Rate:		15.50%		18.00%
• •	ed Net Direct Employer Cont. Rate: ************************************	****	14.01% ***********	*****	15.66%

Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2008: 13.75%

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: 71/2% (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

perioa.

Changes in Methods and Assumptions: The actuarial asset valuation method was changed from 2-year smoothing of

realized and unrealized capital gains to 5-year smoothing of all earnings above or below the valuation interest rate. Family and marriage statistics were changed, as well as, the vesting election percentage and the disability mortality table.

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 3,534 active contributing members in the system of whom 1,600 have vested retirement benefits; in addition, there are 111 participants in the Deferred Retirement Option Plan (DROP); 1,477 former system members or their beneficiaries are receiving retirement benefits. An additional 301 members have contributions remaining on deposit with the system; of this number, 52 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 \$963,805,222 as of June 30, 2006. Net investment income for fiscal 2006 measured on a market value basis amounted to \$104,769,942. Contributions to the system for fiscal 2006 totaled \$54,722,535; benefits and expenses amounted to \$44,187,179.

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-six through thirty-nine. In the aggregate the assumptions represent our "best estimate" of future long-term experience for the fund. For the fiscal 2006 valuation several assumptions were adjusted to reflect recent plan and general population experience and trends. The percentage of eligible persons who terminate employment and elect deferred retirement benefits in lieu of a refund of contributions was changed from 80% to 70% based on recent plan experience. Disabled lives mortality was changed from 175% of the 1971 Group Annuity Mortality Table to the RP-2000 Disabled Lives Mortality Table. In addition, family composition statistics were updated to reflect information developed in the 2000 U. S. Census. Both the new assumptions and those used for the prior year are listed in the Assumption Section of the report. The effect of the change in assumptions was to decrease the normal cost by \$273,796, or 0.19% of payroll and to reduce the amortization payments on the UAL by \$324,017, or 0.22% of payroll.

In addition to the above changes in assumptions, the actuarial asset valuation method was changed from a two year smoothing of realized and unrealized capital gains and losses to a five year smoothing of all investment returns above or below the current valuation interest rate. The effect of this change was to reduce the actuarial value of assets by \$10,845,861. The resulting amortization of the additional unfunded accrued liability is \$1,185,061 or 0.80% of projected payroll.

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 492 provides for compliance with the Internal Revenue Code. The term "actuarial assumptions" is defined to mean the calculations used by an actuary engaged annually by the board to calculate the amounts necessary to fund the members' annuities. The definition of "actuarial equivalent" is amended to mean the amount required to fund the member's annuity based upon the calculations of the actuary on the basis of mortality tables approved by the board of trustees and regular interest at a rate fixed by the board of trustees. The terms "years of service" and "years of creditable service" are defined to mean the number of twelve-month periods a member has which are creditable toward receiving retirement benefits from the retirement system. The term "years of membership service" is defined to mean the number of twelve-month periods a member has served while a member of the retirement system. By virtue of this act, no individual under the age of eighteen will be allowed to become a member of this retirement system. This act provides for the acceptance of direct rollovers from other qualified retirement plans for the purchase of service credits at the accrual rate established by the system actuary, subject to the limitations of Section 415(n) of the Internal Revenue Code of This act provides for R.S. 11:2271, which outlines the tax qualification 1986, as amended. requirements of the Internal Revenue Code.

Act 507 provides for interest on the repayment of contributions to be calculated at the system's then currently assumed actuarial valuation rate of interest, compounded annually.

Act 562 prohibits individuals who are receiving disability retirement benefits from a public retirement system from becoming members of the Firefighters' Retirement System.

Act 566 permits individuals who become eligible to participate in the Deferred Retirement Option Plan (DROP) to make an irrevocable written election to waive their rights as set forth in Article X, Section 29 of the Louisiana Constitution as it relates to the interest earned by their DROP account. After these individuals terminate their employment in this system, their DROP account balance will earn interest at a rate equal to the percentage rate of return of the system's investment portfolio, less the cost of merger notes as certified by the actuary in his yearly valuation report, less the cost of administering the DROP to be determined annually by the board of trustees. These individuals will be required to expressly acknowledge that their account will be debited in the event the system's investment portfolio experiences a negative earnings rate.

Act 588 extends the deadline whereby retired members or Deferred Retirement Option Plan participants can convert from a service retirement to a service connected disability retirement from July 1, 2006 to July 1, 2011. The requirement that the Public Retirement Systems' Actuarial Committee publish reports as part of the actuarial valuations of the system on the impact of all such conversions occurring between July 1, 2001 and July 1, 2006 is also extended to all such conversions occurring between July 1, 2006 and July 1, 2011.

Act 678 provides that any employee of a state or statewide retirement system who has not retired, whose participation in the Deferred Retirement Option Plan of that system was interrupted or ceased upon their being terminated due to a reduction-in-force necessitated by Hurricane Katrina or Hurricane Rita or both, will have the time period applicable to their plan participation adjusted upon their reemployment and resumption of membership in the retirement system to which they belonged before being terminated. However, in no case will this statute apply to anyone who becomes reemployed more than one year after being furloughed or terminated, whichever occurs first, or to anyone reemployed on or after December 31, 2006.

Act 682 limits who an Option 4 benefit can be paid to, to the member, the member's spouse, the member's permanently mentally or physically disabled child or children, or the member's dependent minor child or children.

## 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.

	Actuarial Value	<u>Market Value</u>
1997	8.5% *	14.7%
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%

- \* 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 2-year smoothing of recognizing realized and unrealized capital gains (losses) on all securities. All prior year returns were based on valuation of common stock at market value and fixed income securities at amortized cost.
- \*\* 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. 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. In addition, the transition from the prior smoothing method is captured in the calculation of the actuarial rate of return for fiscal 2006. During 2006, the fund earned \$25,864,610 of dividends, interest and other recurring income. In addition, the Fund had net realized and unrealized capital gains on investments of \$83,259,479. This was partially offset by \$4,354,147 of investment expense. The geometric mean of the market value rates of return measured over the last ten years was 6.7%.

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. 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 6.0%. For fiscal 2006 the system experienced net actuarial investment earnings of \$30,569,026 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 \$3,340,090 or 2.26% of payroll, in fiscal 2007.

## PLAN DEMOGRAPHICS AND LIABILITY EXPERIENCE

A reconciliation of the census for the system is given in Exhibit X. The system's active contributing membership was essentially stable during the fiscal year with a population increase of 2 members. The number of retirees and beneficiaries receiving benefits from the system increased by 43. The number of DROP participants increased by 8.

Over the last five years active membership has increased by 277 members; over the same period the number of retirees increased by 247. 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 decrease in the percentage of members with service less than fifteen years and the corresponding increase 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 by \$1,492,060, the normal cost percentage decreased by 0.02% of payroll.

Plan liability experience for fiscal 2006 was slightly unfavorable. Salary increase rates at most durations were somewhat above projections. Actual retirements and DROP entries were slightly above projections. Both of these factors increased costs. Withdrawals significantly exceeded projections. Disabilities were slightly below projections. Actual retiree deaths were above projections. These factors tend to reduce costs. Plan liability losses totaled \$525,295. These losses increased the interest-adjusted amortization payments on the system's unfunded accrued liability by \$57,395, or 0.04% of payroll, in fiscal 2007. In addition to the general liability losses, an additional loss of \$12,495,729 was generated by a COLA granted in fiscal 2006. The interest-adjusted amortization payment for the COLA liability was \$1,365,332 or 0.92% 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 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 2006 contributions totaled \$3,044,474 more than required; the interest-adjusted amortization payment on the contribution

surplus for fiscal 2006 is \$332,651 or 0.23% of payroll. In addition, for fiscal 2007 the net effect of the change in payroll on amortization costs was to reduce such costs by 0.51% 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.

Normal Cost for Fiscal 2006 Cost of Demographic and Salary Changes Cost of Changes in Assumptions Normal Cost Accrual Rate for Fiscal 2007	\$ \$ \$	Dollars 33,965,240 1,492,060 (273,796) 35,183,504	Percentage of Payroll 24.04% (0.02%) (0.19%) 23.83%
UAL Payments for Fiscal 2006 Change due to change in payroll	\$	16,901,410 N/A	11.96% (0.51%)
Additional Amortization Expenses for Fiscal 2007: Assumption & Method Loss (Gain) Asset Loss (Gain) Contribution Loss (Gain) Liability Loss (Gain) Net Amortization Expense (Credit) for Fiscal 2007	\$ \$ \$ \$	861,044 (3,340,090) (332,651) 1,422,727 (1,388,970)	0.58% (2.26%) (0.22%) <u>0.96%</u> (0.94%)
Estimated Administrative Cost for Fiscal 2007	\$	743,205	0.50%
Total Normal Cost & Amortization Payments	\$	51,439,150	34.84%

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The normal cost for fiscal 2007 as of July 1, 2006 is \$33,933,985. The amortization payments on the system's unfunded actuarial accrued liability as of July 1, 2006 total \$14,961,526. 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 2007 is \$51,439,150. We project that employee contributions will total \$11,810,487 for the fiscal year. This leaves \$39,628,663 to be funded from direct employer contributions and insurance premium taxes. We estimate insurance premium taxes of \$18,946,928 will be paid to the system in fiscal 2007. Hence, the total actuarially required net direct employer contribution for fiscal 2007 amounts to \$20,681,735, or 14.01% of payroll.

Since actual employer contributions for fiscal 2007 are 15.50% of payroll, we estimate the effect of the contribution surplus will be to reduce required contributions in fiscal 2008 by 0.16% 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 13.75% for fiscal 2008.

## COST OF LIVING INCREASES

During fiscal 2006 the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 4.32%. Cost of living provisions for the system are detailed in R.S. 11:2260A(7) and

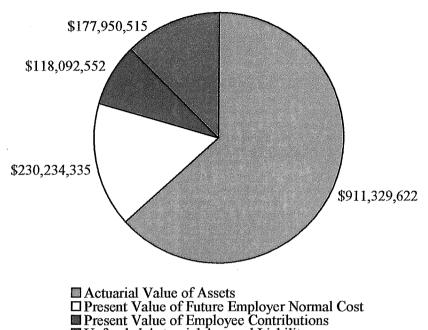
R.S. 11:246. The former statute allows the board to use interest earnings in excess of the normal requirements to grant annual cost of living increases of 3% of each retiree's current benefit. R.S. 11:246 provides cost of living increases to retirees and beneficiaries over the age of 65 equal to 2% of 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×(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 2006 the plan has met the necessary target ratio and earned sufficient investment earnings to grant a cost of living increase. For fiscal 2006, the fund earned \$19,723,165 in excess investment earnings.

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

COLA Description	Annual <u>Increase in Benefits</u>	Present Value <u>Of Increase</u>	Contribution Cost as a % or Payroll
3% to all allowable pensioners 2% to pensioners over age 65	\$ 1,148,660	\$ 11,670,165	0.86%
	\$ 204,695	\$ 1,751,330	0.13%

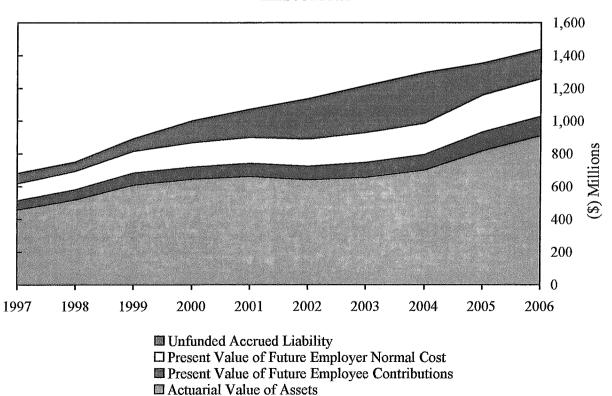
There is insufficient information available on the system's database to provide meaningful estimates of the costs associated with awarding the cost of living increase detailed in R.S. 11:241.

# **Components of Present Value of Future Benefits** June 30, 2006

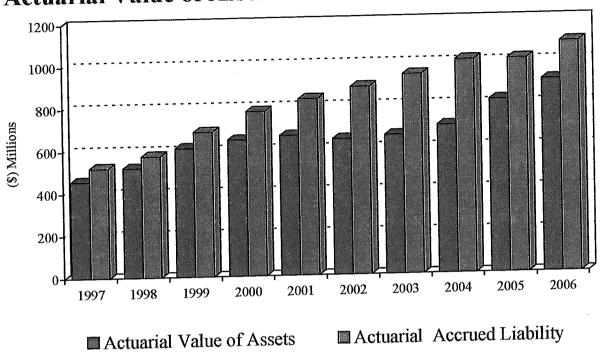


# ■ Unfunded Actuarial Accrued Liability

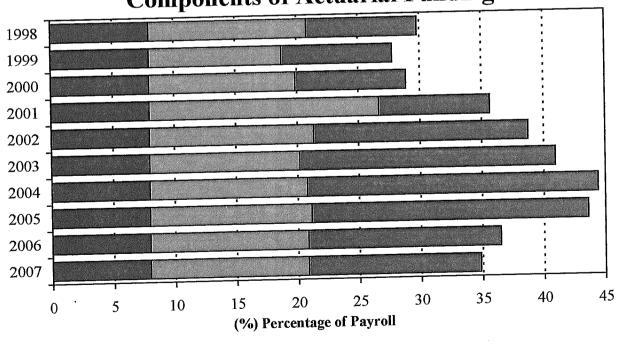
# **Components of Present Value of Future Benefits** Historical



# Actuarial Value of Assets vs. Actuarial Accrued Liability

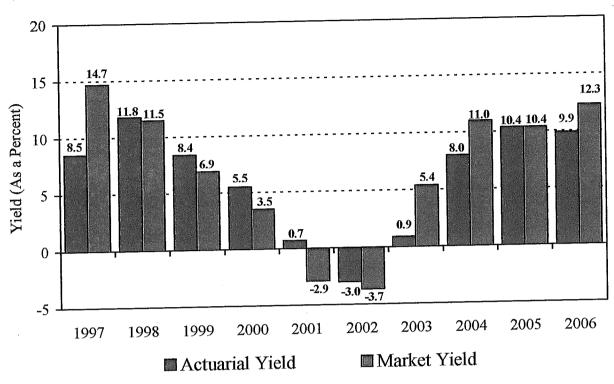




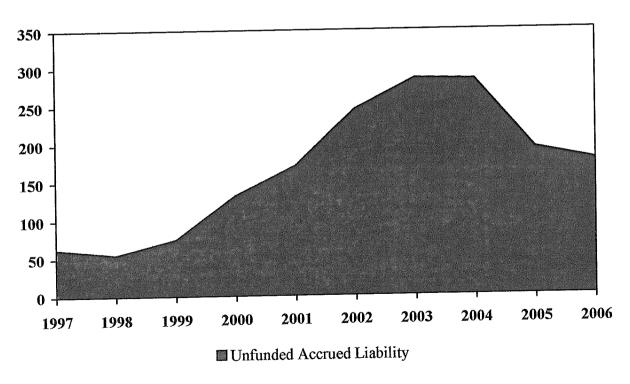


■ Employee Contributions ■ Required Tax Contributions ■ Required Net Direct Employer Contributions

# **Historical Asset Yields**



# **Unfunded Accrued Liability**

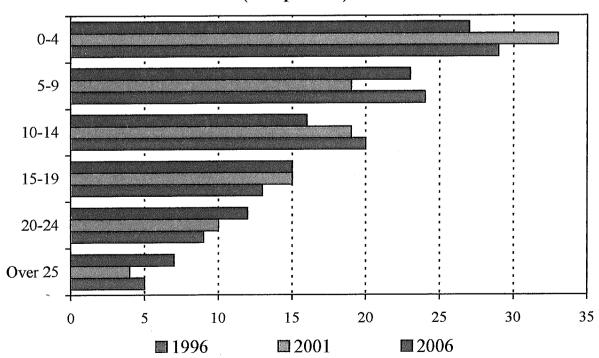


G. S. CURRAN & COMPANY, LTD.

Active – Census By Age

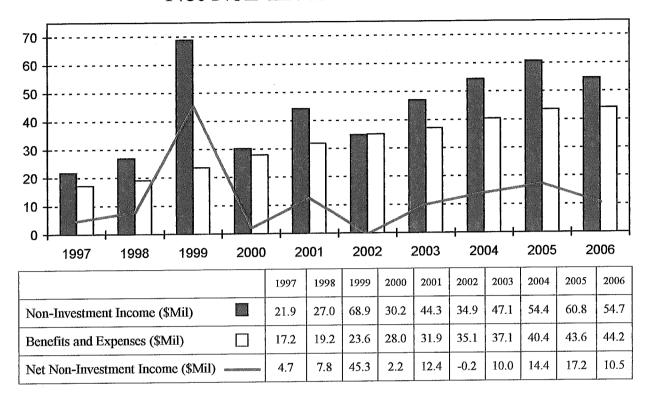
(as a percent) Under 30 31-40 41-50 51-60 61-70 Over 70 0 5 10 15 20 25 30 35 40 45 50 **1996 2001 2006** 

Active – Census By Service (as a percent)

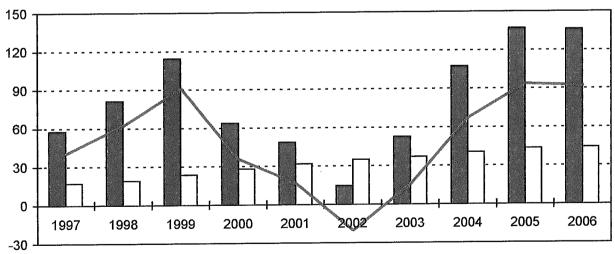


G. S. CURRAN & COMPANY, LTD.

# **Net Non-Investment Income**



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



		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total Income (\$Mil)		57.7	81.4	114.5	63.8	48.7	14.7	52.6	107.6	137.2	136.3
Benefits and Expenses (\$Mil)		17.2	19.2	23.6	28.0	31.9	35.1	37.1	40.4	43.6	44.2
Net Change in AVA (\$Mil)	AND REAL PROPERTY OF THE PERSON NAMED IN	40.5	62.2	90.9	35.8	16.8	-20.4	15.5	67.2	93.6	92.1

# EXHIBIT I ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1. 2. 3. 4. 5.	Normal Cost of Retirement Benefits  Normal Cost of Death Benefits  Normal Cost of Disability Benefits  Normal Cost of Deferred Retirement Benefits  Normal Cost of Contribution Refunds	\$ \$ \$ \$	29,491,842 1,364,001 1,050,426 1,019,166 1,008,550
6.	TOTAL Normal Cost as of July 1, 2006 (1+2+3+4+5)	\$	33,933,985
7.	Amortization of Unfunded Accrued Liability of \$177,950,515	\$	14,961,526
8.	TOTAL Normal Cost & Amortization Payments (6+7)	\$	48,895,511
9.	Normal Cost and Amortization Payments Interest Adjusted for Midyear Payment	\$	50,695,945
10.	Estimated Administrative Cost for Fiscal 2007	\$	743,205
11.	TOTAL Administrative and Interest Adjusted Actuarial Costs (9+10)	\$	51,439,150
12.	Projected Employee Contributions for Fiscal 2007	\$	11,810,487
13.	GROSS Employer Actuarially Required Contribution to be funded by direct employer contributions and Insurance Premium Taxes for Fiscal 2007 (11 - 12)	\$	39,628,663
14.	Expected Insurance Premium Taxes due in Fiscal 2007	\$	18,946,928
15.	Net Direct Actuarially Required Employer Contributions for Fiscal 2007 (13-14)	\$	20,681,735
16.	Projected Payroll For Contributing Members July 1, 2006 through June 30, 2007	\$1	47,631,087
17.	Employer's Net Direct Actuarially Required Contribution as a % of Projected Payroll for Fiscal 2007 (15 ÷ 16)		14.01%
18.	Actual Net Direct Employer Contribution Rate for Fiscal 2007		15.50%
19.	Contribution Gain (Loss) as a Percentage of Payroll (18 – 17)		1.49%
20.	Adjustment to Following Year Payment for Contribution Gain (Loss)		0.16%
21.	Recommended Net Direct Employer Contribution Rate for Fiscal 2008 (17 – 20) (Rounded to nearest 0.25%)		13.75%

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

# Present Value of Future Benefits for Active Members:

Retirement Benefits	983,750,937
Present Value of Future Benefits for Terminated Members:	
Terminated Vested Members Due Benefits at Retirement \$ 7,395,364 Terminated Members with Reciprocals	
Due Benefits at Retirement	
TOTAL Present Value of Future Benefits for Terminated Members\$	8,178,657
Present Value of Future Benefits for Retirees:	
Regular Retirees	
Disability Retirees	
Survivors & Widows	
Retiree DROP Account Balance	
IBO Retirees' Account Balance	
TOTAL Present Value of Future Benefits for Retirees & Survivors\$	445,677,430
TOTAL Present Value of Future Benefits \$ 1	1,437,607,024

# **EXHIBIT III**ACTUARIAL VALUE OF ASSETS

## Current Assets:

Cash & Cash Equivalents in Banks \$ 4,511,903	;	
Contributions Receivable from Members	Ļ	
Contributions Receivable from Employers	)	
Accrued Interest on Investments	,	
Prepaid Expenses		
TOTAL CURRENT ASSETS	\$	10,499,661
Property, Plant and Equipment (Net of accumulated depreciation)	\$	1,770,724
Investments:		
Common Stock		
Alternative Investments		
Corporate Bonds		
U. S. Government Securities		•
Cash Equivalents 17,141,447		
Adjustment for Deferral of Capital Losses (Gains) (52,475,600)	)	
TOTAL INVESTMENTS	\$	902,060,616
MERGER NOTES	\$	6,141,859
TOTAL ASSETS	\$	920,472,860
Current Liabilities:		
Purchased Investments Payable \$ 8,947,526		
Accounts Payable		
TOTAL CURRENT LIABILITIES	\$	9,143,238
ACTUARIAL VALUE OF ASSETS	\$	911,329,622

# EXHIBIT IV PRESENT VALUE OF FUTURE CONTRIBUTIONS

Employee Contributions to the Annuity Savings Fund \$ Employer Normal Contributions to the Pension Accumulation Fund Employer Payments on the Unfunded Actuarial Accrued Liability	118,092,552 230,234,335 177,950,515
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS\$	526,277,402
EXHIBIT V - SCHEDULE A ACTUARIAL ACCRUED LIABILITIES	
LIABILITY FOR ACTIVE MEMBERS  Accrued Liability for Retirement Benefits	635,424,050
LIABILITY FOR TERMINATED MEMBERS \$	8,178,657
LIABILITY FOR RETIREES AND SURVIVORS\$	445,677,430
TOTAL ACTUARIAL ACCRUED LIABILITY\$1	,089,280,137
ACTUARIAL VALUE OF ASSETS\$	911,329,622
UNFUNDED ACTUARIAL ACCRUED LIABILITY\$	177,950,515
EXHIBIT V - SCHEDULE B CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY	
Prior Year Unfunded Accrued Liability\$	193,661,707
Interest on Unfunded Accrued Liability \$ 14,524,628 Normal Cost for Prior Year \$ 32,758,986 Interest on the Normal Cost \$ 2,456,924 Normal Cost for Merged Systems with Accrued Interest \$ 0 Administrative Expenses \$ 707,493 Interest on Expenses \$ 26,051 TOTAL Increases to Unfunded Accrued Liability \$	50,474,082
Required Contributions for Prior Year with interest \$53,473,209 Contribution Excess (Shortfall) with accrued interest 3,044,473 Cost of Living Adjustment Gains (Losses) (12,495,729) Assumption & Method Change Gains (Losses) (7,880,410) Investment Gains (Losses) 30,569,026 Liability Experience Gains (Losses) (525,295) TOTAL Decreases to Unfunded Accrued Liability \$	66,185,274
CURRENT YEAR UNFUNDED ACCRUED LIABILITY\$	177,950,515
COLUMN TERM ON CHUED MOCKOLD DIADIDIT	111,730,313

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

FISCAL YEAR		AMORT. PERIOD	INITIAL BALANCE	YEARS REMAINING	REMAINING BALANCE	AMORT. PAYMENTS
1993	Merger Loss (Gain)	30	13,485,002		10,624,896	1,047,664
1995	Merger Loss (Gain)	30	41,779,611	19	34,844,987	3,254,713
1996	Merger Loss (Gain)	30	1,772,399		1,515,106	138,251
	· · · · · · · · · · · · · · · · · · ·					ŕ
1997	Merger Loss (Gain)	30	890,324		778,395	69,533
1998	Merger Loss (Gain)	30	1,602,435	22	1,430,103	125,299
1999	Merger Loss (Gain)	30	14,104,876	23	12,827,506	1,104,183
2001	Merger Loss (Gain)	30	3,117,590	25	2,930,946	244,593
* 2002	Cumulative Non-Merger Base	es 27	175,578,584	23	165,303,779	14,229,238
2003	Contribution Loss (Gain)	15	2,678,010	12	2,339,296	281,320
2003	Assumption Loss (Gain)	15	(3,248,077)	12	(2,837,260)	(341,205)
2003	Experience Loss (Gain)	15	44,477,780	12	38,852,239	4,672,310
2004	Contribution Loss (Gain)	15	2,129,874	13	1,957,590	224,102
2004	Experience Loss (Gain)	15	1,570,785	13	1,443,726	165,275
2005	Experience Loss (Gain)	15	(24,922,321)	14	(23,968,114)	(2,626,401)
2005	Assumption Loss (Gain)	15	(57,207,831)	14	(55,017,501)	(6,028,760)
2005	Contribution Loss (Gain)	15	(2,457,193)	14	(2,363,113)	(258,948)
2006	Experience Loss (Gain)	15	(17,548,002)	15	(17,548,002)	(1,849,269)
2006	Assumption Loss (Gain)	15	7,880,410	15	7,880,410	830,465
2006	Contribution Loss (Gain)	15	(3,044,474)	15	(3,044,474)	(320,837)
TOT	ΓAL Unfunded Actuarial Accr	ued Liabil	ity	\$	177,950,515	
T	OTAL Fiscal 2007 Amortization	on Pavme	nts			\$14,961,526
1	OTAL PISCAL 2007 AUDOLUZAU	our ayinc	1117)			Ψ1-1,701,320

<sup>\*</sup> 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, 2005)	\$819,240,156
Income:	
Regular Member Contributions\$ 11,055,677Regular Employer Contributions25,257,458Insurance Premium Taxes18,197,358Irregular Contributions212,042TOTAL CONTRIBUTIONS	\$ 54,722,535
Interest and Dividends 25,159,379 Rent Income 28,391 Net Appreciation of Fair Value of Investments 83,259,479 Merger Interest 462,735 Securities Lending 214,105 Investment Expenses (4,354,147) Adjustment for Actuarial Smoothing (23,215,832) TOTAL INVESTMENT INCOME	\$ 81,554,110
Expenses:	
Retirement and Survivor Benefits\$ 35,214,529DROP Disbursements4,295,428Disability Benefits2,982,855Refunds of Contributions840,612Administrative Expenses707,493Funds Transferred to Another System146,262	
TOTAL Expenses	\$ 44,187,179
Net Income for Fiscal 2006 (Income - Expenses)	\$ 92,089,466
Actuarial Value of Assets (June 30, 2006)	\$911,329,622

# EXHIBIT VII FUND BALANCE

# Present Assets of the System Creditable to:

Annuity Savings Fund	\$	98,237,619
Annuity Reserve Fund		405,559,726
Pension Accumulation Fund		408,304,774
Deferred Retirement Option Plan Account		50,930,904
Initial Benefit Option Plan Account		772,199
NET MARKET VALUE OF ASSETS	ď	0.62 005 222
NEI MARKEI VALUE OF ASSEIS	Ф	963,805,222
ADJUSTMENT FOR ACTUARIAL SMOOTHING		(52,475,600)
NET ACTUARIAL VALUE OF ASSETS	\$	911,329,622

# EXHIBIT VIII PENSION BENEFIT OBLIGATION

Present Value of Credited Projected Payable to Current Employees	\$	601,442,050
Present Value of Benefits Payable to Terminated Employees		8,178,657
Present Value of Benefits Payable to Current Retirees and Beneficiaries		445,677,430
TOTAL PENSION BENEFIT OBLIGATION	\$ .	1,055,298,137

# 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:		0.43%
Adjustments in Funded Ratio Due to Mergers or Changes in Assi	umption(s):	
Changes for Fiscal 1987	(0.72%)	
Changes for Fiscal 1988	` '	
Changes for Fiscal 1989	(3.24%)	
Changes for Fiscal 1992	(3.80%) 1.34%	
Changes for Fiscal 1993		
Changes for Fiscal 1994	(1.25%)	
Changes for Fiscal 1995	(0.03%)	
Changes for Fiscal 1996	(1.73%)	
Changes for Fiscal 1997	(16.29%)	
Changes for Fiscal 1998	(3.65%)	
	(0.27%)	
Changes for Fiscal 1999	(0.97%)	
	(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%)	(00.010/)
TOTAL Adjustments	•••••••	(29.91%)
Amortization of Adjustments in Funded Ratio over 30 years:		
Changes for Fiscal 1987	0.46%	
Changes for Fiscal 1988	1.94%	
Changes for Fiscal 1989	2.15%	
Changes for Fiscal 1992	(0.63%)	
Changes for Fiscal 1993	0.54%	
Changes for Fiscal 1994	0.01%	
Changes for Fiscal 1995	0.63%	
Changes for Fiscal 1996	5.43%	
Changes for Fiscal 1997	1.09%	
Changes for Fiscal 1998		
Changes for Fiscal 1999	0.07%	
	0.23%	
Changes for Fiscal 2000	0.59%	
Changes for Fiscal 2001	0.04%	
Changes for Fiscal 2003	(0.05%)	
Changes for Fiscal 2005	(0.14%)	
Changes for Fiscal 2006TOTAL Amortization of Adjustments	0.00%	10.260/
		12.36%
Target Ratio for Current Fiscal Year		82.23%
Actuarial Value of Assets Divided by PBO as of Fiscal 2006		86.36%

# EXHIBIT X CENSUS DATA

		Terminated			and the Annales Control of the Annales Advantage
	Active	with Funds on Deposit	DROP	Retired	Total
Number of members as of	7 ACCIVE	on Deposit	DROI	Retired	1 Otal
June 30, 2005	3,532	234	103	1,434	5,303
Additions to Census					
Initial membership	226	24			250
Death of another member	(2)		(1)	3	
Omitted in error last year				1	1
Change in Status during Year					
Actives terminating service	(79)	79			
Actives who retired	(37)			37	
Actives entering DROP	(41)		41		
Term. members rehired	8	(8)			
Term. members who retire		(2)		2	
Retirees who are rehired	1			(1)	
Refunded who are rehired	5	3			8
DROP participants retiring			(28)	28	
DROP returned to work	4		(4)		
Omitted in error last year					
Eliminated from Census					
Refund of contributions	(77)	(29)			(106)
Deaths	(3)			(13)	(16)
Included in error last year	(2)				(2)
Adjustment for multiple records	(1)		,		(1)
Suspended Benefits				(14)	(14)
Number of members as of					
June 30, 2006	3,534	301	111	1,477	5,423

#### ACTIVES CENSUS BY AGE:

<b>3</b>	Number	Number	Total Number	Average	Total
Age	Male	Female	Number	Salary	Salary
16 - 20	28	1	29	21,570	625,539
21 - 25	318	15	<i>333</i>	26,510	8,827,840
26 - 30	55 <b>9</b>	22	581	30,960	17,987,704
31 - 35	<i>596</i>	31	627	35,510	22,264,917
36 - 40	<i>553</i>	26	<i>579</i>	40,042	23,184,397
41 - 45	5 <b>9</b> 5	32	627	45,375	28,450,049
46 - 50	464	32	496	50,676	25,135,190
5 <b>1 -</b> 55	186	11	197	51,828	10,210,040
<i>56 - 60</i>	46	3	49	54,811	2,685,738
61 - 65	12	1	13	49,584	644,591
66 - 70	3	0	3	53,245	159,735
TOTAL	3,360	174	3,534	39,665	140,175,740

THE ACTIVE CENSUS INCLUDES 1600 ACTIVES WITH VESTED BENEFITS, INCLUDING 39 ACTIVE FORMER DROP PARTICIPANTS. THE 111 CURRENT DROP PARTICIPANTS ARE EXCLUDED.

#### DROP PARTICIPANTS

Age	<i>Number</i> <i>Male</i>	<i>Number</i> Female	Total Number	Average Benefit	Total Benefit
41 - 45	2	1	3	46,298	138,893
46 - 50	33	2	<i>35</i>	49,453	1,730,856
5 <b>1</b> - 55	50	0	50	45,390	2,269,498
<i>56 - 60</i>	21	0	21	44,545	935,446
61 - 65	2	0	2	48,144	96,288
TOTAL	108	3	111	46,585	5,170,981

#### TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Age	Number Male	<i>Number</i> Female	Total Number	Average Benefit	Total Benefit
31 - 35	1	o	1	14,779	14,779
36 - 40	11	. 1	12	20,228	242,732
41 - 45	17	2	19	20,730	393,877
46 - 50	16	0	16	23,982	383,711
<b>51 - 55</b>	2	1	3	20,940	62,820
<i>56 - 60</i>	0	1	1	24,196	24,196
TOTAL	47	5	<i>52</i>	21,579	1,122,115

#### TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:

Contribu	tio.	ns Ranging		Total
From		To	Number	${\it Contributions}$
0	_	99	<i>36</i>	1,613
100	_	499	66	18,033
500	_	999	21	14,702
1000	_	1999	3 <i>2</i>	45,374
2000	_	4999	43	138,087
5000	_	9999	26	187,132
10000	-	19999	22	289,118
20000	-	99999	3	89,234
		TOTAL	249	783,293

## REGULAR RETIREES:

	Number	Number	Total	Average	<b>Total</b>
Age	Male	<b>Female</b>	Number	Benefit	Benefit
41 - 45	1	0	1	36,393	36,393
46 - 50	41	1	42	36,770	1,544,357
51 <b>-</b> 55	153	5	158	<i>37,806</i>	5,973,391
56 <b>-</b> 60	293	3	296	34,439	10,193,996
61 - 65	189	3	192	32,184	6,179,377
66 - 70	163	2	165	29,480	4,864,180
71 - 75	91	0	91	24,628	2,241,118
76 - 80	93	0	93	22,891	2,128,893
81 - 85	38	0	38	21,428	814,260
86 - 90	3	0	3	16,574	49,722
91 - 99	3	0	3	20,944	62,832
TOTAL	1,068	14	1,082	31,505	34,088,519

## DISABILITY RETIREES:

•	Number	Number	<b>Total</b>	Average	<b>Total</b>
Age	Male	<b>Female</b>	Number	Benefit	Benefit
26 - 30	1	0	1	13,487	13,487
31 - 35	1	0	1	7,490	7,490
36 - 40	7	0	7	13,283	92,984
41 - 45	10	<i>3</i>	13	22,276	289,586
46 - 50	19	<i>3</i>	22	18,041	396,910
5 <b>1 -</b> 55	29	1	30	17,968	539,049
<i>56 - 60</i>	<b>17</b>	1	18	19,271	346,882
61 - 65	15	0	15	14,753	221,302
66 - 70	10	0	10	10,798	107,978
71 - 75	9	0	9	12,485	112,366
76 - 80	2	0	2	8,136	16,271
TOTAL	120	8	128	16,752	2,144,305

#### SURVIVORS:

	Number	Number	Tota1	Average	Tota1
Age	Male	Female	Number	Benefit	Benefit
0 - 25	7	6	13	5,563	72,320
31 - 35	0	3	3	10,205	30,615
36 - 40	0	2	2	6,877	13,754
41 - 45	0	<i>5</i>	5	14,403	72,017
46 - 50	0	9	9	19,065	171,587
51 <b>-</b> 55	1	18	19	19,978	379,585
56 - 60	1	21	22	12,485	274,667
61 - 65	1	12	13	12,168	158,186
66 - 70	0	34	3 <b>4</b>	16,790	570,868
71 - 75	0	3 <i>9</i>	<i>39</i>	13,072	509,823
76 - 80	1	5 <i>6</i>	<i>57</i>	11,891	677,769
81 - 85	0	23	23	11,237	258,443
86 - 90	0	21	21	8,847	185,785
91 - 99	0	7	7	5,911	41,376
TOTAL	11	256	267	12,797	3,416,795

ACTIVE MEMBERS:

Completed Years of Service

н	£	9 - 5	10-14	15-19	20-24	25-29	30&Over	Total
i								29
20		14						333
72		261	10					581
37		286	167	10				627
20		128	211	156	10			579
89	11 5	75	98	197	198	16		627
o,		33	36	128	175	97	1	496
Н		15	18	43	37	58	22	197
		1	12		7	12	19	49
		7	7	m		1	7.	13
					7	н	1	E
								0
217	132 166	815	554	537	426	185	48	3534

AVERAGE ANNUAL SALARY OF ACTIVE MEMBERS:

Completed Years of Service

tained Ages	0	1	7	m	4	5-9	10-14	15-19	20-24	25-29	30&Over	Average
0 - 20	21,682	21,033										21.570
31 - 25	21,673	26,668	28,085	29,671	30,425	32,180						26 510
36 - 30	22,214	25,118	28,916	29,854	30,541	34,981	44,053					096'08
31 - 35	24,683	24,909	30,011	32,163	31,627	35,680	41,358	44,236				35,510
36 - 40	22,182	29,452	29,466	32,078	30,113	37,079	41,397	44,979	53,838			40.042
11 - 45	25,805	28,140	31,309	33,257	30,704	37,019	41,644	45, 791	52,344	58,336		45,375
16 - 50	22,337	30,462	32,708	33,942	55,802	37,871	43,852	46,502	54,846	59,979	65,200	50.676
51 - 55			49,647	28,131	31,754	39,417	40,229	47,323	51,066	60,312	60,661	51.828
26 - 60						36,900	38,991	•	36,533	58,756	68,063	54.811
51 - 65						46,806	41,886	42,050		41,233	59,965	49,584
26 - 70									54,890	44,024	60,821	53,245
71 & Over												0
Average	22,375	26,027	29,227	30,808	31,202	35,926	41,548	45,797	53,117	59,675	63,617	39,665

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

	Total	0 113 116 116 0	52
	1		0
	25-29 30£0ver		0
<b>.</b>	20-24	н	н
) 	15-19	13	12
rears outre vertrement brigability	10-14	16	16
THE VER	6 -2	m <b>(</b> 0	o,
87007	4	н	1
	m	W	m,
	7	m a	ſΩ
	н		0
	0	<b>4</b> H	ĸ٦
	Attained Ages	0 - 30 31 - 35 36 - 40 41 - 45 46 - 50 51 - 55 56 - 60	Totals

Years Until Retirement Eligibility

0	н	u	m	4	5-9	10-14	5- 9 10-14 15-19	20-24	25-29	25-29 30&Over	Average Benefit
26,847	27 29	27,753	32, 550	23,337	29,939	19,004	20,228	14,779			14,779 20,228 20,238 20,330 23,982 20,940 24,190

SERVICE RETIREES:

Completed Years Since Retirement

10-14 15-19 20-24 25-29 30£Over Total		27 10 2 1 296	18 13	41 22 13 2	24 25 15 14	22 18 16 29	3 10 8 15	7	1	155 118 93 53 62 1082
5-9 16	1 29	145	99	31	4	Ŋ	<b>C</b> 1			283
4	24.3	25	00	N						
E	19	26	7	7						57
7	30	23	7	r.	1					74
1	13	25	4	7						65
0	14	12	4	03						09
Attained Ages	0 - 50 51 - 55	26 - 60	61 - 65	99 - 20	5/ - 7/	76 - 80	81 - 85	06 - 90	91 & Over	Totals

AVERAGE ANNUAL BENEFITS PAYABLE TO SERVICE RETIREES:

Completed Years Since Retirement

Attained Ages	0	н	. <b>14</b>	m	4		10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 50	37,774	39,394	33,282	40,011	28,675	27,458						292 98
51 - 55	40,777	39,951	40,424	43,982	32,718	33,499	24,610					307705
26 - 60	33,838	37,143	34,541	40,482	35,721	34,879	28,022	25,008	19,493	16.272		34 430
61 - 65	20,498	48,480	34,167	34,141	32,572	36,290	32,096	22,219	21,801	1		37 184
02 - 99	40,560	33,276	38,889	30,585	29,082	32,025	35,717	29,182	19,115	15,528	23.820	29.480
71 - 75			16,494			35,932	31,846	33,486	23,524	15,810	14,087	24.628
26 - 80						21,853	29,433	34,606	28,233	17,804	12,998	22,891
81 - 85						29,138		37,470	27,984	21,861	12,589	21,428
06 - 98							13,851		27,512		8,360	16,574
91 & Over									23,856		15,120	20,944
Average	37,329	39,182	36,804	40,663	33,597	34,472	31,966	29,864	23,594	17,265	13.454	31.505

DISABILITY RETIREES:

Attained Ages	0	н	8	m	4	5- 6	10-14	15-19	20-24	25-29	25-29 30£0ver	Total
31 - 30 31 - 35 36 - 40 41 - 45 51 - 50 51 - 55 61 - 65 71 - 75 71 - 75 81 & Over	νη <b>ν</b> η	аман	наа	нннин	H 4 4	<b>ማጠ</b> ማ መመመ ተ	нниомн н	ייז מטורו ייז ריו	0 कि मा म	н ничн	нам	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Totals	v	80	гU		ſΩ	27	19	21	14	10	9	128

# AVERAGE ANNUAL BENEFITS PAYABLE TO DISABILITY RETIREES:

tained Ages	0	7	8	m	4	5-9	10-14	15-19	20-24	25-29	30&Over	Average Benefit
0 - 30				13,487								13 487
11 - 35				7,490								7.490
16 - 40		10,707		24,320	5,808	14,713	12,015					13.283
1 - 45	24,566	34,302		20,596	16,520	15,133	13,949					22,276
16 - 50	24,173	26,054	22,274	24,330	23,025	11,220	14,194	14,141				18.041
t		23,727	28,234	14,757		17,655	16,638	16,285	20,397	6,075		17,968
ı			12,864			25,394	18,002	21,946	15,078			19.271
11 - 65						11,867	15,923	18,544	19,263	9,245	4,113	14,753
ŧ						7,992			18,432	12,610	5,256	10,798
1 - 75							29,248	12,849	11,615	16,177	4,483	12,485
9 - 80						4,481				11,790		8,136
1 & Over												0
Average	24,369	25,019		20,894 18,473	16,980	14,550	16,724	17,322	18,166	12,251	4,679	16,752

SURVIVING BENEFICIARIES OF FORMER MEMBERS;

Completed Years Since Retirement

Attained Ages	0	1	7	e.	4	5-9	10-14	15-19	20-24	25-29	30&Over	Total
0 - 20		н				4	٠					*
21 - 25						1	-					1 6
26 - 30						ı	•					4 6
31 - 35				Н		7	7					۰ ۵
36 - 40						н	7					) r
41 - 45						N	m					d r
46 - 50	Ŋ		7			Ŋ	7	H	8			۰ ٥
51 - 55		7	7	н	7	4	4	ı m	ı m			0.0
26 - 60	7		Н	<b>H</b>		Ŋ	80	4	н	m		22
61 - 65				н		7	7	1	m	ы	7	13
02 - 99						9	7	80	C	89	8	34
71 - 75						4	Ŋ	4	80	o,	12	3.9
76 - 80						1	Э	m	14	13	23	57
ı						7	7	ιŋ	m	7	80	23
96 - 90						Ŋ		Н	4	m	11	21
91 & Over						7		1			147	7
Totals	ы	м	m	4	1	37	35	27	. 40	46	99	267

AVERAGE ANNUAL BENEFITS PAYABLE TO SURVIVORS OF FORMER MEMBERS:

Retirement
Since
Years
Completed

Attained Ages	0	1	2	"	4	ر ا	10-14	16 10	000	, c		Average
					•		***	67-67	**	67-67	3U&Over	Benefit
0 - 20		16,668				5,029	3,371					5.183
21 - 25						2,984	12,327					7,655
20 = 30 21 = 25				,			,					0
1 40				178,471		8,225	9,968					10,205
30 - 40	·					2,472	11,282					6,877
ı						19,742	10,844					14,403
1	18,032		38,559			13,309	23,139	30,002	8,602			19.065
ı		22,243	14,689	12,483		22,535	26,713	21,875	15,105			19.978
ı	14,112		14,592			15,959	11,674	15,033	23,840	6,289		12.485
61 - 65				9,902		24,805	24,216	2,472	6,209	8,867	2,543	12.168
02 - 99						10,691	53,327	27,404	11,636	10,449	9,246	16,790
71 - 75						17,901	27,341	14,778	19,764	9,937	6,407	13,072
76 - 80						2,520	15,068	14,434	16,982	11,204	8,841	11,891
81 - 85						2,520	4,363	22,570	15,769	11,670	6,857	11,237
1 (						2,443		13,823	12,556	6,401	8,877	8,847
91 & Over						2,520		12,260			5,319	5,911
Average	16,725	20,384	22,614	8,702	0	12,639	16,259	20,133	15,541	10,109	7,880	12,797

# EXHIBIT XI YEAR-TO-YEAR COMPARISON

		Fiscal 2006		Fiscal 2005		Fiscal 2004		Fiscal 2003
Number of Active Contributing Members Number of Retirees & Survivors DROP Participants Number Terminated Due Deferred Benefits Number of Terminated Due Refund		3,534 1,477 111 52 249		3,532 1,434 103 45 189		3,431 1,379 114 42 181		3,360 1,315 120 36 143
Active Lives Payroll (excludes DROP participants)	\$	140,175,740	\$	134,313,739	\$	128,144,746	\$	121,012,780
Retiree Benefits in Payment	\$	39,649,619	\$	36,510,489	\$	34,076,169	\$	31,542,638
Market Value of Assets	\$	963,805,222	\$	848,499,924	\$	752,274,788	\$	664,570,797
Ratio of Actuarial Value of Assets to Actuarial Accrued Liability		83.66%		80.88%		71.84%		69.69%
Actuarial Accrued Liability	\$1	,089,280,137	\$1	,012,901,863	\$1	,010,016,864	\$	944,688,430
Actuarial Value of Assets	\$	911,329,622	\$	819,240,156	\$	725,615,787	\$	658,376,086
UAL (Funding Excess)	\$	177,950,515	\$	193,661,707	\$	284,401,078	\$	286,312,344
P.V. of Future Employer Normal Contributions	\$	230,234,335	\$	226,307,495	\$	192,151,099	\$	182,925,316
P.V. of Future Employee Contributions	\$	118,092,552	\$	114,703,708	\$	94,736,659	\$	90,145,420
Present Value of Future Benefits	\$1	,437,607,024	\$1	,353,913,066	\$1	,296,904,623	\$1	,217,759,166
***********	****	*****	***	******	***	*******	***	******
	F	iscal 2007	F	iscal 2006	F	iscal 2005	F	iscal 2004
Employee Contribution Rate		8.00%		8.00%		8.00%		8.00%
Required Tax Contributions as a Percentage of Projected Payroll		12.83%		12.82%		13.11%		12.77%
Actuarially Required Employer Contribution As a Percentage of Projected Payroll		14.01%		15.66%		22.51%		23.64%
Actual Employer Contribution Rate		15.50%		18.00%		24.00%		21.00%

Fiscal 2002		Fiscal 2001		Fiscal 2000		Fiscal 1999		Fiscal 1998		Fiscal 1997	
3,322 1,278 145		3,257 1,230 156		3,098 1,155 155		2,966 1,093 144		2,567 915 139	•	2,423 870 128	
30		25		18		20		20		21	
133		118		95		73		45		45	
\$ 114,422,827	\$	107,667,223	\$	100,504,497	\$	92,758,784	\$	79,171,364	\$	72,865,349	
\$ 29,610,698	\$	27,934,986	\$	25,932,694	\$	23,085,435	\$	18,177,220	\$	16,055,531	
\$ 620,860,572	\$	641,929,807	\$	645,641,501	\$	621,030,022	\$	536,826,709	\$	475,344,743	
72.33%		79.45%		82.95%		89.04%		90.44%		87.96%	
\$		834,986,462	\$	779,541,318	\$	686,029,152	\$	574,884,182	\$	520,367,341	
\$ · · · · · · · · · · · · · · · · · · ·		663,377,250	\$	646,609,069	\$	610,870,354	\$	519,924,527	\$	457,733,340	
\$ , , , , , ,		171,609,212	\$	132,932,249	\$	75,158,798	\$	54,959,655	\$	62,634,001	
\$ • •		159,311,329	\$	149,049,128	\$	133,929,737	\$	114,269,278	\$	104,451,558	
\$ · · · · ·	\$	79,024,405	\$	73,957,562	\$	73,159,070	\$	62,144,411	\$	56,921,165	
1,137,660,735		,073,322,196 *******		,002,548,008 *******	\$ ****	893,117,959 *******	\$ ***	751,297,871 *********		681,740,064	***
Fiscal 2003	· ]	Fiscal 2002	]	Fiscal 2001	]	Fiscal 2000	]	Fiscal 1999	]	Fiscal 1998	
8.00%		8.00%		8.00%		8.00%		8.00%		8.00%	
12.17%		13.31%		18.64%		11.86%		10.76%		12.80%	
20.78%		17.44%		9.00%		9.00%		9.00%		9.00%	
18.25%		9.00%		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×(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 of 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 Annual Rate of Salary Increase Rates of Retirement Rates of Termination Rates of Disability Rates of Mortality Decrease in Cost Increase in Cost Increase in Cost Decrease in Cost Increase in Cost 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.

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:

Service	<b>Factor</b>	<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:

Member's	% With	Number of	Average
<u>Age</u>	<u>Children</u>	<u>Children</u>	Age
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         Mortality Rates         Mortality Rates         Retirement Rates         DROP Entry Rates         Disability Rates           18         0.00050         0.00029         0.00000         0.00000         0.00105           19         0.00052         0.00031         0.00000         0.00000         0.00105           20         0.00054         0.00031         0.00000         0.00000         0.00105           21         0.00067         0.00031         0.00000         0.00000         0.00105           22         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         0.00038         0.00000         0.00000         0.00105           30	Age	Male Mortality	Female Mortality	Datinomant	DROD Ester	D'-1 '''
18         0.00050         0.00029         0.00000         0.00000         0.00105           19         0.00052         0.00031         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           24         0.00067         0.00031         0.00000         0.00000         0.00000           24         0.00067         0.00031         0.00000         0.00000         0.00105           25         0.00071         0.00032         0.00000         0.00000         0.0015           26         0.00078         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         0.0086         0.00038	Agu		<del>-</del>			
19		Rates	Rates	Rates	Kates	Rates
19	18	0.00050	0.00029	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           24         0.00067         0.00031         0.00000         0.00000         0.00105           25         0.00071         0.00032         0.00000         0.00000         0.00105           26         0.00078         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         0.0015           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         0.00048         0.00000         0.00000         0.00105           33         0.00091         0.00045 <td>19</td> <td>0.00052</td> <td>0.00030</td> <td></td> <td></td> <td></td>	19	0.00052	0.00030			
21         0.00057         0.00031         0.00000         0.00000         0.00105           22         0.00060         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         0.0084         0.00036         0.00000         0.00000         0.00105           30         0.0086         0.00038         0.00000         0.00000         0.00105           31         0.00088         0.00040         0.00000         0.00000         0.00105           32         0.00090         0.00045         0.00000         0.00000         0.00105           33         0.00091         0.0045         0.00000         0.00000         0.00105           34         0.00091         0.00045	20	0.00054	0.00031			
22         0.00063         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         0.00032         0.00000         0.00000         0.00105           26         0.00078         0.00032         0.00000         0.00000         0.00105           27         0.00078         0.00034         0.00000         0.00000         0.00105           28         0.00081         0.00036         0.00000         0.00000         0.00105           30         0.0086         0.0038         0.00000         0.00000         0.00105           31         0.0088         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	21	0.00057	0.00031			
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         0.00032         0.00000         0.00000         0.00105           26         0.00078         0.00032         0.00000         0.00000         0.00105           27         0.00081         0.00034         0.00000         0.00000         0.00105           28         0.00081         0.00036         0.00000         0.00000         0.00105           29         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           34         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 <td>22</td> <td>0.00060</td> <td>0.00031</td> <td></td> <td></td> <td></td>	22	0.00060	0.00031			
24         0.00067         0.00031         0.00000         0.00000         0.00001           25         0.00071         0.00031         0.00000         0.00000         0.00105           26         0.00075         0.00032         0.00000         0.00000         0.00105           27         0.00081         0.00032         0.00000         0.00000         0.00105           28         0.00081         0.00036         0.00000         0.00000         0.00105           30         0.0086         0.00038         0.00000         0.00000         0.00105           31         0.0088         0.00040         0.00000         0.00000         0.00105           32         0.00090         0.00043         0.00000         0.00000         0.00105           33         0.00091         0.00048         0.00000         0.00000         0.00105           34         0.00091         0.00048         0.00000         0.00000         0.00105           35         0.00091         0.00048         0.00000         0.00000         0.00115           36         0.00093         0.00055         0.00000         0.00000         0.00119           36         0.00093         0.00059	23	0.00063	0.00031			
25         0.00071         0.00031         0.00000         0.00000         0.00000           26         0.00075         0.00032         0.00000         0.00000         0.00000           27         0.00078         0.00032         0.00000         0.00000         0.00105           28         0.00081         0.00034         0.00000         0.00000         0.00000           29         0.00084         0.00038         0.00000         0.00000         0.00105           30         0.00088         0.00040         0.00000         0.00000         0.00105           31         0.00088         0.00043         0.00000         0.00000         0.00105           32         0.00099         0.00043         0.00000         0.00000         0.00105           34         0.00091         0.00048         0.00000         0.00000         0.00105           34         0.00091         0.00055         0.00000         0.00000         0.00105           35         0.00091         0.00055         0.00000         0.00000         0.00113           36         0.00093         0.00055         0.00000         0.00000         0.00113           37         0.00096         0.00059 <td>24</td> <td>0.00067</td> <td></td> <td></td> <td></td> <td></td>	24	0.00067				
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         0.00000           30         0.00088         0.00040         0.00000         0.00000         0.00105           31         0.00099         0.00043         0.00000         0.00000         0.00105           32         0.00091         0.00048         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         0.00105           36         0.00093         0.00055         0.00000         0.00000         0.00113           37         0.00096         0.00059         0.00000         0.00000         0.00147           38         0.00101         0.00064         0.00000         0.00000         0.00148           39         0.00107         0.00076 <td>25</td> <td></td> <td></td> <td></td> <td></td> <td></td>	25					
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         0.00044         0.00000         0.00000         0.00105           32         0.00090         0.00043         0.00000         0.00000         0.00105           33         0.00091         0.00048         0.00000         0.00000         0.00105           34         0.00091         0.00051         0.00000         0.00000         0.00105           35         0.00091         0.00051         0.00000         0.00000         0.00105           36         0.00093         0.00055         0.00000         0.00000         0.00119           36         0.00093         0.00059         0.00000         0.00000         0.00113           37         0.00096         0.00059         0.00000         0.00000         0.001147           38         0.00101         0.00064 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
28         0.00081         0.00034         0.00000         0.00000         0.00105           29         0.00086         0.00038         0.00000         0.00000         0.00105           31         0.00088         0.00040         0.00000         0.00000         0.00105           31         0.00098         0.00041         0.00000         0.00000         0.00105           32         0.00090         0.00043         0.00000         0.00000         0.00105           33         0.00091         0.00048         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         0.00105           36         0.00093         0.00055         0.00000         0.00000         0.00113           37         0.00096         0.00059         0.00000         0.00000         0.00147           38         0.00101         0.00076         0.00000         0.00000         0.00147           40         0.0015         0.00076         0.00000         0.00000         0.0014           41         0.00124         0.00076						
29         0.00084         0.00036         0.00000         0.00000         0.00105           30         0.00088         0.00040         0.00000         0.00000         0.00105           31         0.00098         0.00040         0.00000         0.00000         0.00105           32         0.00091         0.00043         0.00000         0.00000         0.00105           33         0.00091         0.00048         0.00000         0.00000         0.00105           34         0.00091         0.00048         0.0000         0.00000         0.00105           35         0.00091         0.00051         0.00000         0.00000         0.00105           36         0.00093         0.00055         0.00000         0.00000         0.00119           36         0.00096         0.00059         0.00000         0.00000         0.00143           37         0.00096         0.00059         0.00000         0.00000         0.00143           38         0.00101         0.00064         0.00000         0.00000         0.00168           39         0.00107         0.00007         0.00000         0.00000         0.00189           40         0.00124         0.00038 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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         0.00048         0.00000         0.00000         0.00105           34         0.00091         0.00051         0.00000         0.00000         0.00105           35         0.00091         0.00055         0.00000         0.00000         0.00113           36         0.00093         0.00059         0.00000         0.00000         0.0013           37         0.00096         0.00059         0.00000         0.00000         0.00147           38         0.00107         0.00070         0.00000         0.00000         0.00168           39         0.00107         0.00076         0.00000         0.00000         0.00168           40         0.00115         0.00076         0.00000         0.00000         0.00217           41         0.00124         0.00083         0.06500         0.14000         0.00224           42         0.00135         0.00089 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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         0.00048         0.00000         0.00000         0.00105           34         0.00091         0.00051         0.00000         0.00000         0.00105           35         0.00093         0.00055         0.00000         0.00000         0.00119           36         0.00093         0.00059         0.00000         0.00000         0.0013           37         0.00096         0.00059         0.00000         0.00000         0.00168           39         0.00107         0.00076         0.00000         0.00000         0.00168           39         0.00107         0.00076         0.00000         0.00000         0.0018           40         0.00115         0.00076         0.00000         0.00000         0.00121           41         0.00124         0.00083         0.06500         0.14000         0.00245           42         0.00135         0.00089         0.06500         0.14000         0.00339           43         0.00145         0.00094						
32         0.00090         0.00043         0.00000         0.00000         0.00105           33         0.00091         0.00048         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         0.00000           36         0.00093         0.00055         0.00000         0.00000         0.00119           38         0.00101         0.00064         0.00000         0.00000         0.00168           39         0.00107         0.00076         0.00000         0.00000         0.00189           40         0.00115         0.00076         0.00000         0.00000         0.00189           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         0.00356           44         0.00157         0.00099         0.06500         0.14000         0.00358           45         0.00170         0.00105 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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         0.00055         0.00000         0.00000         0.00105           36         0.00096         0.00055         0.00000         0.00000         0.00113           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         0.00076         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         0.00336           44         0.00157         0.00099         0.06500         0.14000         0.00399           45         0.00170         0.00105 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
34         0.00091         0.00048         0.00000         0.00000         0.00105           35         0.00091         0.00055         0.00000         0.00000         0.00119           36         0.00093         0.00055         0.00000         0.00000         0.00119           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         0.00076         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         0.0038           44         0.00157         0.00099         0.06500         0.14000         0.00399           45         0.00170         0.00105         0.06500         0.14000         0.00399           46         0.00185         0.00111 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
35         0.00091         0.00051         0.00000         0.00000         0.00119           36         0.00093         0.00055         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         0.0038           44         0.00157         0.00099         0.06500         0.14000         0.0038           45         0.00170         0.00105         0.06500         0.14000         0.0038           45         0.00170         0.00105         0.06500         0.14000         0.00399           46         0.00185         0.00111         0.06500         0.14000         0.00511           48         0.00226         0.00130						
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         0.00007         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         0.00338           43         0.00145         0.00099         0.06500         0.14000         0.0038           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         0.00359           46         0.00185         0.00111         0.06500         0.14000         0.00511           48         0.00226         0.00130 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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         0.00308           44         0.00157         0.00099         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         0.00350           46         0.00185         0.00111         0.06500         0.14000         0.00351           47         0.00204         0.00120         0.06500         0.14000         0.0051           48         0.00226         0.00130         0.06500         0.14000         0.00581           49         0.00250         0.00141 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
38         0.00101         0.00064         0.00000         0.00000         0.00108           39         0.00107         0.00076         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         0.00308           43         0.00145         0.00099         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         0.00581           48         0.00226         0.00130         0.06500         0.14000         0.00581           49         0.00250         0.00141         0.06500         0.14000         0.00581           49         0.00277         0.00154 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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         0.00308           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         0.00399           46         0.00185         0.00111         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         0.00581           49         0.00277         0.00154         0.06500         0.14000         0.00749           51         0.00277         0.00169 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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         0.00399           46         0.00185         0.00111         0.06500         0.14000         0.00359           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 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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         0.00858           50         0.00277         0.00169         0.03500         0.14000         0.00854           52         0.00345         0.00186         0.03500         0.23000         0.01096           53         0.00355         0.003500 </td <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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         0.01096           53         0.00385         0.00224         0.03500         0.23000         0.01096           54         0.00428         0.00224 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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         0.00581           49         0.00257         0.00154         0.06500         0.14000         0.00588           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         0.01096           53         0.00385         0.00205         0.03500         0.23000         0.01246           55         0.00476         0.00247 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>						
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         0.01099           54         0.00428         0.00205         0.03500         0.23000         0.01246           55         0.00476         0.00247         0.12000         0.23000         0.01446           55         0.00476         0.00247         0.12000         0.23000         0.01827           58         0.00600         0.00314 <td>43</td> <td></td> <td></td> <td></td> <td></td> <td></td>	43					
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         0.01827           58         0.00677         0.0361 <td>44</td> <td>0.00157</td> <td>0.00099</td> <td></td> <td></td> <td></td>	44	0.00157	0.00099			
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         0.01827           58         0.00677         0.00361         0.12000         0.23000         0.01827           59         0.00762         0.00415 <td>45</td> <td>0.00170</td> <td>0.00105</td> <td></td> <td></td> <td></td>	45	0.00170	0.00105			
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         0.01827           58         0.00677         0.00361         0.12000         0.23000         0.01827           59         0.00762         0.00415         0.12000         0.10000         0.02359           60         0.00858         0.00477 <td>46</td> <td>0.00185</td> <td>0.00111</td> <td></td> <td></td> <td></td>	46	0.00185	0.00111			
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         0.02359           60         0.0858         0.00477         0.12000         0.10000         0.03416           61         0.00966         0.00548 <td>47</td> <td>0.00204</td> <td>0.00120</td> <td></td> <td></td> <td></td>	47	0.00204	0.00120			
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         0.01827           58         0.00600         0.00314         0.12000         0.23000         0.01827           59         0.00762         0.00415         0.12000         0.10000         0.02359           60         0.0858         0.00477         0.12000         0.10000         0.03416           61         0.00966         0.00548         0.12000         0.35000         0.03416           62         0.01091         0.00627 <td>48</td> <td>0.00226</td> <td></td> <td></td> <td></td> <td></td>	48	0.00226				
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         0.02359           60         0.00858         0.00415         0.12000         0.10000         0.03416           61         0.00966         0.00548         0.12000         0.35000         0.03416           62         0.01091         0.00627         0.12000         0.35000         0.03416           63         0.01233         0.00718 <td>49</td> <td>0.00250</td> <td>0.00141</td> <td></td> <td></td> <td></td>	49	0.00250	0.00141			
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         0.0858         0.00477         0.12000         0.10000         0.03416           61         0.00966         0.00548         0.12000         0.35000         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 <td>50</td> <td>0.00277</td> <td>0.00154</td> <td></td> <td></td> <td></td>	50	0.00277	0.00154			
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         0.0858         0.00477         0.12000         0.10000         0.03416           61         0.00966         0.00548         0.12000         0.35000         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	51	0.00309	0.00169	0.03500	0.14000	0.00854
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         0.35000         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	52	0.00345	0.00186	0.03500	0.23000	0.00966
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	53	0.00385	0.00205			
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	54	0.00428	0.00224	0.03500	0.23000	
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	55	0.00476	0.00247	0.12000	0.23000	0.01414
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	56	0.00532	0.00276	0.12000	0.23000	0.01610
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	57	0.00600	0.00314	0.12000	0.23000	0.01827
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	58	0.00677	0.00361	0.12000	0.10000	0.02072
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	59	0.00762	0.00415	0.12000	0.10000	
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	60	0.00858	0.00477	0.12000		
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	61	0.00966	0.00548			
63       0.01233       0.00718       0.12000       0.35000       0.03416         64       0.01391       0.00819       0.50000       0.35000       0.03416	62	0.01091	0.00627		0.35000	
	63	0.01233	0.00718	0.12000	0.35000	
	64	0.01391	0.00819	0.50000	0.35000	0.03416
	65	0.01563	0.00929	0.50000	0.35000	0.03416

## 2005 ACTUARIAL ASSUMPTIONS

**ACTUARIAL ASSET VALUES:** 

Asset values are based on data furnished by the system's certified public accountants. Merger Notes are valued on an amortized basis. Invested assets are valued at market value adjusted to defer one-half of all realized and unrealized capital gains or losses accrued during the fiscal year.

**FAMILY STATISTICS:** 

Assumptions utilized in determining the costs of various survivor benefits as listed below, are derived from information provided in the 14th Actuarial Valuation of the U.S. Railroad Retirement System:

Age at	% With	Number of	Average
<u>Death</u>	<u>Children</u>	<u>Children</u>	Age
25	55%	2.2	7
35	80%	2.7	11
45	60%	1.9	13
55	20%	1.5	14
65	2%	1.0	17

DISABLED LIVES MORTALITY:

175% of 1971 Group Annuity Mortality Table (Female mortality based on a six year setback of the male table)

VESTING ELECTING PERCENTAGE:

80% of those vested elect deferred benefits in lieu of contribution refunds.

#### **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.