# FIREFIGHTERS' RETIREMENT SYSTEM

ACTUARIAL VALUATION AS OF
JUNE 30, 2011

# G. S. CURRAN & COMPANY, LTD.

**Actuarial Services**

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November 8, 2011

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, 2011. Our report is based on the actuarial assumptions specified and relies on the data supplied by the system's administrators and accountants. This report was prepared at the request of the Board of Trustees of the Firefighters' Retirement System of the State of Louisiana. The primary purposes of the report are to determine the actuarially required contribution for the retirement system for the fiscal year ending June 30, 2012, to recommend the net direct employer contribution rate for fiscal 2013, and to provide information for the system's financial statements. This report was prepared exclusively for the Firefighters' Retirement System for a specific limited purpose. It is not for the use or benefit of any third party for any purpose.

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

Sincerely,

G. S. CURRAN & COMPANY, LTD.

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

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

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# SUMMARY OF VALUATION RESULTS
# FIREFIGHTERS' RETIREMENT SYSTEM

| | | June 30, 2011 | June 30, 2010 |
|---|---|---|---|
| Valuation Date: | | | |
| Census Summary: | Active Contributing Members | 4,020 | 3,989 |
| | Retired Members and Beneficiaries | 1,802 | 1,749 |
| | DROP Participants | 225 | 162 |
| | Terminated Due a Deferred Benefit | 68 | 59 |
| | Terminated Due a Refund | 418 | 442 |
| Payroll (excludes DROP Participants): | | $ 193,136,985 | $ 189,542,210 |
| Benefits in Payment: | | $ 58,699,965 | $ 56,056,554 |
| Market Value of Assets: | | $ 1,154,482,040 | $ 971,775,080 |
| Unfunded Actuarial Accrued Liability: | | $ 416,177,743 | $ 396,204,368 |
| Actuarial Asset Value: | | $ 1,204,830,245 | $ 1,140,054,175 |
| Actuarial Accrued Liability: | | $ 1,621,007,988 | $ 1,536,258,543 |
| Ratio of Actuarial Value of Assets to Actuarial Accrued Liabilities: | | 74.33% | 74.21% |

| | FISCAL 2012 | FISCAL 2011 |
|---|---|---|
| Normal Cost as of July 1: | $ 47,869,777 | $ 46,768,881 |
| Amortization Cost (Credit) as of July 1: | $ 37,903,169 | $ 35,214,367 |
| Total Actuarially Required Contribution Inclusive of Estimated Administrative Costs: | $ 89,914,621 | $ 85,926,974 |
| Expected Insurance Premium Taxes | $ 21,858,158 | $ 21,624,265 |
| Net Direct Combined Actuarially Req'd Contributions | $ 68,056,463 | $ 64,302,709 |
| Actual Net Direct Combined Contribution Rate: | 33.25% | 29.50% |
| Actuarially Required Net Direct Combined Cont. Rate: | 34.02% | 32.97% |

Minimum Recommended Net Direct Employer Cont. Rate

| | | |
|---|---|---|
| For Employees with Earnings Below Poverty Level- | Fiscal 2013: 26.00% | Fiscal 2012: 25.25% |
| For Employees with Earnings Above Poverty Level - | Fiscal 2013: 24.00% | Fiscal 2012: 23.25% |

Employee Contribution Rate: 8.00% of payroll below poverty level/10.00% of payroll above poverty level

Actuarial Cost Method: Individual Entry Age Normal with allocation of cost based on earnings. Unfunded Accrued Liability (exclusive of liability for mergers) as of June 30, 2002 amortized through June 30, 2029 with level dollar payments. Unfunded Accrued Liability resulting from merged systems amortized over thirty years.

Valuation Interest Rate: 7½% (Net of Investment Expense)

Exclusions from Census: None

Basis of Actuarial Asset Value: The actuarial value of assets is based on the market value of assets adjusted to phase in asset earnings above or below the assumed rate of return over a five-year period with limits set at 85% and 115% of the market value of assets. When the adjusted value falls outside of the limits, the actuarial value is set equal to the average of the limited and adjusted value.

Changes in Valuation Methods, Assumptions, and/or Amortization Periods: None

Method of Recognizing Gains and Losses: Amortized over 20 years for fiscal 2010 and one less year each year thereafter, but not less than fifteen years.

Replaced 11/28/11

## COMMENTS ON DATA

For the valuation, the administrator of the system furnished a census on CD 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 4,245 active contributing members in the system of whom 1,874 have vested retirement benefits; in addition, there are 225 participants in the Deferred Retirement Option Plan (DROP); 1,802 former system members or their beneficiaries are receiving retirement benefits. An additional 486 members have contributions remaining on deposit with the system; of this number, 68 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 auditor, the firm of Duplantier, Hrapmann, Hogan & Maher, Certified Public Accountants. As indicated in the system's financial statements, the net market value of the system's assets was $1,154,482,040 as of June 30, 2011. Net investment income for fiscal 2011 measured on a market value basis amounted to $169,709,240. Contributions to the system for fiscal 2011 totaled $79,689,735; benefits and expenses amounted to $66,692,015.

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 were amortized over fifteen years. Contribution gains or losses arising from contributions in excess of or less than the required contributions are amortized over the same period as experience gains and losses. 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). The aggregate value of the bases as of that date was $175,578,584. Beginning with fiscal 2010, actuarial gains and losses, as well as contribution gains and losses, are amortized over a 20 year period. Each year thereafter, the amortization period will decrease by one year until attaining a 15 year amortization period. All changes in assumptions or the method of valuing assets are amortized over 15 years. All amortization payments are on a level dollar basis.

The current year actuarial assumptions utilized for the report are outlined on pages thirty-seven through forty. In the aggregate the assumptions represent our "best estimate" of future long-term experience for the fund.

## CHANGES IN PLAN PROVISIONS

The following changes in plan provisions were enacted during the 2011 Regular Session of the Louisiana Legislature:

**Act 238** changes the employee contribution rate effective July 1, 2011 from a fixed rate of 8% to a rate which is at least 8% but not greater than 10% based on the total contribution expressed as a percentage of payroll after applying all required tax contributions. The employee rate, when such contributions total 25% or less, is set at 8%. The employee rate then increases 0.25% for each 0.75% increase in the total rate, subject to a maximum rate of 10%. The change does not apply to members whose earnable compensation is less than or equal to the poverty guidelines issued by the U. S. Department of Health and Human Services.

The act also allows the Board of Trustees to maintain the net direct employer contribution rate at the prior fiscal year level at such time as the rate would otherwise decrease or to set the rate at any point between the previous year's net direct employer contribution rate and the recommended net direct employer contribution rate. Any excess funds collected, resulting from the higher contribution rate, are used to reduce the system's unfunded actuarial accrued liability. The Board may not utilize the above provision to set the net direct employer contribution rate at a level higher than 15%.

The act also limited the earnings to be considered in calculating final average compensation such that the earnings for the thirteenth through the twenty-fourth month may not exceed 115% of the earnings for the first twelve months and the earnings to be considered for the final twelve months may not exceed 115% of the earnings for the thirteenth through the twenty-fourth months. However, the provision set the minimum average final compensation to be used in the calculation of retirement benefits to the average compensation as it existed prior to the effective date of the act. In addition, the act excludes salary increases related to a promotion within the civil service system.

The act also made various changes to the structure of the Funding Review Panel.

**Act 277** extends the authority of a retired member or a Deferred Retirement Option Plan participant to convert from a service retirement to a service connected disability retirement, subject to the provisions of R. S. 11:2258, from July 1, 2011 through July 1, 2016.

**Act 377** excludes from earnable compensation for any member of a state or statewide retirement system who was elected for a term commencing July 1, 2011 or later, and who is employed in another position of public office or employment, any compensation earned from legislative service.

## 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.

| | Market Value | Actuarial Value | |
|---|---|---|---|
| 2002 | -3.7% | -3.0% | |
| 2003 | 5.4% | 0.9% | |
| 2004 | 11.0% | 8.0% | |
| 2005 | 10.4% | 10.4% | |
| 2006 | 12.3% | 9.9% | * |
| 2007 | 17.2% | 11.6% | |
| 2008 | - 5.0% | 9.0% | |
| 2009 | -20.8% | -4.9% | ** |
| 2010 | 12.2% | 6.1% | |
| 2011 | 17.4% | 4.5% | |

* 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 subject to a corridor of 90% to 110% of the market value of assets. Returns for years 1998 through 2005 were based on a 2-year smoothing of recognized realized and unrealized capital gains (losses) on all securities.

** Includes the effect of a change in the method for calculating the actuarial value of assets. The actuarial value of assets is based on the market value of investment securities adjusted to phase in asset earnings above or below the assumed rate of return over a five-year period with limits set at 85% and 115% of the market value of assets. When the adjusted value falls outside of the limits, the actuarial value is set equal to the average of the limited and adjusted value.

The market rate of return gives a measure of investment return on a total return basis and includes realized and unrealized capital gains and losses as well as interest income. (Asset and income values for merger notes were excluded from calculations in order to provide a measurement of the return on the portion of the portfolio under management.) This rate of return gives an indication of performance for an actively managed portfolio where securities are bought and sold with the objective of producing the highest total rate of return. During 2011, the fund earned $20,490,535 of dividends, interest and other recurring income. In addition, the Fund had net realized and unrealized capital gains on investments of $156,563,254. Investment expenses amounted to $7,344,549. The geometric mean of the market value rates of return was 5.0% measured over the last ten years and 6.5% measured over the last twenty years.

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 investment returns above or below the valuation interest rate

over a five year period subject to constraints. The difference between rates of return on an actuarial and market value basis results from the smoothing of gains or losses on investments relative to the valuation interest rate over a five-year period. Yields in excess of the 7.5% assumption will reduce future costs; yields below 7.5% will increase future costs. For fiscal 2011, the system experienced net actuarial investment earnings of $34,204,316 below the actuarial assumed earnings rate of 7.5% which produced an actuarial loss and increased the interest-adjusted amortization payments on the system's UAL by $3,398,881 or 1.70% of payroll, in fiscal 2012.

## PLAN DEMOGRAPHICS AND LIABILITY EXPERIENCE

A reconciliation of the census for the system is given in Exhibit X. The average active contributing member is 37 years old with 11.03 years of service credit and an annual salary of $48,044. The system's active contributing membership experienced an increase during fiscal 2011 of 31 members. The number of DROP participants increased by 63. Over the last five years active membership has increased by 486 members. 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 fifty increased. Over the same ten-year period the system showed an increase in the percentage of members with more than twenty years of service credit.

The average service retiree is 64 years old with a monthly benefit of $3,152. The number of retirees and beneficiaries receiving benefits from the system increased by 53 during the fiscal year. Over the last five years, the number has increased by 325; during the same period, the annual benefits in payment increased by $19,050,346.

The changes in the makeup of the population and changes in members' salaries increased the interest adjusted normal cost over the last year by $1,141,432; the normal cost percentage decreased by 0.05% of payroll. Plan liability experience for fiscal 2011 was favorable. Salary increase rates at most durations were below projections. Retirements were below projections. Retiree deaths were above projections. These factors decreased costs. Offsetting this decrease were DROP entries significantly above projections and withdrawals below projections. Net plan liability experience gains totaled $13,197,519. These gains decreased the interest-adjusted amortization payments on the system's unfunded accrued liability by $1,311,437, or 0.66% of payroll, in fiscal 2011.

## FUNDING ANALYSIS AND RECOMMENDATIONS

Actuarial funding of a retirement system is a process whereby funds are accumulated over the working lifetimes of employees in such a manner as to have sufficient assets available at retirement to pay for the lifetime benefits accrued by each member of the system. The required contributions are determined by an actuarial valuation based on rates of mortality, termination, disability, and retirement, as well as investment return and other statistical measures specific to the particular group. Each year a determination is made of two cost components, and the actuarially required contributions are based on the sum of these two components plus administrative expenses. These two components are the normal cost and the amortization payments on the unfunded actuarial accrued liability. The normal cost refers to the annual cost for active members allocated to each year by the particular cost method utilized. The term unfunded accrued liability (UAL) refers to the excess of the present value of plan benefits over the sum of current assets and future normal costs. Each year the UAL grows with interest and is reduced by payments. In addition it may be increased or diminished by plan experience, changes in assumptions, or changes in benefits including COLA's. Contributions in excess of or less

than the actuarially required amount can also decrease or increase the UAL balance. New entrants to the system can also increase or lower costs as a percent of payroll depending upon their demographic distribution. Finally, payroll growth affects plan costs since payments on the system's unfunded liability are on a fixed, level schedule. If payroll increases, these costs are reduced as a percentage of payroll.

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

An explanation of the change in costs related to asset and liability gains and losses as well as changes in demographics and assumptions is given in prior sections of the report. In addition to these components, variances in contribution levels and payroll also affect costs. For fiscal 2011 contributions totaled $6,777,563 less than required; the interest-adjusted amortization payment on the contribution shortfall for fiscal 2012 is $673,486, or 0.34% of payroll. In addition, for fiscal 2012 the net effect of the change in payroll on amortization costs was to reduce such costs by 0.47% of payroll.

A reconciliation of 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 2012 except for those items labeled fiscal 2011.

| | Dollars | Percentage of Payroll |
|---|---|---|
| Normal Cost for Fiscal 2011 | $ 48,491,009 | 24.86% |
| Cost of Assumption, Demographic, and Salary Changes | $ 1,141,432 | (0.05%) |
| Normal Cost for Fiscal 2012 | $ 49,632,441 | 24.81% |
| UAL Payments for Fiscal 2011 | $ 36,511,033 | 18.72% |
| Change due to change in payroll | N/A | (0.47%) |
| Additional Amortization Expenses for Fiscal 2012: | | |
| Merger Loss (Gain) | $ 26,879 | 0.01% |
| Asset Experience Loss (Gain) | $ 3,398,881 | 1.70% |
| Contribution Loss (Gain) | $ 673,486 | 0.34% |
| Liability Loss (Gain) | $ (1,311,437) | (0.66%) |
| Net Amortization Expense (Credit) for Fiscal 2012 | $ 2,787,809 | 1.39% |
| Estimated Administrative Cost for Fiscal 2012 | $ 983,338 | 0.49% |
| Total Normal Cost & Amortization Payments | $ 89,914,621 | 44.94% |

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The normal cost for fiscal 2012 as of July 1, 2011 is $47,869,777. The amortization payments on the system's unfunded actuarial accrued liability as of July 1, 2011 total $37,903,169. 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 2012 is $89,914,621. We estimate insurance premium taxes of $21,858,158 will be paid to the system in fiscal 2012. Hence, the total actuarially required net direct combined contribution (consisting of employee contributions and the net direct employer contribution) for fiscal 2012 amounts to $68,056,463 or 34.02% of payroll.

Since the actual net direct combined contribution rate for fiscal 2012 is 33.25% of payroll, there will be a contribution shortfall of 0.77% of payroll. The effect of this shortfall will be to increase the required contributions for fiscal 2012 by 0.08% of payroll. The statutes require rounding the net direct employer contribution rate to the nearest 0.25%. Therefore, we recommend a combined employee and net direct employer contribution rate of 34.00% for fiscal 2013. For members with earnings less than or equal to the Department of HHS poverty guidelines, employee contributions will be set equal to 8.00% of payroll. The employer contribution rate to be applied to the earnings of such members will be set equal to 26.00% of payroll. For members with earnings greater than the Department of HHS poverty guidelines, employee contributions will be set equal to 10.00% of payroll. The employer contribution rate to be applied to the earnings of such members will be set equal to 24.00% of payroll.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions, changes in economic or demographic assumptions, completion of amortization payments or credit schedules, and changes in plan provisions or applicable law. Analysis of the effect of all these factors is beyond the scope of this report. We have, however, calculated the sensitivity of the plan's costs to a change in two factors. First, we have determined that based on current assets and demographics, for each percentage under (over) the assumed rate of return on the actuarial value of assets, there will be a corresponding increase (reduction) in the actuarially required contribution as a percentage of projected payroll of 0.60%. In addition, we have determined that a 1% reduction in the valuation interest rate for the Fund would increase the actuarially required contribution rate for fiscal 2012 by 14.45%.

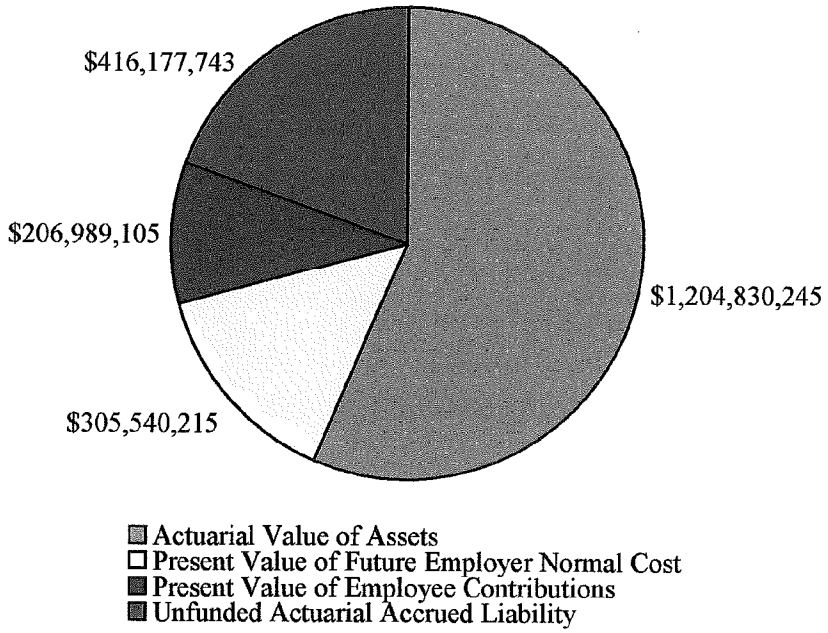
Notwithstanding recent contribution increases, a significant portion of investment losses incurred in fiscal 2009 have not yet been released into the actuarial value of assets due to the current asset smoothing methodology. These losses will be released over the next two years and will put upward pressure on costs as they are released into income unless they are offset by substantial asset or liability gains.

## COST OF LIVING INCREASES

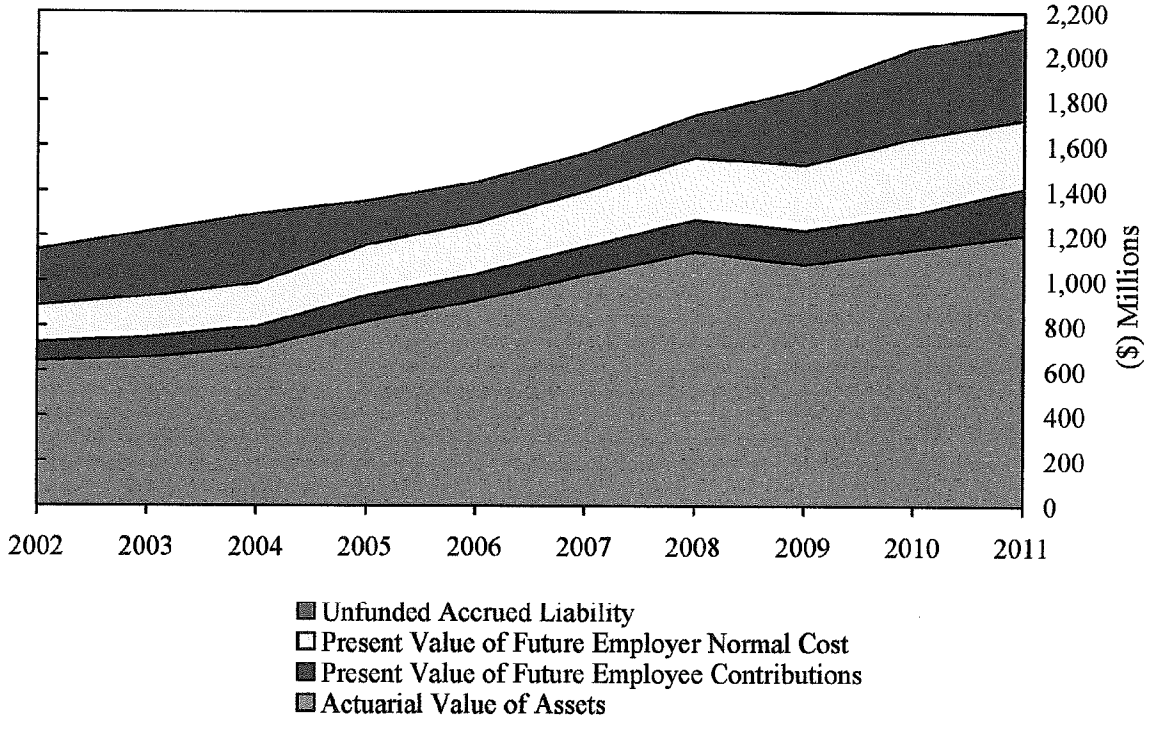
During fiscal 2011, the actual cost of living (as measured by the US Department of Labor CPI-U) increased by 3.56%. Cost of living provisions for the system are detailed in R.S. 11:2260A(7) and R.S. 11:246. The former statute allows the board to use interest earnings in excess of the normal requirements 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 $1 and "A" represents the number of years of credited service accrued at retirement or at death of the member or retiree and "B" is equal to the number of years since retirement or since death of the member or retiree to June 30$^{th}$ 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 2011 the plan has not met the necessary target ratio and does not have excess investment earnings. Therefore, the Fund is unable to grant COLAs to retirees at this time.

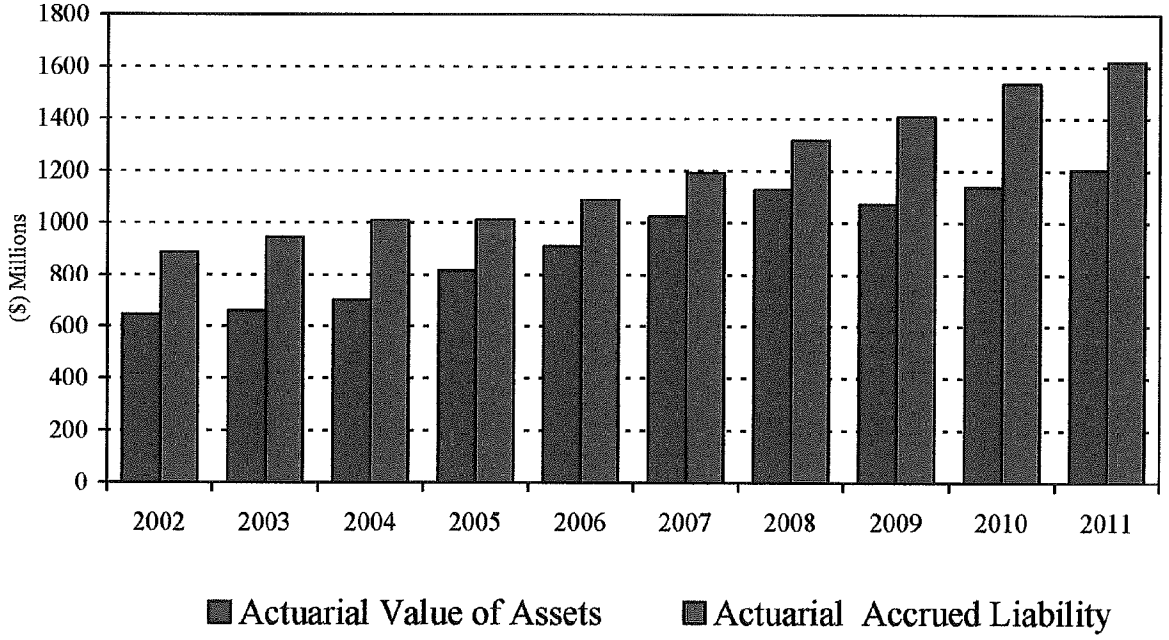
# Components of Present Value of Future Benefits
## June 30, 2011



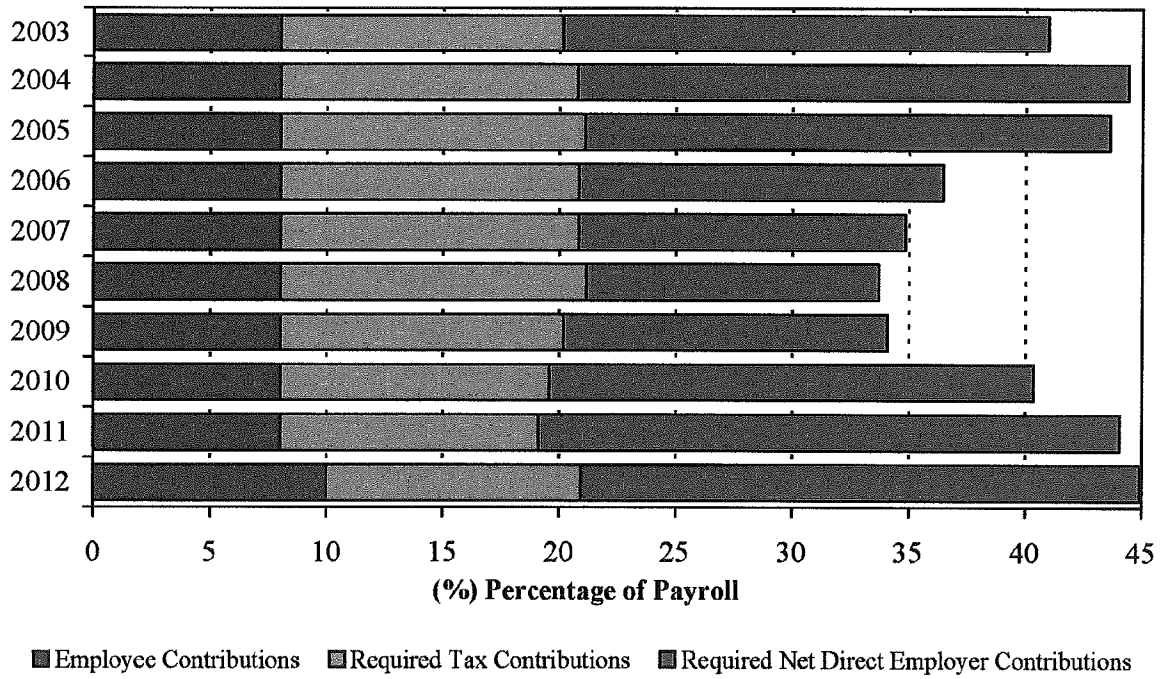

# Components of Present Value of Future Benefits
## Historical



## Actuarial Value of Assets vs. Actuarial Accrued Liability

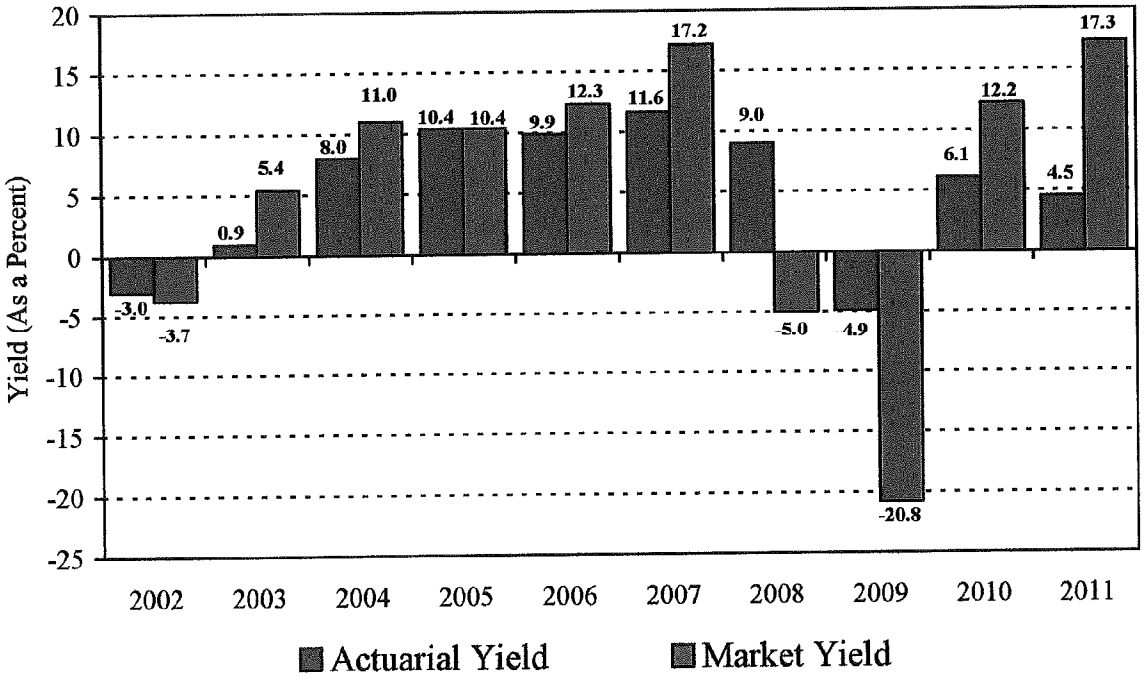



## Components of Actuarial Funding

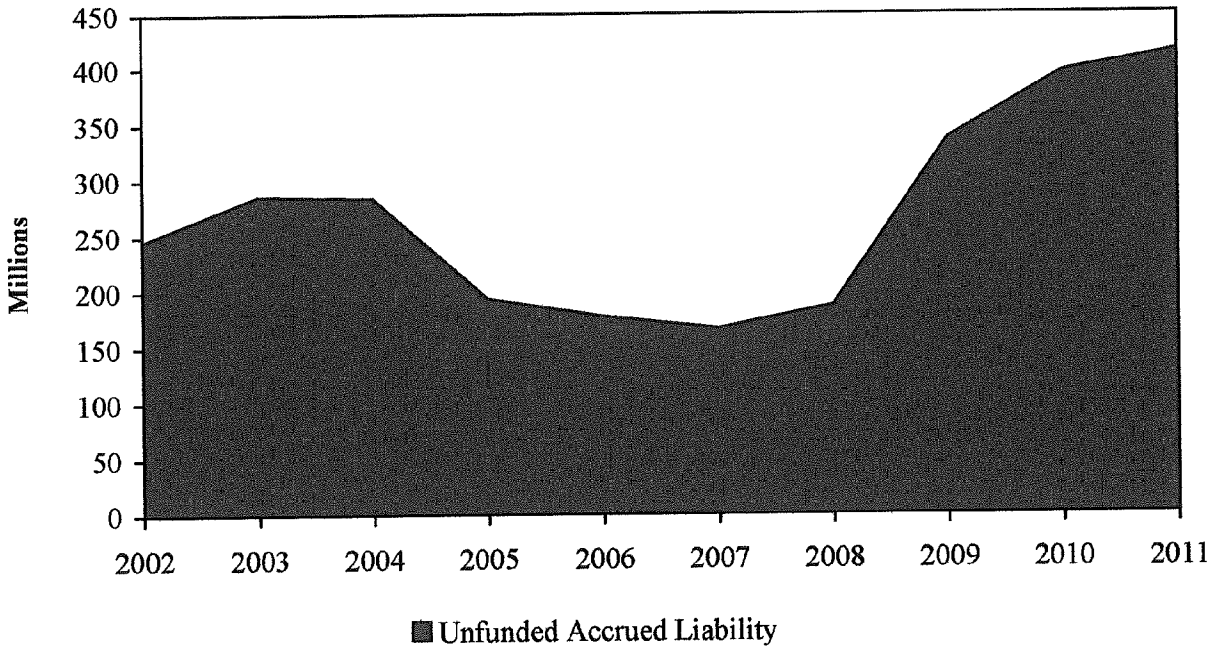



(2012 employee contribution level is based on members with earnings above the poverty level)

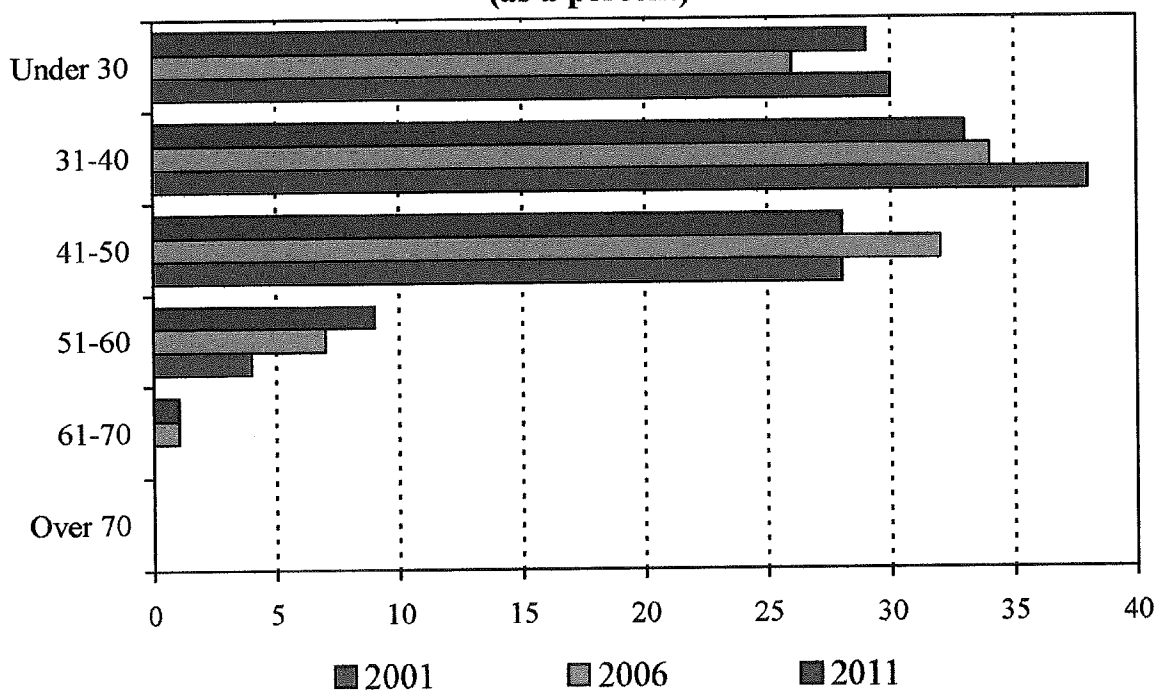
# Historical Asset Yields



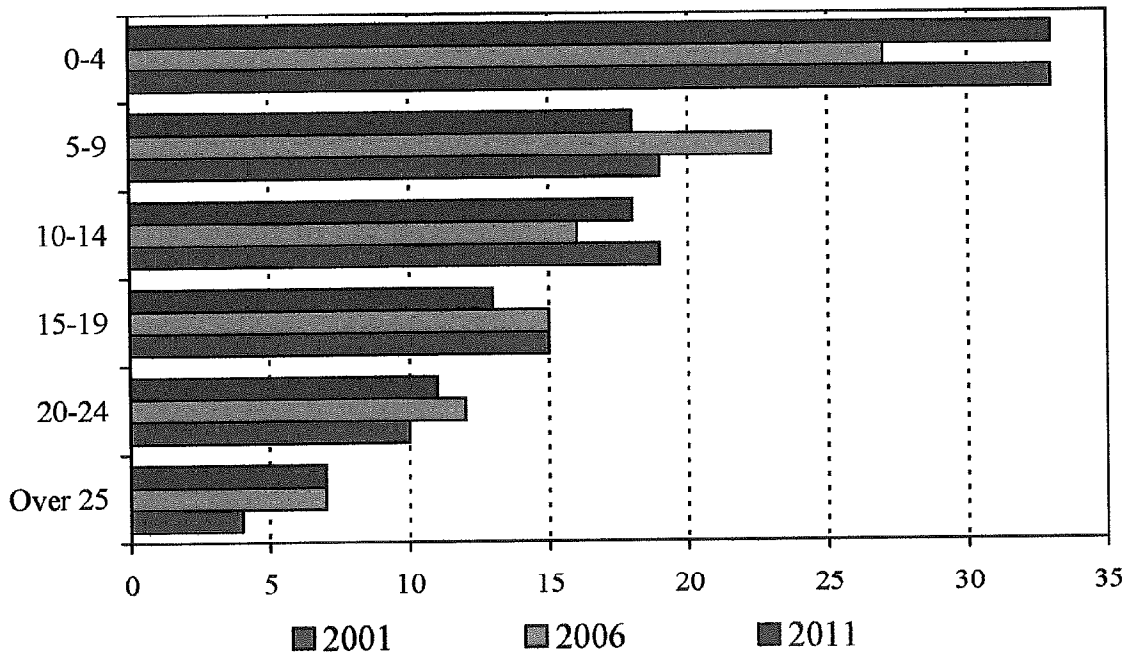

# Unfunded Accrued Liability



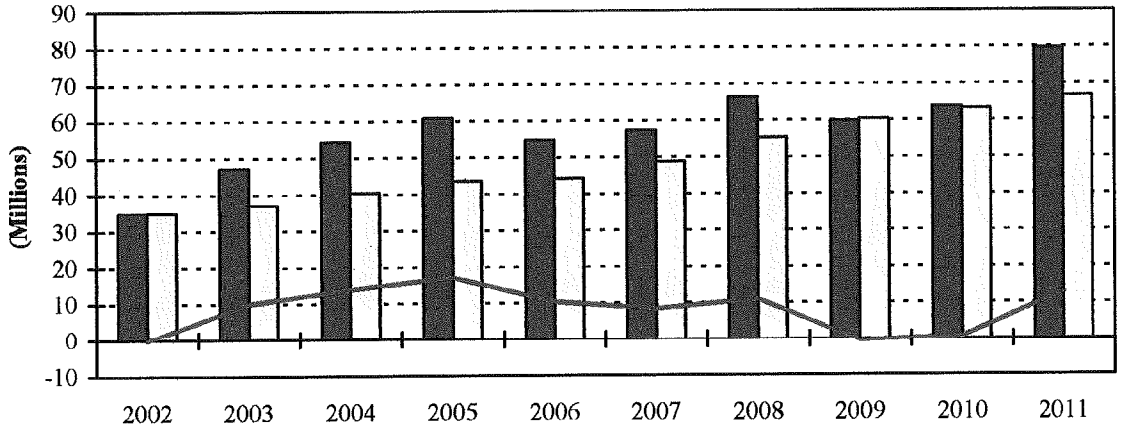
## Active – Census By Age
**(as a percent)**




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



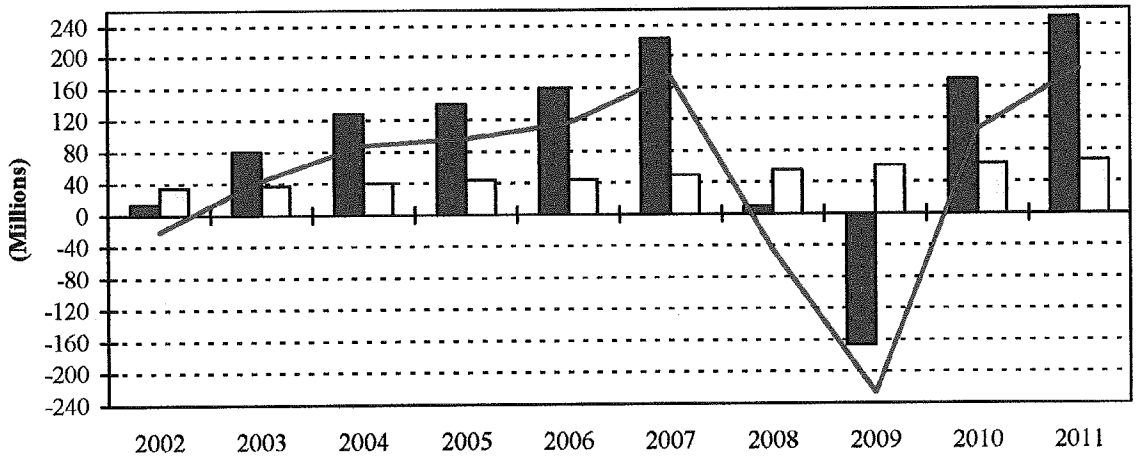
# Net Non-Investment Income




| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|
| Non-Investment Income ($Mil) | 34.9 | 47.1 | 54.4 | 60.8 | 54.7 | 57.4 | 66.3 | 59.8 | 63.7 | 79.7 |
| Benefits and Expenses ($Mil) | 35.1 | 37.1 | 40.4 | 43.6 | 44.2 | 48.9 | 55.3 | 60.3 | 63.1 | 66.7 |
| Net Non-Investment Income ($Mil) | -0.2 | 10.0 | 14.4 | 17.2 | 10.5 | 8.5 | 11.0 | -0.5 | 0.6 | 13.0 |

# Total Income vs. Expenses

## (Based on Market Value of Assets)




| | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Income ($Mil) | 14.0 | 80.8 | 128.1 | 139.8 | 159.5 | 223.3 | 9.5 | -166.6 | 169.3 | 249.4 |
| Benefits and Expenses ($Mil) | 35.1 | 37.1 | 40.4 | 43.6 | 44.2 | 48.9 | 55.3 | 60.3 | 63.1 | 66.7 |
| Net Change in MVA ($Mil) | -21.1 | 43.7 | 87.7 | 96.2 | 115.3 | 174.4 | -45.8 | -226.9 | 106.2 | 182.7 |

# EXHIBITS

# EXHIBIT I
## ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

| | | |
|---|---|---|
| 1. | Normal Cost of Retirement Benefits | $ 42,592,234 |
| 2. | Normal Cost of Death Benefits | $ 1,269,503 |
| 3. | Normal Cost of Disability Benefits | $ 1,141,444 |
| 4. | Normal Cost of Deferred Retirement Benefits | $ 1,433,369 |
| 5. | Normal Cost of Contribution Refunds | $ 1,433,227 |
| 6. | TOTAL Normal Cost as of July 1, 2011 (1+2+3+4+5) | $ 47,869,777 |
| 7. | Amortization of Unfunded Accrued Liability of $416,177,743 | $ 37,903,169 |
| 8. | TOTAL Normal Cost & Amortization Payments (6+7) | $ 85,772,946 |
| 9. | Normal Cost and Amortization Payments Interest Adjusted for Midyear Payment | $ 88,931,283 |
| 10. | Estimated Administrative Cost for Fiscal 2012 | $ 983,338 |
| 11. | TOTAL Administrative and Interest Adjusted Actuarial Costs (9+10) | $ 89,914,621 |
| 12. | Expected Insurance Premium Taxes due in Fiscal 2012 | $ 21,858,158 |
| 13. | Net Direct Combined Actuarially Req'd Contributions for Fiscal 2012 (11-12) | $ 68,056,463 |
| 14. | Projected Payroll For Contributing Members July 1, 2011 through June 30, 2012 | $200,028,163 |
| 15. | Net Direct Combined Actuarially Required Contributions as a % of Projected Payroll for Fiscal 2012 (13 ÷ 14) | 34.02% |
| 16. | Actual Net Direct Combined Contribution Rate for Fiscal 2012 | 33.25% |
| 17. | Contribution Gain (Loss) as a Percentage of Payroll (16 – 15) | (0.77%) |
| 18. | Adjustment to Following Year Payment for Contribution Gain (Loss) | (0.08%) |
| 19. | Recommended Net Direct Combined Contribution Rate for Fiscal 2013 (15 – 18) (Rounded to nearest 0.25%) | 34.00% |
| 20. | Recommended Net Direct Employee Contribution Rate (for members with earnings less than or equal to the Department of HHS poverty guidelines) | 8.00% |
| 21. | Recommended Net Direct Employer Contribution Rate (for members with earnings less than or equal to the Department of HHS poverty guidelines) | 26.00% |
| 22. | Recommended Net Direct Employee Contribution Rate (for members with earnings more than the Department of HHS poverty guidelines) | 10.00% |
| 23. | Recommended Net Direct Employer Contribution Rate (for members with earnings more than the Department of HHS poverty guidelines) | 24.00% |

# EXHIBIT II
## PRESENT VALUE OF FUTURE BENEFITS

Present Value of Future Benefits for Active Members:

| | | |
|---|---|---|
| Retirement Benefits | $1,378,551,877 | |
| Survivor Benefits | 21,501,720 | |
| Disability Benefits | 16,935,903 | |
| Vested Deferred Termination Benefits | 26,915,724 | |
| Contribution Refunds | 10,725,600 | |
| TOTAL Present Value of Future Benefits for Active Members | | $ 1,454,630,824 |

Present Value of Future Benefits for Terminated Members:

| | | |
|---|---|---|
| Terminated Vested Members Due Benefits at Retirement | $ 10,329,021 | |
| Terminated Members with Reciprocals Due Benefits at Retirement | 0 | |
| Terminated Members Due a Refund | 1,470,242 | |
| TOTAL Present Value of Future Benefits for Terminated Members | | $ 11,799,263 |

Present Value of Future Benefits for Retirees:

| | | |
|---|---|---|
| Regular Retirees | $ 529,626,667 | |
| Disability Retirees | 26,953,417 | |
| Survivors & Widows | 47,283,314 | |
| Retiree DROP Account Balance | 60,769,366 | |
| IBO Retirees' Account Balance | 2,474,457 | |
| TOTAL Present Value of Future Benefits for Retirees & Survivors | | $ 667,107,221 |
| TOTAL Present Value of Future Benefits | | $ 2,133,537,308 |

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

Current Assets:

| | | |
|---|---|---|
| Cash & Cash Equivalents in Banks | $ 8,096,048 | |
| Contributions Receivable from Members | 1,255,418 | |
| Contributions Receivable from Employers | 3,498,023 | |
| Accrued Interest and Dividends on Investments | 4,085,813 | |
| Receivable on Currency Contracts | 11,998,719 | |
| Investments Receivables | 57,157,167 | |
| Prepaid Expenses | 450 | |
| TOTAL CURRENT ASSETS | | $ 86,091,638 |
| Property, Plant and Equipment (Net of accumulated depreciation) | | $ 789,235 |

Investments:

| | | |
|---|---|---|
| Common Stock | $374,248,711 | |
| Mutual Funds | 148,143,631 | |
| Hedge Funds | 131,970,006 | |
| Private Equity | 118,897,017 | |
| Private Real Estate | 98,414,367 | |
| Corporate Bonds | 65,727,789 | |
| Cash & Cash Equivalents | 60,578,638 | |
| Emerging Market Debt | 39,092,234 | |
| Assct Backed Securities | 26,211,075 | |
| U. S. Government Securities | 15,922,044 | |
| TOTAL INVESTMENTS | | $1,079,205,512 |
| MERGER NOTES | | $ 3,317,170 |
| TOTAL ASSETS | | $1,169,403,555 |

Current Liabilities:

| | | |
|---|---|---|
| Payable on Currency Contracts | 12,273,018 | |
| Investment Payables | 2,230,832 | |
| Accounts Payable | 417,665 | |
| TOTAL CURRENT LIABILITIES | | $ 14,921,515 |
| NET MARKET VALUE OF ASSETS | | $1,154,482,040 |

# EXHIBIT III – SCHEDULE B
# ACTUARIAL VALUE OF ASSETS

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

| | |
|---|---|
| Fiscal year 2011 | $ 96,347,506 |
| Fiscal year 2010 | 40,659,988 |
| Fiscal year 2009 | (308,277,876) |
| Fiscal year 2008 | (142,555,260) |
| Fiscal year 2007 | 93,344,557 |
| Total for five years | $ (220,481,085) |

Deferral of excess (shortfall) of invested income:

| | |
|---|---|
| Fiscal year 2011 (80%) | $ 77,078,005 |
| Fiscal year 2010 (60%) | 24,395,993 |
| Fiscal year 2009 (40%) | (123,311,151) |
| Fiscal year 2008 (20%) | (28,511,052) |
| Fiscal year 2007 ( 0%) | 0 |
| Total deferred for year | $ (50,348,205) |

| | |
|---|---|
| Market value of plan net assets, end of year | $ 1,154,482,040 |
| Preliminary actuarial value of plan assets, end of year | $ 1,204,830,245 |

Actuarial value of assets corridor

| | |
|---|---|
| 85% of market value, end of year | $ 981,309,734 |
| 115% of market value, end of year | $ 1,327,654,346 |
| Final actuarial value of plan net assets, end of year | $ 1,204,830,245 |

## EXHIBIT IV
### PRESENT VALUE OF FUTURE CONTRIBUTIONS

| | | |
|---|---|---|
| Employee Contributions to the Annuity Savings Fund | | $ 206,989,105 |
| Employer Normal Contributions to the Pension Accumulation Fund | | 305,540,215 |
| Employer Payments on the Unfunded Actuarial Accrued Liability | | 416,177,743 |
| TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS | | $ 928,707,063 |

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

| | | |
|---|---|---|
| LIABILITY FOR ACTIVE MEMBERS | | |
| Accrued Liability for Retirement Benefits | $ 921,839,042 | |
| Accrued Liability for Survivor Benefits | 8,049,011 | |
| Accrued Liability for Disability Benefits | 4,859,802 | |
| Accrued Liability for Vested Termination Benefits | 11,704,996 | |
| Accrued Liability for Refunds of Contributions | (4,351,347) | |
| TOTAL Actuarial Accrued Liability for Active Members | | $ 942,101,504 |
| LIABILITY FOR TERMINATED MEMBERS | | $ 11,799,263 |
| LIABILITY FOR RETIREES AND SURVIVORS | | $ 667,107,221 |
| TOTAL ACTUARIAL ACCRUED LIABILITY | | $ 1,621,007,988 |
| ACTUARIAL VALUE OF ASSETS | | $ 1,204,830,245 |
| UNFUNDED ACTUARIAL ACCRUED LIABILITY | | $ 416,177,743 |

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

| | | |
|---|---|---|
| Prior Year Unfunded Accrued Liability | | $ 396,204,368 |
| Interest on Unfunded Accrued Liability | $ 29,715,328 | |
| Normal Cost for Prior Year | 46,768,881 | |
| Interest on the Normal Cost | 3,507,666 | |
| Normal Cost for Merged Systems with Accrued Interest | 0 | |
| Administrative Expenses | 964,964 | |
| Interest on Expenses | 35,532 | |
| TOTAL Increases to Unfunded Accrued Liability | | $ 80,992,371 |
| Required Contributions for Prior Year with interest | $ 89,132,488 | |
| Contribution Excess (Shortfall) with accrued interest | (6,777,563) | |
| Cost of Living Adjustment Gains (Losses) | 0 | |
| Merger Gains (Losses) | (329,132) | |
| Investment Gains (Losses) | (34,204,316) | |
| Liability Experience Gains (Losses) | 13,197,519 | |
| Liability Assumption Gains (Losses) | 0 | |
| TOTAL Decreases to Unfunded Accrued Liability | | $ 61,018,996 |
| CURRENT YEAR UNFUNDED ACCRUED LIABILITY | | $ 416,177,743 |

# EXHIBIT V - SCHEDULE C
## AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY
## JUNE 30, 2011

| FISCAL YEAR | DESCRIPTION | AMORT. PERIOD | INITIAL BALANCE | YEARS REMAINING | REMAINING BALANCE | AMORT. PAYMENTS |
|---|---|---|---|---|---|---|
| 1993 | Merger Loss (Gain) | 30 | 13,485,002 | 12 | 8,711,774 | 1,047,664 |
| 1995 | Merger Loss (Gain) | 30 | 41,779,611 | 14 | 29,701,990 | 3,254,713 |
| 1996 | Merger Loss (Gain) | 30 | 1,772,399 | 15 | 1,311,887 | 138,251 |
| 1997 | Merger Loss (Gain) | 30 | 890,324 | 16 | 683,316 | 69,534 |
| 1998 | Merger Loss (Gain) | 30 | 1,602,435 | 17 | 1,270,726 | 125,299 |
| 1999 | Merger Loss (Gain) | 30 | 14,104,876 | 18 | 11,521,003 | 1,104,183 |
| 2001 | Merger Loss (Gain) | 30 | 3,117,590 | 20 | 2,680,510 | 244,593 |
| 2002 | Cumulative Non-Merger Bases | 27 | 175,578,584 | 18 | 148,467,297 | 14,229,238 |
| 2003 | Contribution Loss (Gain) | 15 | 2,678,010 | 7 | 1,601,793 | 281,320 |
| 2003 | Assumption Loss (Gain) | 15 | (3,248,077) | 7 | (1,942,767) | (341,205) |
| 2003 | Experience Loss (Gain) | 15 | 44,477,780 | 7 | 26,603,416 | 4,672,310 |
| 2004 | Contribution Loss (Gain) | 15 | 2,129,874 | 8 | 1,411,079 | 224,102 |
| 2004 | Experience Loss (Gain) | 15 | 1,570,785 | 8 | 1,040,673 | 165,275 |
| 2005 | Experience Loss (Gain) | 15 | (24,922,321) | 9 | (18,010,028) | (2,626,401) |
| 2005 | Assumption Loss (Gain) | 15 | (57,207,831) | 9 | (41,341,038) | (6,028,760) |
| 2005 | Contribution Loss (Gain) | 15 | (2,457,193) | 9 | (1,775,682) | (258,948) |
| 2006 | Experience Loss (Gain) | 15 | (30,043,731) | 10 | (23,362,389) | (3,166,113) |
| 2006 | Benefits/COLA Loss (Gain) | 15 | 12,495,729 | 10 | 9,716,838 | 1,316,843 |
| 2006 | Assumption Loss (Gain) | 15 | 7,880,410 | 10 | 6,127,907 | 830,465 |
| 2006 | Contribution Loss (Gain) | 15 | (3,044,474) | 10 | (2,367,422) | (320,837) |
| 2007 | Contribution Loss (Gain) | 15 | (3,684,696) | 11 | (3,053,670) | (388,306) |
| 2007 | Merger Loss (Gain) | 30 | 1,065,812 | 26 | 1,019,706 | 83,948 |
| 2007 | Experience Loss (Gain) | 15 | (19,348,466) | 11 | (16,034,929) | (2,039,009) |
| 2007 | Benefits/COLA Loss (Gain) | 15 | 13,421,495 | 11 | 11,122,986 | 1,414,404 |
| 2008 | Assumption Loss (Gain) | 15 | (138,425) | 12 | (121,303) | (14,588) |
| 2008 | Contribution Loss (Gain) | 15 | (4,399,499) | 12 | (3,855,317) | (463,635) |
| 2008 | Merger Loss (Gain) | 30 | 1,556,324 | 27 | 1,507,698 | 122,582 |
| 2008 | Experience Loss (Gain) | 15 | 11,244,458 | 12 | 9,853,612 | 1,184,980 |
| 2008 | Benefits/COLA Loss (Gain) | 15 | 15,006,752 | 12 | 13,150,541 | 1,581,464 |
| 2009 | Asset Assumption Loss (Gain) | 15 | (121,695,690) | 13 | (112,027,452) | (12,824,715) |
| 2009 | Asset Experience Loss (Gain) | 20 | 261,874,151 | 18 | 249,326,130 | 23,895,637 |
| 2009 | COLA Loss (Gain) | 20 | 15,784,880 | 18 | 15,028,527 | 1,440,347 |
| 2009 | Experience Loss (Gain) | 20 | (3,921,422) | 18 | (3,733,522) | (357,824) |
| 2009 | Contribution Loss (Gain) | 20 | 993,536 | 18 | 945,929 | 90,659 |
| 2010 | Liability Assumption Loss(Gain) | 15 | 37,843,942 | 14 | 36,395,002 | 3,988,126 |
| 2010 | Asset Experience Loss (Gain) | 19 | 14,930,089 | 18 | 14,550,702 | 1,394,552 |
| 2010 | Experience Loss (Gain) | 19 | 985,441 | 18 | 960,400 | 92,046 |
| 2010 | Contribution Loss (Gain) | 19 | 11,264,571 | 18 | 10,978,328 | 1,052,173 |
| 2011 | Merger Loss (Gain) | 30 | 329,132 | 30 | 329,132 | 25,924 |
| 2011 | Asset Experience Loss (Gain) | 18 | 34,204,316 | 18 | 34,204,316 | 3,278,172 |
| 2011 | Experience Loss (Gain) | 18 | (13,197,519) | 18 | (13,197,519) | (1,264,862) |
| 2011 | Contribution Loss (Gain) | 18 | 6,777,563 | 18 | 6,777,563 | 649,568 |

TOTAL Unfunded Actuarial Accrued Liability $ 416,177,743

TOTAL Fiscal 2012 Amortization Payments $ 37,903,169

* 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, 2010) | | $ 1,140,054,175 |
| Income: | | |
| Regular Member Contributions | $ 15,647,266 | |
| Regular Employer Contributions | 42,158,612 | |
| Insurance Premium Taxes | 21,624,265 | |
| Irregular Contributions | 259,592 | |
| Contributions from Mergers | 0 | |
| TOTAL CONTRIBUTIONS | | $ 79,689,735 |
| Interest and Dividends | $ 20,226,421 | |
| Rent Income | 28,391 | |
| Interest from Merger Notes | 235,723 | |
| Net Appreciation of Fair Value of Investments | 156,563,254 | |
| Investment Expenses | (7,344,549) | |
| SUBTOTAL OF ALL MARKET INVESTMENT INCOME | | $ 169,709,240 |
| TOTAL Income | | $ 249,398,975 |
| Expenses: | | |
| Retirement/Survivor Benefits/DROP Disbursements | $ 59,900,086 | |
| Refunds of Contributions | 1,072,332 | |
| Disability Benefits | 4,754,633 | |
| Administrative Expenses | 964,964 | |
| Funds Transferred to Another System | 0 | |
| TOTAL Expenses | | $ 66,692,015 |
| Net Market Income for Fiscal 2011 (Income - Expenses) | | $ 182,706,960 |
| Adjustment for Actuarial Smoothing | | $ (117,930,890) |
| Actuarial Value of Assets (June 30, 2011) | | $ 1,204,830,245 |

## EXHIBIT VII
### FUND BALANCE

Present Assets of the System Creditable to:

| | |
|---|---|
| Annuity Savings Fund | $ 128,392,414 |
| Annuity Reserve Fund | 603,863,398 |
| Pension Accumulation Fund | 335,996,200 |
| Deferred Retirement Option Plan Account | 83,755,571 |
| Initial Benefit Option Plan Account | 2,474,457 |
| NET MARKET VALUE OF ASSETS | $ 1,154,482,040 |
| ADJUSTMENT FOR ACTUARIAL SMOOTHING | 50,348,205 |
| NET ACTUARIAL VALUE OF ASSETS | $ 1,204,830,245 |

## EXHIBIT VIII
### PENSION BENEFIT OBLIGATION

| | |
|---|---|
| Present Value of Credited Projected Payable to Current Employees | $ 899,079,968 |
| Present Value of Benefits Payable to Terminated Employees | 11,799,263 |
| Present Value of Benefits Payable to Current Retirees and Beneficiaries | 667,107,221 |
| TOTAL PENSION BENEFIT OBLIGATION | $ 1,577,986,452 |
| NET ACTUARIAL VALUE OF ASSETS | $ 1,204,830,245 |
| Ratio of Net Actuarial Value of Assets to Pension Benefit Obligation | 76.35% |

# 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: | | 0.54% |
| Adjustments in Funded Ratio Due to Mergers or Changes in Assumption(s): | | |
| Changes for Fiscal 1987 | (0.72%) | |
| Changes for Fiscal 1988 | (3.24%) | |
| Changes for Fiscal 1989 | (3.80%) | |
| Changes for Fiscal 1992 | 1.34% | |
| Changes for Fiscal 1993 | (1.25%) | |
| Changes for Fiscal 1994 | (0.03%) | |
| Changes for Fiscal 1995 | (1.73%) | |
| Changes for Fiscal 1996 | (16.29%) | |
| Changes for Fiscal 1997 | (3.65%) | |
| Changes for Fiscal 1998 | (0.27%) | |
| Changes for Fiscal 1999 | (0.97%) | |
| Changes for Fiscal 2000 | (2.97%) | |
| Changes for Fiscal 2001 | (0.23%) | |
| Changes for Fiscal 2003 | 0.45% | |
| Changes for Fiscal 2005 | 4.16% | |
| Changes for Fiscal 2006 | (0.71%) | |
| Changes for Fiscal 2007 | (0.09%) | |
| Changes for Fiscal 2008 | (0.01%) | |
| Changes for Fiscal 2009 | 8.88% | |
| Changes for Fiscal 2010 | (2.00%) | |
| Changes for Fiscal 2011 | (0.02%) | |
| TOTAL Adjustments | | (23.15%) |
| Amortization of Adjustments in Funded Ratio over 30 years: | | |
| Changes for Fiscal 1987 | 0.58% | |
| Changes for Fiscal 1988 | 2.48% | |
| Changes for Fiscal 1989 | 2.79% | |
| Changes for Fiscal 1992 | (0.85%) | |
| Changes for Fiscal 1993 | 0.75% | |
| Changes for Fiscal 1994 | 0.02% | |
| Changes for Fiscal 1995 | 0.92% | |
| Changes for Fiscal 1996 | 8.15% | |
| Changes for Fiscal 1997 | 1.70% | |
| Changes for Fiscal 1998 | 0.12% | |
| Changes for Fiscal 1999 | 0.39% | |
| Changes for Fiscal 2000 | 1.09% | |
| Changes for Fiscal 2001 | 0.08% | |
| Changes for Fiscal 2003 | (0.12%) | |
| Changes for Fiscal 2005 | (0.83%) | |
| Changes for Fiscal 2006 | 0.12% | |
| Changes for Fiscal 2007 | 0.01% | |
| Changes for Fiscal 2008 | 0.00% | |
| Changes for Fiscal 2009 | (0.59%) | |
| Changes for Fiscal 2010 | 0.07% | |
| Changes for Fiscal 2011 | 0.00% | |
| TOTAL Amortization of Adjustments | | 16.88% |
| Target Ratio for Current Fiscal Year | | 93.62% |
| Actuarial Value of Assets Divided by PBO as of Fiscal 2011 | | 76.35% |

# EXHIBIT X
## CENSUS DATA

| | Active | Terminated with Funds on Deposit | DROP | Retired | Total |
|---|---|---|---|---|---|
| Number of members as of June 30, 2010 | 3,989 | 501 | 162 | 1,749 | 6,401 |
| Additions to Census | | | | | |
| Initial membership | 270 | 21 | | | 291 |
| Death of another member | | | (1) | 26 | 25 |
| Omitted in error last year | | | | 5 | 5 |
| Adjustment for multiple records | | | | 11 | 11 |
| Change in Status during Year | | | | | |
| Actives terminating service | (79) | 79 | | | |
| Actives who retired | (35) | | | 35 | |
| Actives entering DROP | (101) | | 101 | | |
| Term. members rehired | 27 | (27) | | | |
| Term. members who retire | | (1) | | 1 | |
| Retirees who are rehired | | | | | |
| Refunded who are rehired | 12 | | | | 12 |
| DROP participants retiring | | | (30) | 30 | |
| DROP returned to work | 7 | | (7) | | |
| Omitted in error last year | | | | | |
| Eliminated from Census | | | | | |
| Refund of contributions | (63) | (85) | | | (148) |
| Deaths | (7) | (1) | | (55) | (63) |
| Included in error last year | | | | | |
| Suspended Benefits | | | | | |
| Adjustment for Multiple Records | | (1) | | | (1) |
| Number of members as of June 30, 2011 | 4,020 | 486 | 225 | 1,802 | 6,533 |

*ACTIVES CENSUS BY AGE:*

| Age | Number Male | Number Female | Total Number | Average Salary | Total Salary |
|---|---|---|---|---|---|
| 16 - 20 | 39 | 0 | 39 | 30,382 | 1,184,910 |
| 21 - 25 | 442 | 10 | 452 | 34,438 | 15,565,866 |
| 26 - 30 | 635 | 26 | 661 | 38,070 | 25,163,966 |
| 31 - 35 | 646 | 33 | 679 | 43,347 | 29,432,523 |
| 36 - 40 | 629 | 35 | 664 | 48,802 | 32,404,754 |
| 41 - 45 | 554 | 35 | 589 | 54,238 | 31,945,907 |
| 46 - 50 | 511 | 43 | 554 | 59,273 | 32,837,466 |
| 51 - 55 | 237 | 28 | 265 | 62,436 | 16,545,440 |
| 56 - 60 | 87 | 8 | 95 | 68,641 | 6,520,930 |
| 61 - 65 | 18 | 1 | 19 | 70,428 | 1,338,140 |
| 66 - 70 | 1 | 0 | 1 | 57,146 | 57,146 |
| 71 - 75 | 2 | 0 | 2 | 69,969 | 139,937 |
| TOTAL | 3,801 | 219 | 4,020 | 48,044 | 193,136,985 |

*THE ACTIVE CENSUS INCLUDES 1,874 ACTIVES WITH VESTED BENEFITS, INCLUDING 51 ACTIVE FORMER DROP PARTICIPANTS. THE 225 CURRENT DROP PARTICIPANTS ARE EXCLUDED.*

*DROP PARTICIPANTS:*

| Age | Number Male | Number Female | Total Number | Average Benefit | Total Benefit |
|---|---|---|---|---|---|
| 41 - 45 | 1 | 0 | 1 | 55,744 | 55,744 |
| 46 - 50 | 45 | 2 | 47 | 54,481 | 2,560,619 |
| 51 - 55 | 117 | 3 | 120 | 58,570 | 7,028,362 |
| 56 - 60 | 50 | 0 | 50 | 59,485 | 2,974,231 |
| 61 - 65 | 4 | 1 | 5 | 55,626 | 278,132 |
| 66 - 70 | 2 | 0 | 2 | 33,434 | 66,868 |
| TOTAL | 219 | 6 | 225 | 57,618 | 12,963,956 |

Replaced 11/28/11

*TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:*

| Age | Number Male | Number Female | Total Number | Average Benefit | Total Benefit |
|---|---|---|---|---|---|
| 36 - 40 | 12 | 0 | 12 | 20,331 | 243,966 |
| 41 - 45 | 19 | 1 | 20 | 22,032 | 440,641 |
| 46 - 50 | 26 | 0 | 26 | 27,492 | 714,786 |
| 51 - 55 | 9 | 0 | 9 | 18,645 | 167,805 |
| 61 - 65 | 1 | 0 | 1 | 23,393 | 23,393 |
| TOTAL | 67 | 1 | 68 | 23,391 | 1,590,591 |

*TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:*

| Contributions Ranging From | | To | Number | Total Contributions |
|---|---|---|---|---|
| 0 | - | 99 | 50 | 2,295 |
| 100 | - | 499 | 115 | 29,688 |
| 500 | - | 999 | 50 | 35,634 |
| 1000 | - | 1999 | 57 | 81,937 |
| 2000 | - | 4999 | 58 | 179,808 |
| 5000 | - | 9999 | 46 | 330,493 |
| 10000 | - | 19999 | 27 | 415,838 |
| 20000 | - | 99999 | 15 | 394,549 |
| TOTAL | | | 418 | 1,470,242 |

Replaced 11/28/11

*REGULAR RETIREES:*

| Age | Number Male | Number Female | Total Number | Average Benefit | Total Benefit |
|---|---|---|---|---|---|
| 41 - 45 | 3 | 0 | 3 | 60,153 | 180,458 |
| 46 - 50 | 44 | 1 | 45 | 43,962 | 1,978,273 |
| 51 - 55 | 186 | 5 | 191 | 42,299 | 8,079,164 |
| 56 - 60 | 259 | 9 | 268 | 41,808 | 11,204,551 |
| 61 - 65 | 325 | 6 | 331 | 38,794 | 12,840,656 |
| 66 - 70 | 190 | 4 | 194 | 35,895 | 6,963,587 |
| 71 - 75 | 144 | 2 | 146 | 33,723 | 4,923,524 |
| 76 - 80 | 69 | 0 | 69 | 28,857 | 1,991,121 |
| 81 - 85 | 68 | 0 | 68 | 25,879 | 1,759,797 |
| 86 - 90 | 17 | 0 | 17 | 28,625 | 486,623 |
| 91 - 99 | 2 | 0 | 2 | 27,381 | 54,762 |
| TOTAL | 1,307 | 27 | 1,334 | 37,828 | 50,462,516 |

*DISABILITY RETIREES:*

| Age | Number Male | Number Female | Total Number | Average Benefit | Total Benefit |
|---|---|---|---|---|---|
| 31 - 35 | 1 | 0 | 1 | 14,719 | 14,719 |
| 36 - 40 | 4 | 1 | 5 | 17,594 | 87,969 |
| 41 - 45 | 16 | 1 | 17 | 21,185 | 360,153 |
| 46 - 50 | 22 | 3 | 25 | 26,203 | 655,078 |
| 51 - 55 | 19 | 4 | 23 | 19,610 | 451,034 |
| 56 - 60 | 24 | 1 | 25 | 19,645 | 491,117 |
| 61 - 65 | 15 | 1 | 16 | 21,881 | 350,088 |
| 66 - 70 | 12 | 0 | 12 | 16,687 | 200,249 |
| 71 - 75 | 9 | 0 | 9 | 11,373 | 102,355 |
| 76 - 80 | 7 | 0 | 7 | 16,370 | 114,588 |
| 81 - 85 | 2 | 0 | 2 | 9,342 | 18,684 |
| TOTAL | 131 | 11 | 142 | 20,042 | 2,846,034 |

*SURVIVORS:*

| Age | Number Male | Number Female | Total Number | Average Benefit | Total Benefit |
|---|---|---|---|---|---|
| 0 - 25 | 13 | 18 | 31 | 5,763 | 178,641 |
| 26 - 30 | 0 | 3 | 3 | 14,145 | 42,434 |
| 31 - 35 | 1 | 1 | 2 | 13,947 | 27,893 |
| 36 - 40 | 1 | 7 | 8 | 19,274 | 154,188 |
| 41 - 45 | 0 | 7 | 7 | 27,965 | 195,757 |
| 46 - 50 | 0 | 11 | 11 | 22,103 | 243,130 |
| 51 - 55 | 0 | 15 | 15 | 21,826 | 327,387 |
| 56 - 60 | 2 | 22 | 24 | 25,061 | 601,458 |
| 61 - 65 | 0 | 22 | 22 | 16,693 | 367,243 |
| 66 - 70 | 1 | 24 | 25 | 18,175 | 454,373 |
| 71 - 75 | 0 | 41 | 41 | 20,504 | 840,679 |
| 76 - 80 | 1 | 52 | 53 | 16,019 | 849,012 |
| 81 - 85 | 0 | 57 | 57 | 13,164 | 750,328 |
| 86 - 90 | 0 | 14 | 14 | 17,123 | 239,728 |
| 91 - 99 | 0 | 13 | 13 | 9,166 | 119,164 |
| TOTAL | 19 | 307 | 326 | 16,538 | 5,391,415 |

*ACTIVE MEMBERS:*

| Attained Ages | Completed Years of Service | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5- 9 | 10-14 | 15-19 | 20-24 | 25-29 | 30&Over | Total |
| 0 - 20 | 26 | 13 | | | | | | | | | | 39 |
| 21 - 25 | 80 | 131 | 80 | 100 | 45 | 16 | | | | | | 452 |
| 26 - 30 | 63 | 95 | 84 | 92 | 86 | 231 | 10 | | | | | 661 |
| 31 - 35 | 27 | 41 | 40 | 47 | 58 | 230 | 227 | 9 | | | | 679 |
| 36 - 40 | 27 | 24 | 12 | 32 | 23 | 125 | 256 | 155 | 10 | | | 664 |
| 41 - 45 | 4 | 14 | 12 | 12 | 13 | 58 | 117 | 204 | 150 | 5 | | 589 |
| 46 - 50 | 5 | 14 | 6 | 12 | 4 | 34 | 69 | 93 | 190 | 120 | 7 | 554 |
| 51 - 55 | 1 | 2 | 3 | | 5 | 22 | 32 | 34 | 78 | 68 | 20 | 265 |
| 56 - 60 | | | | | | 4 | 14 | 15 | 22 | 12 | 28 | 95 |
| 61 - 65 | | | | | | | 3 | 6 | | 2 | 8 | 19 |
| 66 - 70 | | | | | | | | | | | 1 | 1 |
| 71 & Over | | | | | | | | | | 1 | 1 | 2 |
| Totals | 233 | 334 | 237 | 295 | 234 | 720 | 728 | 516 | 450 | 208 | 65 | 4020 |

*AVERAGE ANNUAL SALARY OF ACTIVE MEMBERS:*

| Attained Ages | Completed Years of Service | | | | | | | | | | | Average Salary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5- 9 | 10-14 | 15-19 | 20-24 | 25-29 | 30&Over | |
| 0 - 20 | 30,095 | 30,958 | | | | | | | | | | 30,382 |
| 21 - 25 | 29,290 | 32,739 | 36,272 | 36,952 | 37,634 | 40,207 | | | | | | 34,438 |
| 26 - 30 | 29,519 | 33,829 | 35,950 | 38,239 | 38,771 | 42,166 | 47,804 | | | | | 38,070 |
| 31 - 35 | 30,996 | 33,499 | 36,647 | 38,360 | 42,216 | 42,255 | 49,569 | 59,323 | | | | 43,347 |
| 36 - 40 | 33,347 | 35,270 | 38,203 | 37,434 | 40,324 | 43,972 | 51,067 | 57,341 | 61,663 | | | 48,802 |
| 41 - 45 | 30,761 | 37,355 | 34,358 | 39,300 | 43,212 | 43,191 | 52,782 | 57,244 | 61,102 | 66,143 | | 54,238 |
| 46 - 50 | 31,252 | 43,728 | 41,789 | 38,174 | 34,716 | 43,273 | 54,365 | 57,480 | 62,325 | 68,945 | 76,868 | 59,273 |
| 51 - 55 | 29,930 | 47,201 | 40,106 | | 47,729 | 47,006 | 54,669 | 58,906 | 63,145 | 71,598 | 74,093 | 62,436 |
| 56 - 60 | | | | | | 52,204 | 56,441 | 57,217 | 65,330 | 69,640 | 85,383 | 68,641 |
| 61 - 65 | | | | | | | 61,725 | 52,590 | | 64,258 | 88,614 | 70,428 |
| 66 - 70 | | | | | | | | | | | 57,146 | 57,146 |
| 71 & Over | | | | | | | | | | 59,332 | 80,605 | 69,969 |
| Average | 30,180 | 33,996 | 36,410 | 37,775 | 39,928 | 42,803 | 51,449 | 57,406 | 62,192 | 69,694 | 80,882 | 48,044 |

*TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:*

| Attained Ages | Years Until Retirement Eligibility | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5- 9 | 10-14 | 15-19 | 20-24 | 25-29 | 30&Over | Total |
| 0 - 35 | | | | | | | | | | | | 0 |
| 36 - 40 | | | | | | | | 12 | | | | 12 |
| 41 - 45 | | | | | | 1 | 19 | | | | | 20 |
| 46 - 50 | 1 | 2 | 1 | | 3 | 19 | | | | | | 26 |
| 51 - 55 | 1 | 1 | 2 | 3 | 2 | | | | | | | 9 |
| 56 - 60 | | | | | | | | | | | | 0 |
| 61 - 65 | 1 | | | | | | | | | | | 1 |
| 66 & Over | | | | | | | | | | | | 0 |
| Totals | 3 | 3 | 3 | 3 | 5 | 20 | 19 | 12 | 0 | 0 | 0 | 68 |

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

| Attained Ages | Years Until Retirement Eligibility | | | | | | | | | | | Average Benefit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5- 9 | 10-14 | 15-19 | 20-24 | 25-29 | 30&Over | |
| 0 - 35 | | | | | | | | | | | | 0 |
| 36 - 40 | | | | | | | | 20,330 | | | | 20,330 |
| 41 - 45 | | | | | | 41,265 | 21,020 | | | | | 22,032 |
| 46 - 50 | 47,817 | 32,750 | 39,455 | | 39,419 | 23,356 | | | | | | 27,492 |
| 51 - 55 | 8,094 | 38,423 | 23,644 | 15,616 | 13,577 | | | | | | | 18,645 |
| 56 - 60 | | | | | | | | | | | | 0 |
| 61 - 65 | 23,393 | | | | | | | | | | | 23,393 |
| 66 & Over | | | | | | | | | | | | 0 |
| Average | 26,435 | 34,641 | 28,915 | 15,616 | 29,082 | 24,251 | 21,020 | 20,330 | 0 | 0 | 0 | 23,391 |

*SERVICE RETIREES:*

| Attained Ages | Completed Years Since Retirement | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5- 9 | 10-14 | 15-19 | 20-24 | 25-29 | 30&Over | Total |
| 0 - 50 | 9 | 8 | 10 | 12 | 8 | 1 | | | | | | 48 |
| 51 - 55 | 29 | 35 | 31 | 22 | 32 | 41 | 1 | | | | | 191 |
| 56 - 60 | 15 | 20 | 23 | 17 | 34 | 122 | 29 | 8 | | | | 268 |
| 61 - 65 | 6 | 11 | 6 | 17 | 6 | 107 | 139 | 26 | 10 | 2 | 1 | 331 |
| 66 - 70 | 3 | 2 | 1 | 4 | 1 | 28 | 65 | 61 | 17 | 12 | | 194 |
| 71 - 75 | | | | | 1 | 8 | 27 | 40 | 36 | 19 | 15 | 146 |
| 76 - 80 | | | | | | 1 | 4 | 5 | 18 | 20 | 21 | 69 |
| 81 - 85 | | | | | | | 3 | 3 | 14 | 16 | 32 | 68 |
| 86 - 90 | | | | | | | 1 | | 2 | 6 | 8 | 17 |
| 91 & Over | | | | | | | | | | 2 | | 2 |
| Totals | 62 | 76 | 71 | 72 | 82 | 308 | 269 | 143 | 97 | 77 | 77 | 1334 |

*AVERAGE ANNUAL BENEFITS PAYABLE TO SERVICE RETIREES:*

| Attained Ages | Completed Years Since Retirement | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5- 9 | 10-14 | 15-19 | 20-24 | 25-29 | 30&Over | Average Benefit |
| 0 - 50 | 49,305 | 46,251 | 53,915 | 38,893 | 37,426 | 39,717 | | | | | | 44,974 |
| 51 - 55 | 43,811 | 43,705 | 42,481 | 46,458 | 39,566 | 40,095 | 29,966 | | | | | 42,299 |
| 56 - 60 | 46,963 | 42,402 | 45,958 | 40,312 | 40,529 | 43,295 | 36,431 | 24,162 | | | | 41,808 |
| 61 - 65 | 51,861 | 44,117 | 43,338 | 44,704 | 41,424 | 40,296 | 38,287 | 31,107 | 27,293 | 21,273 | 17,759 | 38,794 |
| 66 - 70 | 50,414 | 25,948 | 31,508 | 40,393 | 44,783 | 37,128 | 40,436 | 35,167 | 24,319 | 24,672 | | 35,895 |
| 71 - 75 | | | | | 23,944 | 44,914 | 37,002 | 42,154 | 31,872 | 22,336 | 18,883 | 33,723 |
| 76 - 80 | | | | | | 18,971 | 41,214 | 39,514 | 40,177 | 26,992 | 16,510 | 28,857 |
| 81 - 85 | | | | | | | 27,359 | 33,458 | 40,373 | 32,301 | 15,478 | 25,879 |
| 86 - 90 | | | | | | | 26,346 | | 49,396 | 33,171 | 20,308 | 28,625 |
| 91 & Over | | | | | | | | | | 27,381 | | 27,381 |
| Average | 46,470 | 43,223 | 45,136 | 42,995 | 39,765 | 41,218 | 38,324 | 35,884 | 33,206 | 26,928 | 16,954 | 37,828 |

*DISABILITY RETIREES:*

| Attained Ages | Completed Years Since Retirement | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5- 9 | 10-14 | 15-19 | 20-24 | 25-29 | 30&Over | Total |
| 0 - 30 | | | | | | | | | | | | 0 |
| 31 - 35 | | | | | | 1 | | | | | | 1 |
| 36 - 40 | 1 | | 2 | | 1 | 1 | | | | | | 5 |
| 41 - 45 | 2 | 4 | 1 | 1 | | 6 | 2 | 1 | | | | 17 |
| 46 - 50 | 1 | 2 | | 4 | 2 | 12 | 3 | 1 | | | | 25 |
| 51 - 55 | | 1 | | | | 9 | 5 | 4 | 4 | | | 23 |
| 56 - 60 | | | | | 1 | 3 | 5 | 3 | 8 | 4 | 1 | 25 |
| 61 - 65 | | | | | | 1 | 3 | 5 | 4 | 3 | | 16 |
| 66 - 70 | | | | | | | 2 | 1 | 3 | 4 | 2 | 12 |
| 71 - 75 | | | | | | | 2 | | | | 7 | 9 |
| 76 - 80 | | | | | | | | 1 | 2 | | 4 | 7 |
| 81 - 85 | | | | | | | 1 | | | | 1 | 2 |
| 86 & Over | | | | | | | | | | | | 0 |
| Totals | 4 | 7 | 3 | 5 | 4 | 33 | 23 | 16 | 21 | 11 | 15 | 142 |

*AVERAGE ANNUAL BENEFITS PAYABLE TO DISABILITY RETIREES:*

| Attained Ages | Completed Years Since Retirement | | | | | | | | | | | Average Benefit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5- 9 | 10-14 | 15-19 | 20-24 | 25-29 | 30&Over | |
| 0 - 30 | | | | | | | | | | | | 0 |
| 31 - 35 | | | | | | 14,719 | | | | | | 14,719 |
| 36 - 40 | 25,457 | | 15,419 | | 23,499 | 8,174 | | | | | | 17,594 |
| 41 - 45 | 28,391 | 29,103 | 22,175 | 18,202 | | 16,950 | 15,884 | 13,113 | | | | 21,185 |
| 46 - 50 | 31,398 | 38,632 | | 32,203 | 21,482 | 25,783 | 16,674 | 15,223 | | | | 26,203 |
| 51 - 55 | | 27,324 | | | | 27,035 | 12,245 | 15,439 | 14,354 | | | 19,610 |
| 56 - 60 | | | | | 22,200 | 25,910 | 18,415 | 17,381 | 17,694 | 24,697 | 6,630 | 19,645 |
| 61 - 65 | | | | | | 25,527 | 27,713 | 19,649 | 23,452 | 16,456 | | 21,881 |
| 66 - 70 | | | | | | | 11,415 | 17,378 | 20,339 | 21,111 | 7,289 | 16,687 |
| 71 - 75 | | | | | | | 9,192 | | | | 11,996 | 11,373 |
| 76 - 80 | | | | | | | | 33,466 | 17,516 | | 11,523 | 16,370 |
| 81 - 85 | | | | | | | 5,154 | | | | 13,530 | 9,342 |
| 86 & Over | | | | | | | | | | | | 0 |
| Average | 28,409 | 31,572 | 17,671 | 29,402 | 22,166 | 23,653 | 15,852 | 18,208 | 18,515 | 21,146 | 10,987 | 20,042 |

*SURVIVING BENEFICIARIES OF FORMER MEMBERS:*

| Attained Ages | Completed Years Since Retirement | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5- 9 | 10-14 | 15-19 | 20-24 | 25-29 | 30&Over | Total |
| 0 - 20 | 5 | 10 | 1 | 4 | 4 | 3 | 2 | 2 | | | | 31 |
| 21 - 25 | | | | | | | | | | | | 0 |
| 26 - 30 | 2 | | | 1 | | | | | | | | 3 |
| 31 - 35 | | | | 1 | | | | | 1 | | | 2 |
| 36 - 40 | | 1 | | | 2 | 2 | 2 | 1 | | | | 8 |
| 41 - 45 | 1 | 2 | | 2 | | | 1 | 1 | | | | 7 |
| 46 - 50 | 2 | | | 1 | 1 | 1 | 3 | 3 | | | | 11 |
| 51 - 55 | | 2 | | 2 | | 4 | 3 | 1 | 1 | 2 | | 15 |
| 56 - 60 | 1 | | | 1 | | 5 | 5 | 4 | 4 | 4 | | 24 |
| 61 - 65 | | | | | | 2 | 6 | 8 | 2 | 1 | 3 | 22 |
| 66 - 70 | | | | 1 | | 3 | 7 | 4 | 1 | 5 | 4 | 25 |
| 71 - 75 | | | | | | 1 | 5 | 4 | 13 | 4 | 14 | 41 |
| 76 - 80 | | | | | | | 4 | 3 | 8 | 9 | 29 | 53 |
| 81 - 85 | | | | | | | | 3 | 4 | 9 | 41 | 57 |
| 86 - 90 | | | | | | | | 1 | 3 | 4 | 6 | 14 |
| 91 & Over | | | | | | | 1 | | | 2 | 10 | 13 |
| Totals | 11 | 15 | 1 | 13 | 7 | 21 | 39 | 35 | 37 | 40 | 107 | 326 |

*AVERAGE ANNUAL BENEFITS PAYABLE TO SURVIVORS OF FORMER MEMBERS:*

| Attained Ages | Completed Years Since Retirement | | | | | | | | | | | Average Benefit |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0 | 1 | 2 | 3 | 4 | 5- 9 | 10-14 | 15-19 | 20-24 | 25-29 | 30&Over | |
| 0 - 20 | 4,955 | 5,512 | 2,745 | 5,426 | 8,537 | 8,693 | 3,079 | 3,956 | | | | 5,763 |
| 21 - 25 | | | | | | | | | | | | 0 |
| 26 - 30 | 14,457 | | | 13,521 | | | | | | | | 14,145 |
| 31 - 35 | | | | 26,141 | | | | | 1,752 | | | 13,947 |
| 36 - 40 | | 27,363 | | | 25,050 | 18,612 | 14,312 | 10,878 | | | | 19,273 |
| 41 - 45 | 33,422 | 39,968 | | 33,695 | | | 2,698 | 12,313 | | | | 27,965 |
| 46 - 50 | 33,003 | | | 27,722 | 26,947 | 20,658 | 22,098 | 11,835 | | | | 22,103 |
| 51 - 55 | | 27,107 | | 17,697 | | 27,846 | 16,541 | 25,253 | 32,743 | 9,388 | | 21,826 |
| 56 - 60 | 35,590 | | | 30,904 | | 24,169 | 28,752 | 29,153 | 21,148 | 17,290 | | 25,061 |
| 61 - 65 | | | | | | 15,702 | 20,128 | 16,956 | 16,406 | 26,018 | 6,864 | 16,693 |
| 66 - 70 | | | | 27,189 | | 23,300 | 24,589 | 28,443 | 2,795 | 7,199 | 8,150 | 18,175 |
| 71 - 75 | | | | | | 45,565 | 13,160 | 41,314 | 27,384 | 14,499 | 10,719 | 20,504 |
| 76 - 80 | | | | | | | 20,509 | 31,729 | 22,730 | 21,943 | 10,085 | 16,019 |
| 81 - 85 | | | | | | | | 17,149 | 15,762 | 21,217 | 10,851 | 13,164 |
| 86 - 90 | | | | | | | | 4,959 | 25,600 | 20,921 | 12,381 | 17,123 |
| 91 & Over | | | | | | | 2,898 | | | 13,721 | 8,882 | 9,166 |
| Average | 17,155 | 14,442 | 2,745 | 19,228 | 15,885 | 22,050 | 18,994 | 22,136 | 22,497 | 17,688 | 10,315 | 16,538 |

# EXHIBIT XI
# YEAR-TO-YEAR COMPARISON

| | Fiscal 2011 | Fiscal 2010 | Fiscal 2009 | Fiscal 2008 |
|---|---|---|---|---|
| Number of Active Contributing Members | 4,020 | 3,989 | 3,882 | 3,821 |
| Number of Retirees & Survivors | 1,802 | 1,749 | 1,688 | 1,631 |
| DROP Participants | 225 | 162 | 147 | 130 |
| Number Terminated Due Deferred Benefits | 68 | 59 | 55 | 55 |
| Number of Terminated Due Refund | 418 | 442 | 407 | 350 |
| Active Lives Payroll (excludes DROP participants) | $ 193,136,985 | $ 189,542,210 | $ 178,913,097 | $ 169,401,716 |
| Retiree Benefits in Payment | $ 58,699,965 | $ 56,056,554 | $ 53,031,851 | $ 48,416,581 |
| Market Value of Assets | $1,154,482,040 | $ 971,775,080 | $ 865,547,030 | $1,092,459,674 |
| Ratio of Actuarial Value of Assets to Actuarial Accrued Liability | 74.33% | 74.21% | 76.13% | 85.78% |
| Actuarial Accrued Liability | $1,621,007,988 | $1,536,258,543 | $1,410,559,615 | $1,317,161,382 |
| Actuarial Value of Assets | $1,204,830,245 | $1,140,054,175 | $1,073,797,423 | $1,129,809,421 |
| UAL (Funding Excess) | $ 416,177,743 | $ 396,204,368 | $ 336,762,192 | $ 187,351,961 |
| P.V. of Future Employer Normal Contributions | $ 305,540,215 | $ 335,984,027 | $ 292,585,945 | $ 277,566,364 |
| P.V. of Future Employee Contributions | $ 206,989,105 | $ 160,939,180 | $ 150,094,699 | $ 142,412,175 |
| Present Value of Future Benefits | $2,133,537,308 | $2,033,181,750 | $1,853,240,259 | $1,737,139,921 |

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| | Fiscal 2012 | Fiscal 2011 | Fiscal 2010 | Fiscal 2009 |
|---|---|---|---|---|
| Employee Contribution Rate (For employees with earnings above the poverty level) | 10.00% | 8.00% | 8.00% | 8.00% |
| Required Tax Contributions as a Percentage of Projected Payroll | 10.93% | 11.09% | 11.56% | 12.20% |
| Actuarially Required Employer Contribution as a Percentage of Projected Payroll (For employees with earnings above the poverty level) | 24.02% | 24.97% | 20.79% | 13.89% |
| Actual Employer Contribution Rate (For employees with earnings above the poverty level) | 23.25% | 21.50% | 14.00% | 12.50% |

| Fiscal 2007 | Fiscal 2006 | Fiscal 2005 | Fiscal 2004 | Fiscal 2003 | Fiscal 2002 |
|---|---|---|---|---|---|
| 3,632 | 3,534 | 3,532 | 3,431 | 3,360 | 3,322 |
| 1,555 | 1,477 | 1,434 | 1,379 | 1,315 | 1,278 |
| 134 | 111 | 103 | 114 | 120 | 145 |
| 54 | 52 | 45 | 42 | 36 | 30 |
| 298 | 249 | 189 | 181 | 143 | 133 |
| $ 150,960,665 | $ 140,175,740 | $ 134,313,739 | $ 128,144,746 | $ 121,012,780 | $ 114,422,827 |
| $ 43,972,738 | $ 39,649,619 | $ 36,510,489 | $ 34,076,169 | $ 31,542,638 | $ 29,610,698 |
| $1,138,227,081 | $ 963,805,222 | $ 848,499,924 | $ 752,274,788 | $ 664,570,797 | $ 620,860,572 |
| 86.02% | 83.66% | 80.88% | 71.84% | 69.69% | 72.33% |
| $1,192,323,327 | $1,089,280,137 | $1,012,901,863 | $1,010,016,864 | $ 944,688,430 | $ 888,963,640 |
| $1,025,656,019 | $ 911,329,622 | $ 819,240,156 | $ 725,615,787 | $ 658,376,086 | $ 642,947,201 |
| $ 166,667,308 | $ 177,950,515 | $ 193,661,707 | $ 284,401,078 | $ 286,312,344 | $ 246,016,439 |
| $ 247,631,617 | $ 230,234,335 | $ 226,307,495 | $ 192,151,099 | $ 182,925,316 | $ 166,298,912 |
| $ 126,968,955 | $ 118,092,552 | $ 114,703,708 | $ 94,736,659 | $ 90,145,420 | $ 82,398,183 |
| $1,566,923,899 | $1,437,607,024 | $1,353,913,066 | $1,296,904,623 | $1,217,759,166 | $1,137,660,735 |

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| Fiscal 2008 | Fiscal 2007 | Fiscal 2006 | Fiscal 2005 | Fiscal 2004 | Fiscal 2003 |
|---|---|---|---|---|---|
| 8.00% | 8.00% | 8.00% | 8.00% | 8.00% | 8.00% |
| 13.16% | 12.83% | 12.82% | 13.11% | 12.77% | 12.17% |
| 12.56% | 14.01% | 15.66% | 22.51% | 23.64% | 20.78% |
| 13.75% | 15.50% | 18.00% | 24.00% | 21.00% | 18.25% |

# 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 contribution rates effective July 1, 2011 changed from a fixed rate of 8% to a rate which is at least 8% but not greater than 10% based on the total contribution expressed as a percentage of payroll after applying all required tax contributions. The employee rate, when such contributions total 25% or less, is set at 8%. The employee rate then increases 0.25% for each 0.75% increase in the total rate, subject to a maximum rate of 10%. The change does not apply to members whose earnable compensation is less than or equal to the poverty guidelines issued by the U. S. Department of Health and Human Services. 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.
A member may also elect to receive an actuarially reduced benefit which provides for an automatic 2 ½% annual compound increase in monthly retirement benefits based on the reduced benefit and commencing on the later of age fifty-five or retirement anniversary; this COLA is in addition to any ad hoc COLAs which are payable.

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

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

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

but at least one minor child, each child is entitled to receive forty percent of the deceased's average final compensation, not to exceed an aggregate of sixty percent of average final compensation.

DEFERRED RETIREMENT OPTION PLAN - In lieu of terminating employment and accepting a service retirement allowance, any member of the system who has at least twenty years of creditable service and who is eligible to receive a service retirement allowance may elect to participate in the deferred retirement option plan for up to thirty-six months and defer the receipt of benefits. Upon commencement of participation in the plan, membership in the system terminates and neither the employee nor employer contributions are payable. Compensation and creditable service will remain as they existed on the effective date of commencement of participation in the plan. The monthly retirement benefits that would have been payable, had the member elected to cease employment and receive a service retirement allowance, are paid into the deferred retirement option plan account. Upon termination of employment at the end of the specified period of participation, a participant in the program may receive, at his option, a lump sum payment from the account equal to the payments to the account, or a true annuity based upon his account, or he may elect any other method of payment if approved by the board of trustees. The monthly benefits that were being paid into the fund during the period of participation will begin to be paid to the retiree. If employment is not terminated at the end of the thirty-six months, payments into the account cease and the member resumes active contributing membership in the system. If the participant dies during the period of participation in the program, a lump sum payment equal to his account balance is paid to his named beneficiary or, if none, to his estate; in addition, normal survivor benefits are payable to survivors of retirees.

COST OF LIVING INCREASES - The board of trustees is authorized to grant retired members and widows of members who have retired an annual cost of living increase of up to 3% of their current benefit, and all retired members and widows who are sixty-five years of age and older a 2% increase in their original benefit. In order for the board to grant either of these increases the system must meet certain criteria detailed in the statute related to funding status and interest earnings. In lieu of these cost of living adjustments the board may also grant an increase in the form of "X×(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 | Decrease in Cost |
| Annual Rate of Salary Increase | Increase in Cost |
| Rates of Retirement | Increase in Cost |
| Rates of Termination | Decrease in Cost |
| Rates of Disability | Increase in Cost |
| Rates of Mortality | Decrease in Cost |

| | |
|---|---|
| ACTUARIAL COST METHOD: | Individual Entry Age Normal With Allocation of Cost Based on Earnings. Entry and Attained Ages Calculated on an Age Near Birthday Basis. |
| VALUATION INTEREST RATE: | 7.5% (Net of investment expense) |
| ACTUARIAL ASSET VALUES: | All assets are valued at market value adjusted to defer four-fifths of all earnings above or below the valuation interest rate in the valuation year, three-fifths of all earnings above or below the valuation interest rate in the prior year, two-fifths of all earnings above or below the valuation interest rate from two years prior, and one-fifth of all earnings above or below the valuation interest rate from three years prior. The resulting smoothed values are subject to a corridor of 85% to 115% of the market value of assets. If the smoothed value falls outside the corridor, the actuarial value is set equal to the average of the corridor limit and the smoothed value. |
| ACTIVE MEMBER, ANNUITANT, AND BENEFICIARY MORTALITY: | RP 2000 Combined Healthy Table set back 1 years for males and 1 year for females |
| 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 | 15.000% |
| 3 – 14 | 6.500% |
| 15 & over | 5.500% |

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

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

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

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

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

| Ages | Retirement Rates |
|---|---|
| 74 & Under | 0.20 |
| 75 & Over | 1.00 |

DISABILITY RATES: 55% of the disability rates used for the 21st 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 | Factor | Service | Factor |
|---|---|---|---|
| <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 Age | % With Children | Number of Children | Average 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 | Active Male Mortality | Active Female Mortality | Retired Male Mortality | Retired Female Mortality | Retirement Rates | DROP Entry Rates | Disability Rates |
|---|---|---|---|---|---|---|---|
| 18 | 0.00030 | 0.00018 | 0.00030 | 0.00018 | 0.00000 | 0.00000 | 0.00083 |
| 19 | 0.00032 | 0.00019 | 0.00032 | 0.00019 | 0.00000 | 0.00000 | 0.00083 |
| 20 | 0.00033 | 0.00019 | 0.00033 | 0.00019 | 0.00000 | 0.00000 | 0.00083 |
| 21 | 0.00035 | 0.00019 | 0.00035 | 0.00019 | 0.00000 | 0.00000 | 0.00083 |
| 22 | 0.00036 | 0.00019 | 0.00036 | 0.00019 | 0.00000 | 0.00000 | 0.00083 |
| 23 | 0.00037 | 0.00019 | 0.00037 | 0.00019 | 0.00000 | 0.00000 | 0.00083 |
| 24 | 0.00037 | 0.00020 | 0.00037 | 0.00020 | 0.00000 | 0.00000 | 0.00083 |
| 25 | 0.00038 | 0.00020 | 0.00038 | 0.00020 | 0.00000 | 0.00000 | 0.00083 |
| 26 | 0.00038 | 0.00021 | 0.00038 | 0.00021 | 0.00000 | 0.00000 | 0.00083 |
| 27 | 0.00038 | 0.00021 | 0.00038 | 0.00021 | 0.00000 | 0.00000 | 0.00083 |
| 28 | 0.00038 | 0.00022 | 0.00038 | 0.00022 | 0.00000 | 0.00000 | 0.00083 |
| 29 | 0.00039 | 0.00024 | 0.00039 | 0.00024 | 0.00000 | 0.00000 | 0.00083 |
| 30 | 0.00041 | 0.00025 | 0.00041 | 0.00025 | 0.00000 | 0.00000 | 0.00083 |
| 31 | 0.00044 | 0.00026 | 0.00044 | 0.00026 | 0.00000 | 0.00000 | 0.00083 |
| 32 | 0.00050 | 0.00031 | 0.00050 | 0.00031 | 0.00000 | 0.00000 | 0.00083 |
| 33 | 0.00056 | 0.00035 | 0.00056 | 0.00035 | 0.00000 | 0.00000 | 0.00083 |
| 34 | 0.00063 | 0.00039 | 0.00063 | 0.00039 | 0.00000 | 0.00000 | 0.00083 |
| 35 | 0.00070 | 0.00044 | 0.00070 | 0.00044 | 0.00000 | 0.00000 | 0.00094 |
| 36 | 0.00077 | 0.00047 | 0.00077 | 0.00047 | 0.00000 | 0.00000 | 0.00105 |
| 37 | 0.00084 | 0.00051 | 0.00084 | 0.00051 | 0.00000 | 0.00000 | 0.00116 |
| 38 | 0.00090 | 0.00055 | 0.00090 | 0.00055 | 0.00000 | 0.00000 | 0.00132 |
| 39 | 0.00096 | 0.00060 | 0.00096 | 0.00060 | 0.00000 | 0.00000 | 0.00149 |
| 40 | 0.00102 | 0.00065 | 0.00102 | 0.00065 | 0.00000 | 0.00000 | 0.00171 |
| 41 | 0.00108 | 0.00071 | 0.00108 | 0.00071 | 0.08000 | 0.15000 | 0.00193 |
| 42 | 0.00114 | 0.00077 | 0.00114 | 0.00077 | 0.08000 | 0.15000 | 0.00215 |
| 43 | 0.00122 | 0.00085 | 0.00122 | 0.00085 | 0.08000 | 0.15000 | 0.00242 |
| 44 | 0.00130 | 0.00094 | 0.00130 | 0.00094 | 0.08000 | 0.15000 | 0.00275 |
| 45 | 0.00140 | 0.00103 | 0.00140 | 0.00103 | 0.08000 | 0.15000 | 0.00314 |
| 46 | 0.00151 | 0.00112 | 0.00151 | 0.00112 | 0.08000 | 0.15000 | 0.00358 |
| 47 | 0.00151 | 0.00112 | 0.00162 | 0.00122 | 0.08000 | 0.15000 | 0.00402 |
| 48 | 0.00173 | 0.00133 | 0.00173 | 0.00133 | 0.08000 | 0.15000 | 0.00457 |
| 49 | 0.00186 | 0.00143 | 0.00186 | 0.00143 | 0.08000 | 0.15000 | 0.00517 |
| 50 | 0.00200 | 0.00155 | 0.00200 | 0.00155 | 0.08000 | 0.15000 | 0.00589 |
| 51 | 0.00214 | 0.00168 | 0.00535 | 0.00234 | 0.04000 | 0.15000 | 0.00671 |
| 52 | 0.00229 | 0.00181 | 0.00553 | 0.00246 | 0.04000 | 0.25000 | 0.00759 |
| 53 | 0.00245 | 0.00197 | 0.00564 | 0.00265 | 0.04000 | 0.25000 | 0.00864 |
| 54 | 0.00262 | 0.00213 | 0.00572 | 0.00290 | 0.04000 | 0.25000 | 0.00979 |
| 55 | 0.00281 | 0.00232 | 0.00580 | 0.00319 | 0.14000 | 0.25000 | 0.01111 |
| 56 | 0.00303 | 0.00253 | 0.00590 | 0.00353 | 0.14000 | 0.25000 | 0.01265 |
| 57 | 0.00331 | 0.00276 | 0.00612 | 0.00393 | 0.14000 | 0.25000 | 0.01436 |
| 58 | 0.00363 | 0.00301 | 0.00644 | 0.00438 | 0.14000 | 0.11000 | 0.01628 |
| 59 | 0.00400 | 0.00329 | 0.00690 | 0.00492 | 0.14000 | 0.11000 | 0.01854 |
| 60 | 0.00441 | 0.00360 | 0.00749 | 0.00553 | 0.14000 | 0.11000 | 0.02684 |
| 61 | 0.00488 | 0.00393 | 0.00820 | 0.00620 | 0.14000 | 0.11000 | 0.02684 |
| 62 | 0.00538 | 0.00429 | 0.00900 | 0.00692 | 0.14000 | 0.38000 | 0.02684 |
| 63 | 0.00592 | 0.00466 | 0.00991 | 0.00769 | 0.14000 | 0.38000 | 0.02684 |
| 64 | 0.00647 | 0.00504 | 0.01095 | 0.00851 | 0.50000 | 0.38000 | 0.02684 |
| 65 | 0.00703 | 0.00543 | 0.01212 | 0.00939 | 0.50000 | 0.38000 | 0.02684 |

# GLOSSARY

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

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

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

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

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

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

**Actuarially Required Net Direct Combined Contribution** – The sum of the actuarially required employee contributions and net direct employer contributions after reduction for projected Insurance Premium Taxes due to the system.

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

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

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

**Amortization Payment** - That portion of the pension plan contribution designated to pay interest and reduce the outstanding principal balance of unfunded actuarial accrued liability. If the amortization

payment is less than the accrued interest on the unfunded actuarial accrued liability the outstanding principal balance will increase.

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

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

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

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

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

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

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

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

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

**NOTES:**