

**ASSESSORS'
RETIREMENT FUND**

ACTUARIAL VALUATION AS OF
SEPTEMBER 30, 2015

G. S. CURRAN & COMPANY, LTD.

Actuarial Services

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January 21, 2016

Board of Trustees
Louisiana Assessors' Retirement Fund
P.O. Box 14699
Baton Rouge, LA 70898-4699

Ladies and Gentlemen:

We are pleased to present our report on the actuarial valuation of the Louisiana Assessors' Retirement Fund for the fiscal year ending September 30, 2015. 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 Louisiana Assessors' Retirement Fund of the State of Louisiana. The primary purpose of this report is to determine the actuarially required contribution for the retirement system for the fiscal year ending September 30, 2016, and to recommend the net direct employer contribution rate for fiscal 2017. This report does not contain the information necessary for accounting disclosures as required by Governmental Accounting Standards Board (GASB) Statements 67 and 68; that information is included in a separate report. This report was prepared exclusively for the Louisiana Assessors' Retirement Fund for a specific limited purpose. It is not for the use or benefit of any third party for any purpose.

In our opinion, all of the assumptions on which this valuation is based are reasonable individually and in the aggregate. Both economic and demographic assumptions are based on our expectations for future experience for the fund. 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.



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

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COMMENTS ON DATA

For the valuation, the administrative staff of the system furnished a census on electronic media 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, 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 757 active members in the system of whom 300 members have vested retirement benefits; 544 former members or their beneficiaries are receiving retirement benefits. An additional 92 terminated members have contributions remaining on deposit with the system; of this number, 13 have vested rights for future retirement benefits. All participant data is as of September 30, 2015. 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 administrator 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 Hawthorne, Waymouth, and Carroll, L.L.P. As indicated in the system's audit report, the net market value of system's assets was \$310,262,528 as of September 30, 2015. Net investment income for fiscal 2015 measured on a market value basis amounted to a loss of \$5,438,243. Contributions to the system for the fiscal year totaled \$22,130,197; benefits and expenses amounted to \$20,474,523.

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 Frozen Attained Age Normal actuarial cost method with the unfunded accrued liability frozen as of September 30, 1989. Under the provisions of Louisiana R.S. 11:103 the unfunded accrued liability which was determined to be \$27,874,011 as of September 30, 1989, was amortized over forty years with payments increasing at 3.5% per year. Payroll growth in excess of 3.5% per year will reduce future amortization payments as a percent of payroll; payroll growth less than 3.5% will increase future payments as a percent of payroll. Under the Frozen Attained Age Normal Cost Method, actuarial gains and losses are spread over future normal costs. Thus, favorable plan experience will lower future normal costs; unfavorable experience will cause future normal costs to increase. In addition, changes in benefits and assumptions are also spread over future normal costs.

Prior to the passage of Act 296 in the 2009 legislative session, as outlined by R. S. 11:105, in any year in which the net direct employer contribution is scheduled to decrease, the board of trustees could freeze the net direct employer contribution rate and use the excess funds collected, if any, to reduce the frozen unfunded actuarial accrued liability. Also, in any year in which the board elected to increase contributions pursuant to R.S. 11:106 the excess funds, if any, were used to reduce the system's frozen unfunded actuarial accrued liability. Notwithstanding such a decrease, payments are made according to the regular amortization schedule, thereby reducing the amortization period. Such additional unfunded liability payments of \$791,748; \$101,831; \$538,661; \$1,020,879; \$2,890,530; and \$7,988,122 were made in fiscal 1999, fiscal 2000, fiscal 2003, fiscal 2006, fiscal 2007, and fiscal 2008 respectively. In addition, the Board of Trustees voted to maintain the net direct employer contribution rate at 13.50% for Fiscal 2009 instead of lowering the rate to the minimum recommended employer contribution rate of 4.75%. This freeze resulted in additional collections of \$2,939,108 during fiscal 2009, which under the provisions of Act 296 were credited to the Funding Deposit Account. For fiscal 2010 the contribution rate was maintained at 13.50%. The additional funds collected, amounting to \$3,930,043, were credited to the Funding Deposit Account. For fiscal 2011 the contribution rate was again maintained at 13.50%. The additional funds collected, amounting to \$1,619,995, were also credited to the Funding Deposit Account. For fiscal 2012, the contribution rate was maintained at 13.50%. The additional funds collected, amounting to \$1,469,805, were also credited to the Funding Deposit Account. For fiscal 2013, the contribution rate was maintained at 13.50%. The additional funds collected, amounting to \$1,442,928, were also credited to the Funding Deposit Account. For fiscal 2014, the contribution rate was again maintained at 13.50%; the additional funds collected, amounting to \$2,275,021, were also credited to the Funding Deposit Account. For fiscal 2015, the contribution rate was again maintained at 13.50%; the additional funds collected, amounting to \$2,911,471, were also credited to the Funding Deposit Account.

The current year actuarial assumptions utilized for this report are based on the results of an actuarial experience study for the period October 1, 2009 – September 30, 2014, unless otherwise specified in this report. Based on the results of this study and expectations of future experience, retirement, disability, and withdrawal rates were changed. Family statistics were also updated based on more recent measures available from the United States Census Bureau. The new assumptions are listed in the back of this report. In the case of mortality, the data from this plan was combined with two other statewide plans which have similar workforce composition in order to produce more credible experience. The aggregated data was collected over the period from 2009 through 2014. The data was then assigned credibility weighting and combined with a standard table to produce current levels of mortality. This mortality was then projected forward to a period equivalent to the estimated duration of

the fund's liabilities. The RP-2000 Healthy Annuitant Table set forward 1 year and projected to 2030 for males and the RP-2000 Healthy Annuitant Table projected to 2030 for females were selected for annuitant and beneficiary mortality. For employees, the RP-2000 Employee table setback 4 years for males and setback 3 years for females were selected. The RP-2000 Disabled Lives Mortality Table set back 5 years for males and set back 3 years for females was selected for disabled annuitants. Setbacks in these tables were used to approximate mortality improvement.

In determining the valuation interest rate, consideration was given to several factors. First consensus estimates of rates of return, standard deviations, and correlation coefficients for asset classes derived from various asset consulting firms were developed. These factors were used to derive forward estimates of the Fund's portfolio earnings rate. Consideration was also given to the September 30, 2015 report of the Bogdahn Group on future expected rates of return for the current portfolio asset allocation. This report projected future average portfolio nominal returns of 8.43%. Our review of reasonable return expectations based on the current asset allocation and the assumed rate of inflation of 2.5% produced a range of results from 5.26% to 7.66%. Based on the results of this interest rate assumption review and a desire to reduce the long-term risk of the retirement fund, the assumed rate of return for the valuation was reduced from 7.25% to 7.00% as of September 30, 2015. Finally, the salary increase rate for the valuation was reduced to 5.75% based on forward estimates of future increases in pay resulting from three sources; inflation, merit, and productivity. An inflation rate of 2.5% was implicit in both the assumed rate of return and rate of salary increases. Additional details are given in the complete Experience Report for fiscal years 2010 through 2014.

Although the board of trustees has authority to grant ad hoc Cost of Living Increases (COLAs) under limited circumstances, these COLAs have not been shown to have a historical pattern, the amounts of the COLAs have not been relative to a defined cost-of-living or inflation index, and there is no evidence to conclude that COLAs will be granted on a predictable basis in the future. Therefore, for purposes of determining the present value of benefits, these COLAs were deemed not to be substantively automatic and the present value of benefits excludes COLAs not previously granted by the board of trustees.

The current year actuarial assumptions utilized for the report are outlined on pages thirty-eight through forty-two. With the exception of the assumptions described above, all assumptions were the same as those used in the fiscal 2014 valuation. All assumptions used are based on estimates of future long-term experience for the fund. All calculations, recommendations, and conclusions are based on the assumptions specified. To the extent that prospective experience differs from that assumed, adjustments will be required to contribution levels. Such differences will be revealed in future actuarial valuations. The net effect of the changes in assumptions on the normal cost accrual rate was a decrease of 0.58%.

CHANGES IN PLAN PROVISIONS

The following statutes affecting the retirement system were enacted during the 2015 Regular Session of the Louisiana Legislature:

Act 370 changed the statutes related to the Funding Deposit Account by adding an allowed use of such funds to provide for cost-of-living increases subject to certain limitations.

ASSET EXPERIENCE

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

	<u>Market Value</u>	<u>Actuarial Value</u>
2006	9.1%	* 14.0%
2007	14.7%	12.1%
2008	-13.7%	1.9%
2009	6.6%	6.8%
2010	7.7%	5.1%
2011	-1.2%	2.6%
2012	18.4%	3.5%
2013	13.4%	9.2%
2014	9.1%	9.8%
2015	-1.7%	7.4%

* Includes effect of change in asset valuation method. Effective with the 2006 valuation the method was changed from smoothing capital gains and losses over 3 years to smoothing investment income above or below the assumed rate of return over 5 years.

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 and dividends. 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 2015, the fund earned \$3,611,785 of dividends, interest and other recurring income. During the same period, the Fund had net realized and unrealized capital losses on investments of \$7,745,211. This loss was increased by investment expenses of \$1,304,817. The geometric mean of the market value rates of return measured over the last ten years was 5.8%. For the last twenty years, the geometric mean returns was 6.9%.

The actuarial rate of return is presented for comparison to the assumed long-term rate of return of 7.25% used for the prior valuation. The current assumed rate of return is 7.00%. This rate is calculated based on the actuarial value of assets and the market value income adjusted for actuarial smoothing as given in Exhibit VI. Investment income used to calculate this yield is based upon a smoothing of investment income above or below the valuation interest rate over a five year period subject to limits as described in the section detailing actuarial assumptions. The difference between rates of return on an actuarial and market value basis results from the smoothing utilized. In the future, yields in excess of the 7.00% assumption will reduce future costs; yields below 7.00% will increase future costs. For fiscal 2015, the system experienced net actuarial investment earnings of \$491,999 more than the actuarial assumed earnings rate of 7.25% in effect for fiscal 2015 (Beginning with fiscal 2016, actuarial investment gains and losses will be measured against the 7.00% valuation interest rate). This surplus in earnings produced an actuarial gain and decreased the normal cost accrual rate by 0.1149%.

DEMOGRAPHICS AND LIABILITY EXPERIENCE

A reconciliation of the census for the system is given in Exhibit IX. The average active member is 48 years old with 11.93 years of service and an annual salary of \$55,072. The system's active membership remained level during the fiscal year. The plan has experienced a decrease in the active plan population of 11 members over the last five years. A review of the active census by age indicates that over the last ten years the population has changed in several age subgroups but no overall trend is observable. Within the active census by service, the fund has shown an increase in the lower service category.

The average regular retiree is 72 years old with a monthly benefit of \$2,897. The number of retirees and beneficiaries receiving benefits from the system increased by 9 during the fiscal year. Over the last five years, the number of retirees has increased by 84; during this same period, annual benefits in payment increased by \$6,726,737 (i.e. an increase of 57%).

Plan liability experience for fiscal 2015 was favorable. Active retirements and disabilities were slightly below projected levels. Retiree deaths were above assumed levels. In addition, salaries increased less than expected. These factors tend to reduce costs. Withdrawals significantly below expected levels tend to increase costs. In aggregate, liability experience reduced the normal cost accrual rate by 0.7439%.

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 payment on the unfunded actuarial accrued liability. The normal cost refers to the portion of annual cost based on the salary of active participants. 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. Under the funding method used for the plan, changes in plan experience, benefits, or assumptions do not affect the frozen unfunded actuarial accrued liability. These items increase or decrease future normal costs.

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.

The derivation of the actuarially required contribution for the current fiscal year is given in Exhibit I. The normal cost for fiscal 2016 as of October 1, 2015 is \$11,159,901. The amortization payment on the fund's frozen unfunded actuarial accrued liability as of October 1, 2015, is \$3,255,941. The total actuarially required contribution is determined by adjusting these two values for interest (since payments are made throughout the fiscal year) and adding estimated administrative expenses. As given on line 15 of Exhibit I the total actuarially required contribution for fiscal 2016 is \$15,210,298. When this amount is reduced by projected tax contributions and revenue sharing funds, the resulting employers' net direct actuarially required contribution for fiscal 2016 is \$2,021,059 or 4.75% of projected payroll.

Liability and asset experience as well as changes in assumptions and benefits can increase or decrease plan costs. In addition to these factors, any COLA granted in the prior fiscal year will increase required contributions. New entrants to the system can also increase or decrease costs as a percent of payroll depending upon their demographic distribution and other factors related to prior plan experience. Finally, contributions above or below requirements may reduce or increase future costs.

The effects of various factors on the fund's cost structure are outlined below:

Employer's Normal Cost Accrual Rate – Fiscal 2015	29.5940%
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Factors Increasing the Normal Cost Accrual Rate:

None

Factors Decreasing the Normal Cost Accrual Rate:

Assumption Changes	0.5769%
Asset Experience Gain	0.1148%
Plan Liability Experience Gain	0.7439%
New Members	0.6938%

Employer's Normal Cost Accrual Rate – Fiscal 2016	27.4646%
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In addition to the above factors, payroll growth affects plan costs to the extent that payments on the system's unfunded liability are on a schedule that varies from actual trends in payroll growth or decline. If payroll changes at rates not consistent with the amortization schedule the result will be costs that change as a percentage of payroll. For fiscal 2016, the net effect of the change in payroll and the shift in the valuation interest rate on amortization costs was to decrease such costs by 0.12% of payroll. Required net direct employer contributions are also affected by the available ad valorem taxes and revenue sharing funds which the system receives each year. When these funds change as a percentage of payroll, net direct employer contributions are adjusted accordingly. We estimate that these funds will increase by 0.10% of payroll in fiscal 2016.

Although the actuarially required net direct employer contribution rate for fiscal 2016 is 4.75%; the actual employer contribution rate for fiscal 2016 is 13.50% of payroll. Any funds collected above the actuarially required contributions for fiscal 2015 will be added to the Funding Deposit Account. R.S.

11:103 requires that the net direct employer contributions be rounded to the nearest 0.25%, hence we are recommending a minimum net direct employer contribution rate of 4.75% for fiscal 2017.

R.S. 11:106 allows the board to set the employer contribution rate at a level not to exceed 3% above the minimum net direct employer contribution rate. Under the provisions of R.S. 11:107 the Board may set the net direct employer contribution rate at any rate between 4.75% and 13.50% of payroll. If the contribution rate is set above the minimum recommended rate, the surplus contributions collected, if any, are credited to the Funding Deposit Account. For fiscal 2015, the Funding Deposit Account increased due to additional interest accrual and excess contributions resulting from the collection of 13.50% from employers during fiscal 2015. During fiscal 2015, the Funding Deposit Account increased from \$17,024,774 to \$21,170,541. The funds in this account can be used to reduce the unfunded liability of the fund, reduce future normal costs, offset direct employer contribution increases, or fund available cost of living increases.

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 two factors. First, we have determined that based on current assets and demographics, for each percentage earnings in a single year under (or over) the assumed rate of return on the actuarial value of assets, there will be a corresponding increase (or reduction) in the normal cost accrual rate of 0.75% for the fund. We have also determined that a 1% reduction in the valuation interest rate for the Fund would increase the actuarially required contribution rate for fiscal 2016 by 12.09% of payroll.

In addition to calculating the actuarially required contribution to the fund, we have also calculated the ratio of the system's assets to liabilities. When the actuarial value of assets is divided by the entry age normal accrued liability for the fund the result is 88.15% as of September 30, 2015. This value in isolation does not give a measure of the ability of the fund to pay benefits in the future or indicate that future contributions are likely to be greater or less than current contributions. In addition, the ratio cannot be used to compare the relative strength of different retirement systems. However, the trend of this ratio over time can give some insight into the financial health of the plan. Even in this regard caution is warranted since market fluctuations in asset values and changes in plan assumptions can distort the underlying trends in this value.

COST OF LIVING INCREASES

During fiscal 2015, the actual cost of living (as measured by the US Department of Labor CPI-U) decreased by 0.04%. Cost of living provisions for the system are detailed in R.S. 11:241, R.S. 11:246, and R.S. 11:1461. R.S. 11:241 provides that cost of living benefits shall be in the form (unless the board otherwise specifies) of $\$X \times (A+B)$ where X is at most \$1 and "A" represents the number of years of credited service accrued at retirement or at death of the member or retiree and "B" is equal to the number of years since retirement or since death of the member or retiree to June 30th 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. R.S. 11:1461 allows the Board of Trustees to provide a cost of living increase from excess interest to members who have been retired for at least one full calendar year. The increase cannot exceed the lesser of 3% of the retiree's original benefit or an increase of \$300 per year for each year of retirement. 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.

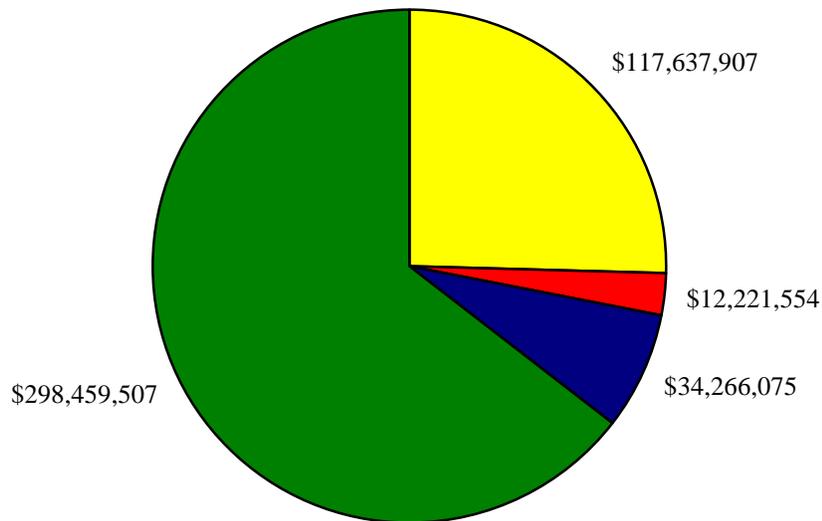
R.S. 11:1461 and R.S. 11:246 provide that those COLA's may be paid only when the investment earnings of the system are sufficiently above the valuation interest rate to fund the benefit granted. For fiscal 2015 the fund achieved an actuarial rate of return of 7.42% and \$491,999 in excess interest was produced.

Based upon the irrevocable election of the Board of Trustees to accept the alternative method for determining eligibility to authorize cost of living increases under Act 170 of the 2013 Legislative Session, the ratio of the plan's assets to benefit obligations must meet the criteria established in R.S. 11:243. Under this section, the system would only be authorized to grant a COLA in fiscal years in which the rate of return on an actuarial basis exceeds the valuation interest rate and one of the following applies:

1. The system has a funded ratio of 90% or more and has not granted a benefit increase to retirees, survivors, and beneficiaries in the most recent fiscal year.
2. The system has a funded ratio of 80% or more and has not granted a benefit increase to retirees, survivors, and beneficiaries in the two most recent fiscal years.
3. The system has a funded ratio of 70% or more and has not granted a benefit increase to retirees, survivors, and beneficiaries in the three most recent fiscal years.

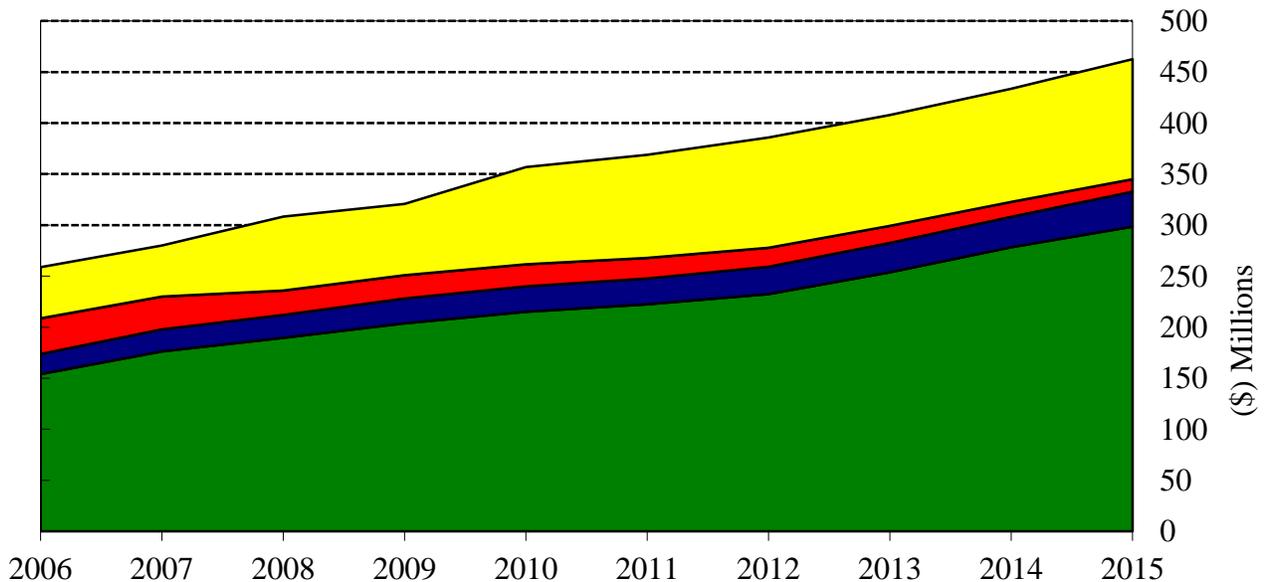
Despite the fact that the Fund experienced excess interest earnings during 2015, since the Board granted a cost of living increase effective October 1, 2014 under R.S. 11:241, the Fund is not authorized under R.S. 11:243 to grant a cost of living increase in 2016 for regular retirees.

Components of Present Value of Future Benefits September 30, 2015



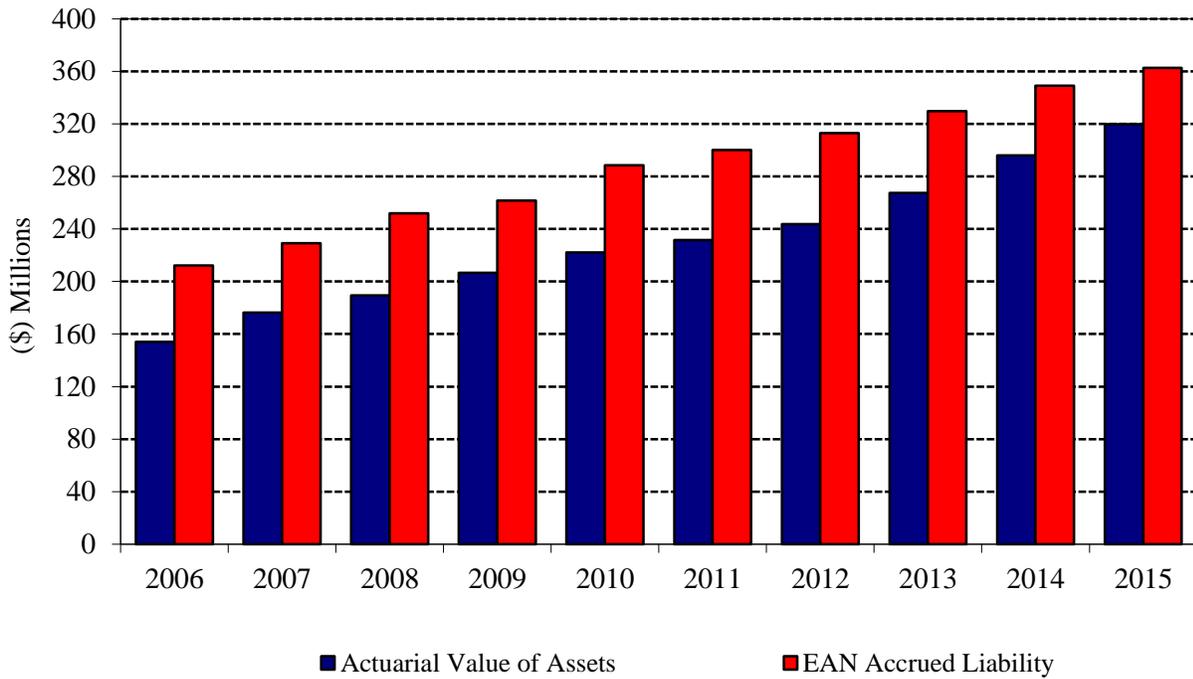
- Present Value of Future Employer Normal Cost
- Frozen Unfunded Accrued Liability
- Present Value of Future Employee Contributions
- Actuarial Value of Assets (Net of Funding Deposit Account)

Components of Present Value of Future Benefits

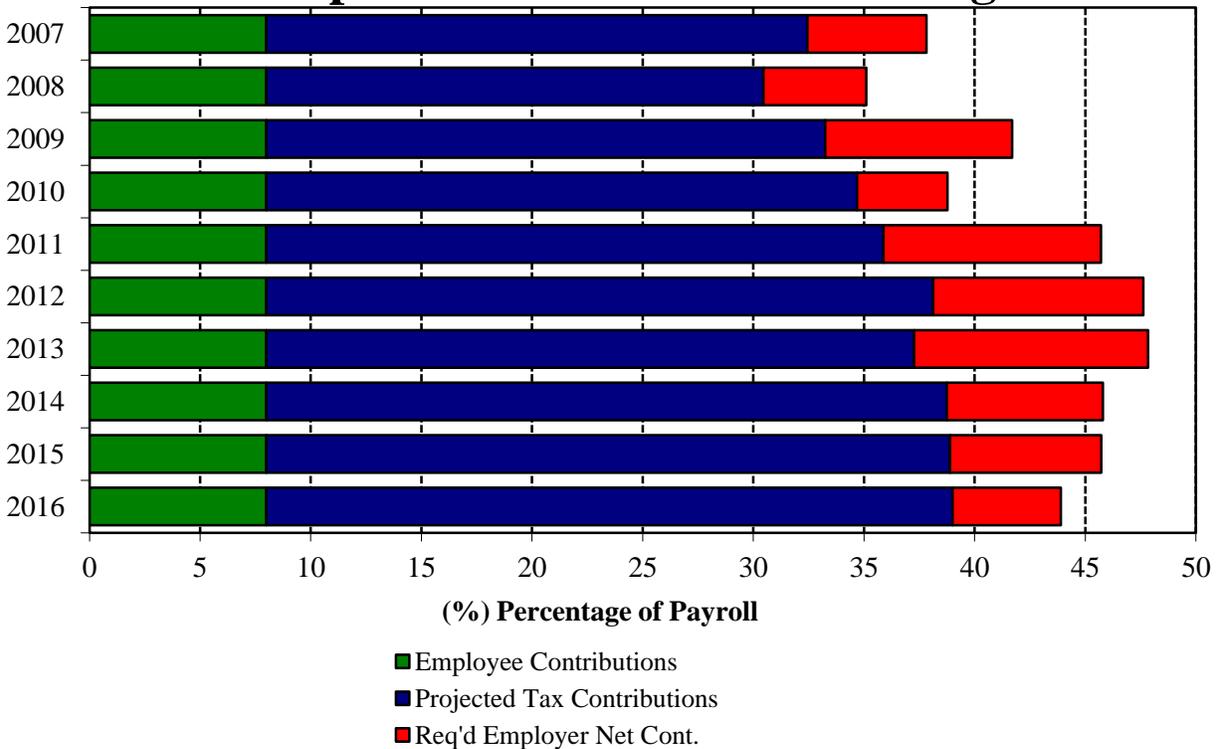


- Present Value of Future Employer Contributions
- Frozen UAL
- Present Value of Future Employee Contributions
- Actuarial Value of Assets (Net of Funding Deposit Account)

Actuarial Value of Assets vs. EAN Accrued Liability

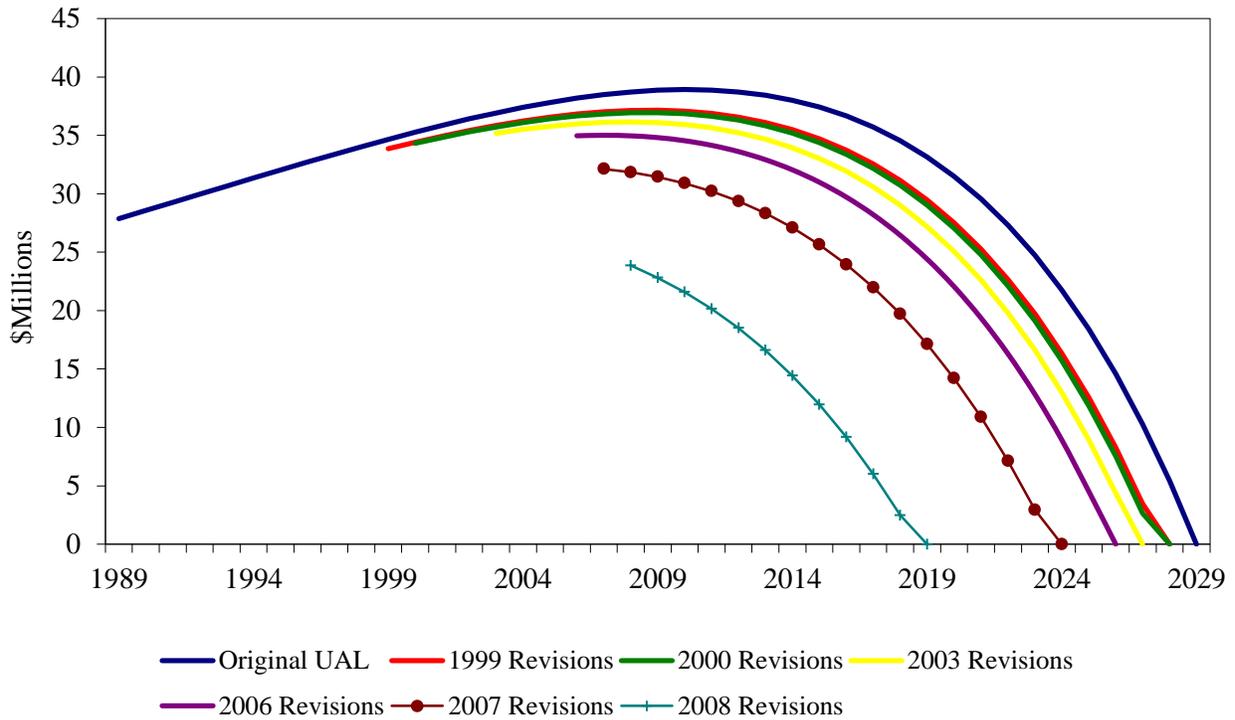


Components of Actuarial Funding

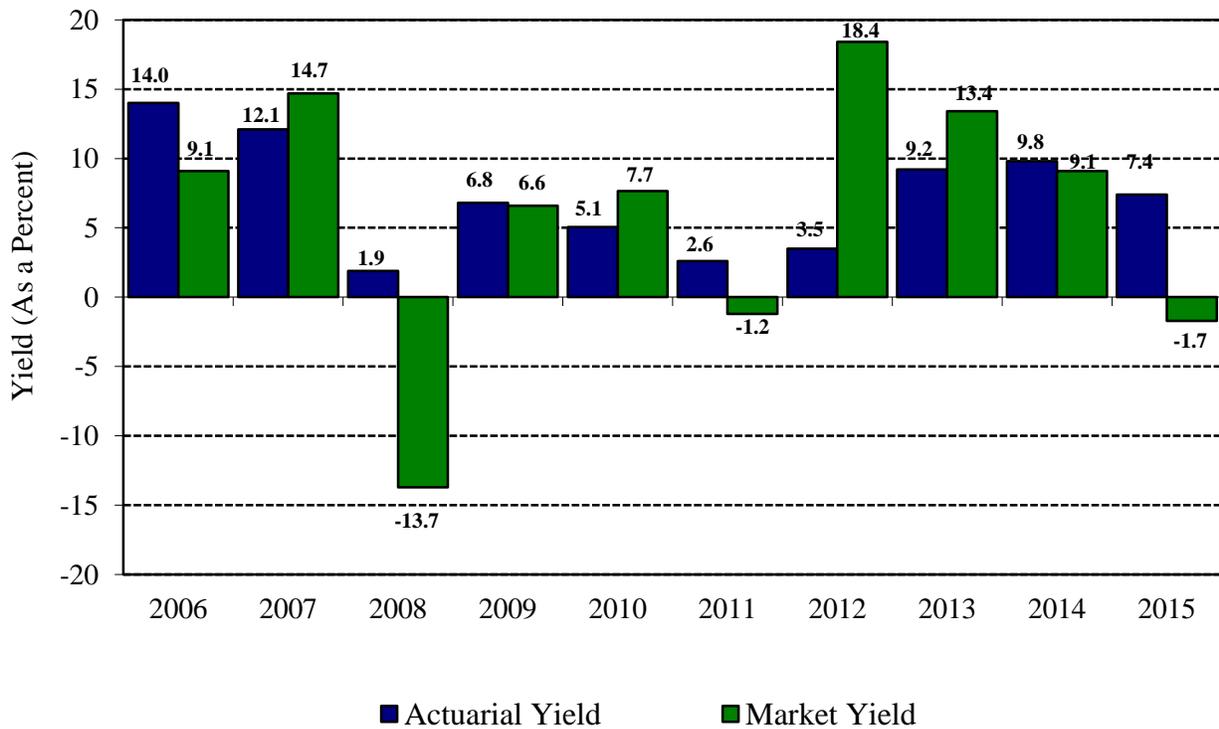


Actuarially Required Tax Contributions consist of the lesser of Actuarially Required Contributions and amount of taxes divided by the projected valuation payroll.

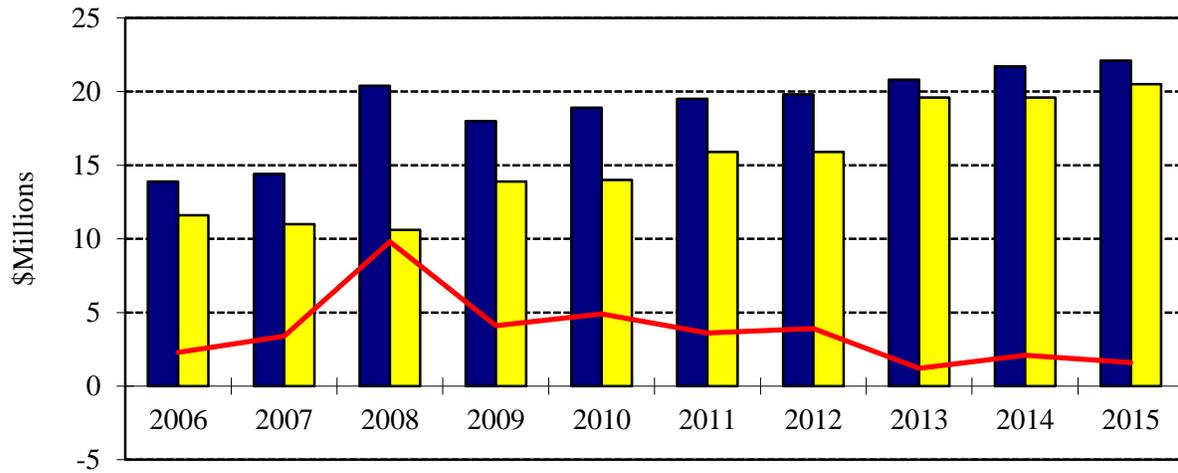
Frozen Unfunded Actuarial Accrued Liability



Historical Asset Yields

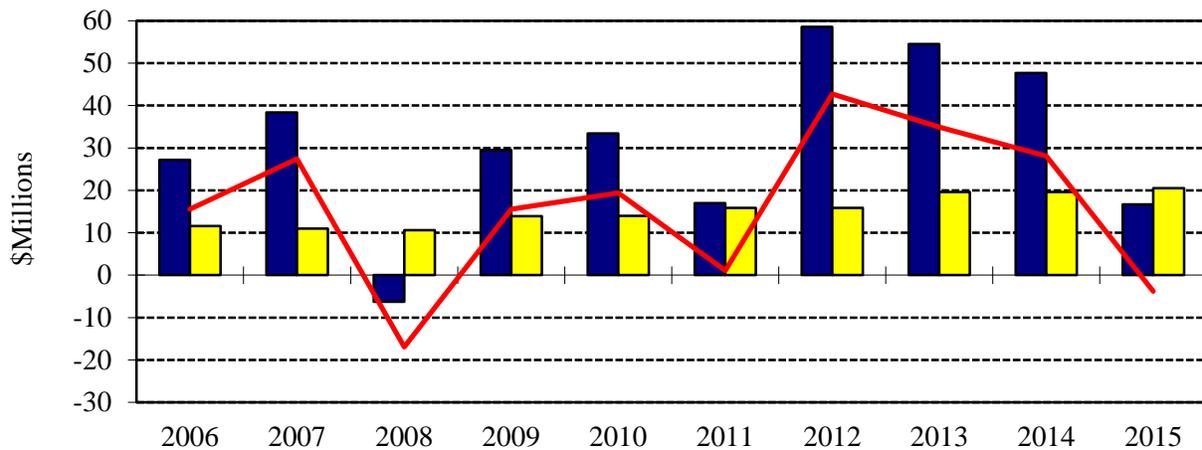


Net Non-Investment Income



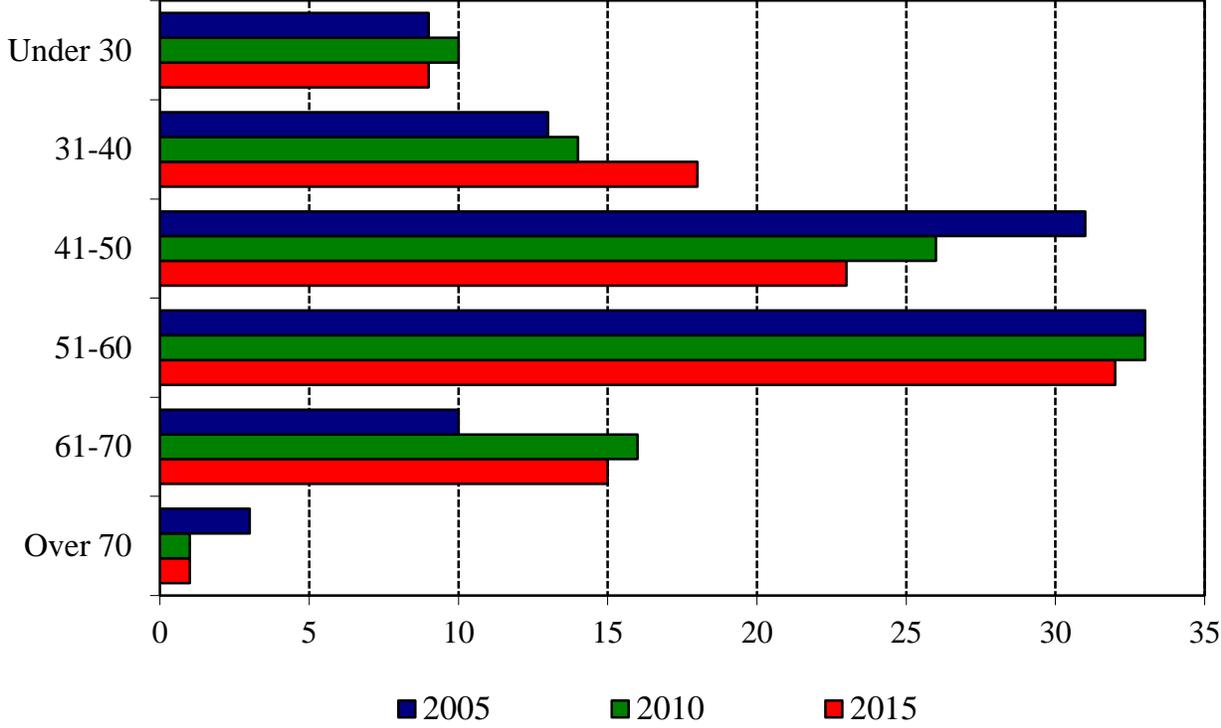
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Non-Investment Income (\$Mil)	■	13.9	14.4	20.4	18.0	18.9	19.5	19.8	20.8	21.7	22.1
Benefits and Expenses (\$Mil)	■	11.6	11.0	10.6	13.9	14.0	15.9	15.9	19.6	19.6	20.5
Net Non-Investment Income (\$Mil)	—	2.3	3.4	9.8	4.1	4.9	3.6	3.9	1.2	2.1	1.6

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

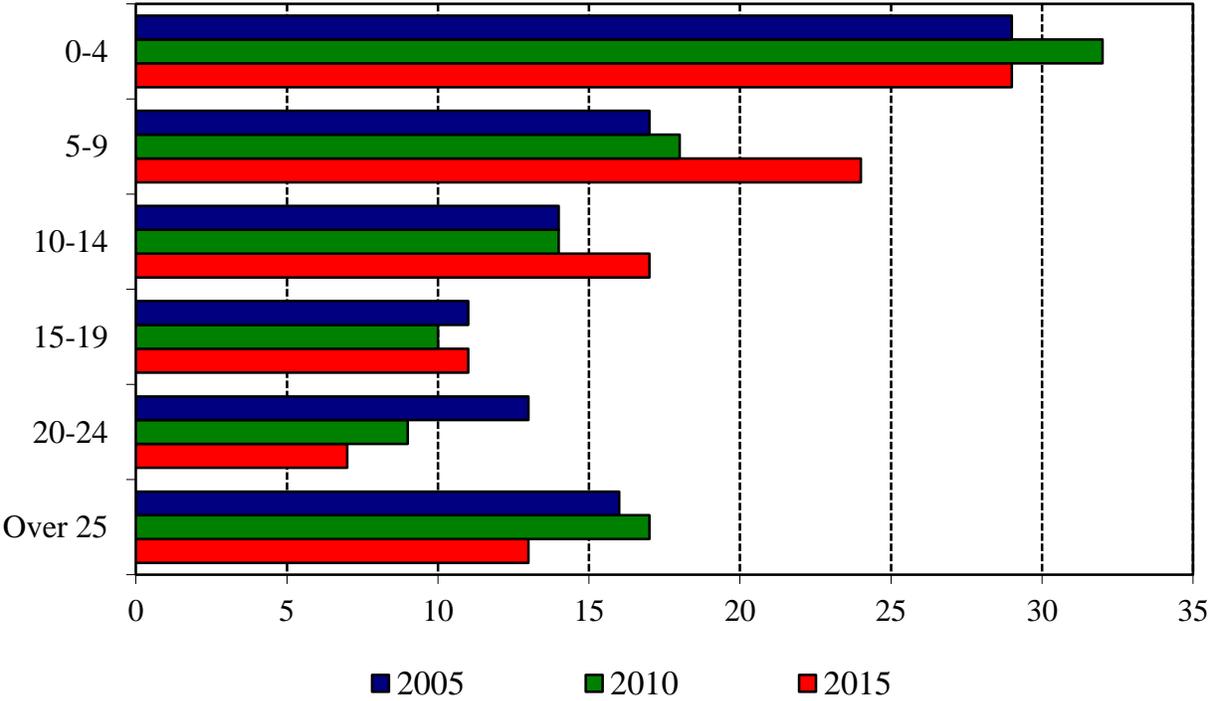


		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total Income (\$Mil)	■	27.2	38.4	-6.3	29.5	33.4	17.0	58.6	54.5	47.7	16.7
Benefits and Expenses (\$Mil)	■	11.6	11.0	10.6	13.9	14.0	15.9	15.9	19.6	19.6	20.5
Net Change in MVA (\$Mil)	—	15.6	27.4	-16.9	15.6	19.4	1.1	42.7	34.9	28.1	-3.8

Active – Census by Age (as a percent)



Active – Census by Service (as a percent)



EXHIBITS

EXHIBIT I
ANALYSIS OF ACTUARIALLY REQUIRED CONTRIBUTIONS

1. Present Value of Future Benefits	\$	462,585,043
2. Funding Deposit Account Credit Balance	\$	21,170,541
3. Frozen Unfunded Actuarial Accrued Liability	\$	12,221,554
4. Actuarial Value of Assets	\$	319,630,048
5. Present Value of Future Employee Contributions	\$	34,266,075
6. Present Value of Future Employer Normal Costs (1+2 – 3 – 4 – 5).....	\$	117,637,907
7. Present Value of Future Salaries	\$	428,325,929
8. Employer Normal Cost Accrual Rate (6÷7)		27.464578%
9. Projected Fiscal 2016 Salary for Current Membership.....	\$	40,633,797
10. Employer Normal Cost as of October 1, 2015 (8 x 9).....	\$	11,159,901
11. Amortization Payment on remaining frozen Unfunded Accrued Liability with Payments increasing at 3.50% per year	\$	3,255,941
12. TOTAL Employer Normal Cost and Amortization Payment (10 + 11)	\$	14,415,842
13. Normal Cost Adjusted for Midyear Payment	\$	14,911,863
14. Estimated Administrative Cost for Fiscal 2016	\$	298,435
15. GROSS Employer Actuarially Required Contribution for Fiscal 2016 (13 + 14)	\$	15,210,298
16. Projected Ad Valorem Tax Contributions for Fiscal 2016	\$	12,838,130
17. Projected Revenue Sharing Funds for Fiscal 2016	\$	351,109
18. Net Direct Employer Actuarially Required Contribution for Fiscal 2016 (15 – 16 – 17).....	\$	2,021,059
19. Projected Payroll for Fiscal 2016.....	\$	42,544,277
20. Employers' Minimum Net Direct Actuarially Required Contribution as a % of Projected Payroll for Fiscal 2016 (18 ÷ 19).....		4.75%
21. Minimum Recommended Net Direct Employer Contribution Rate for Fiscal 2017 (20, Rounded to nearest 0.25%).....		4.75%

EXHIBIT II
PRESENT VALUE OF FUTURE BENEFITS

PRESENT VALUE OF FUTURE BENEFITS FOR ACTIVE MEMBERS:

Retirement Benefits	\$ 264,052,683
Survivor Benefits.....	5,625,116
Disability Benefits.....	1,224,066
Vested Termination Benefits.....	2,011,291
Refunds of Contributions	1,874,004

TOTAL Present Value of Future Benefits for Active Members..... \$ 274,787,160

PRESENT VALUE OF FUTURE BENEFITS FOR TERMINATED MEMBERS:

Terminated Vested Members Due Benefits at Retirement.....	\$ 3,417,594
Terminated Members with Reciprocals	
Due Benefits at Retirement	0
Terminated Members Due a Refund	504,125

TOTAL Present Value of Future Benefits for Terminated Members..... \$ 3,921,719

PRESENT VALUE OF FUTURE BENEFITS FOR RETIREES:

Regular Retirees

Maximum.....	\$ 78,617,926
Option 2	67,000,701
Option 3	21,390,452
Option 4	178,169

TOTAL Regular Retirees \$ 167,187,248

Disability Retirees..... 452,104

Survivors & Widows..... 13,719,429

DROP Account Balances Payable to Retirees 2,517,383

TOTAL Present Value of Future Benefits for Retirees & Survivors..... \$ 183,876,164

TOTAL Present Value of Future Benefits..... \$ 462,585,043

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

CURRENT ASSETS:

Cash in Banks	\$ 5,805,736
Contributions and Taxes Receivable.....	453,696
Accrued Interest and Dividends.....	531,758
Investments Receivable	1,019,388
Other Current Assets	135,037

TOTAL CURRENT ASSETS..... \$ 7,945,615

INVESTMENTS:

Cash Equivalents.....	\$ 1,870,609
Equities	175,482,072
Fixed Income	100,056,078
Real Estate	23,249,084
Other Investments	2,097,372

TOTAL INVESTMENTS..... \$ 302,755,215

TOTAL ASSETS \$ 310,700,830

CURRENT LIABILITIES:

Accounts Payable	\$ 177,740
Investments Payable.....	260,562

TOTAL CURRENT LIABILITIES \$ 438,302

MARKET VALUE OF ASSETS..... \$ 310,262,528

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

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

Fiscal year 2015	\$ (28,265,481)
Fiscal year 2014	4,468,634
Fiscal year 2013	14,901,485
Fiscal year 2012	23,015,456
Fiscal year 2011	<u>(18,213,819)</u>
Total for five years	\$ (4,093,725)

Deferral of excess (shortfall) of invested income:

Fiscal year 2015 (80%)	\$ (22,612,385)
Fiscal year 2014 (60%)	2,681,180
Fiscal year 2013 (40%)	5,960,594
Fiscal year 2012 (20%)	4,603,091
Fiscal year 2011 (0%)	<u>0</u>
Total deferred for year	\$ (9,367,520)

Market value of plan net assets, end of year..... \$ 310,262,528

Preliminary actuarial value of plan assets, end of year \$ 319,630,048

Actuarial value of assets corridor

85% of market value, end of year	\$ 263,723,149
115% of market value, end of year	\$ 356,801,907

Final actuarial value of plan net assets, end of year \$ 319,630,048

**EXHIBIT IV
PRESENT VALUE OF FUTURE CONTRIBUTIONS**

Employee Contributions to the Annuity Savings Fund	\$	34,266,075
Employer Normal Contributions to the Pension Accumulation Fund.....		117,637,907
Employer Amortization Payments to the Pension Accumulation Fund		12,221,554
Funding Deposit Account Credit Balance		(21,170,541)
TOTAL PRESENT VALUE OF FUTURE CONTRIBUTIONS	\$	142,954,995

**EXHIBIT V
CHANGE IN FROZEN UNFUNDED ACTUARIAL ACCRUED LIABILITY**

Prior Year Frozen Unfunded Accrued Liability	\$	14,585,158
Interest on Frozen Unfunded Accrued Liability	\$	1,057,425
Employer Normal Cost for Prior Year.....	11,496,883	
Interest on the Normal Cost.....	833,524	
Administrative Expenses	365,989	
Interest on Expenses	13,035	
Contributions to the Funding Deposit Account	2,911,471	
TOTAL Interest Adjusted Cost Elements.....	\$	16,678,327
Direct Employer Contributions.....	\$	5,706,310
Interest on Employer Contributions.....	203,235	
Ad Valorem Taxes and Revenue Sharing.....	12,680,751	
Interest on Ad Valorem Taxes and Revenue Sharing Funds.....	451,635	
Contribution Shortfall.....	0	
Interest on Contribution Shortfall	0	
TOTAL Interest Adjusted Employer Contributions	\$	19,041,931
NET Change in Frozen Unfunded Accrued Liability	\$	(2,363,604)
CURRENT YEAR FROZEN UNFUNDED ACCRUED LIABILITY	\$	12,221,554

EXHIBIT VI
ANALYSIS OF INCREASE IN ASSETS

Actuarial Value of Assets (September 30, 2014)	\$	295,965,881
INCOME:		
Member Contributions	\$	3,380,177
Employer Contributions		5,706,310
Irregular Contributions		362,959
Tax Revenue		12,680,751
Total Contributions	\$	22,130,197
Net (Depreciation) of Investments	\$	(7,745,211)
Interest & Dividends		3,611,785
Investment Expense		(1,304,817)
Net Investment Income	\$	(5,438,243)
TOTAL Income	\$	16,691,954
EXPENSES:		
Retirement Benefits	\$	18,029,208
DROP Disbursements		1,822,105
Refunds of Contributions		257,221
Administrative Expenses		365,989
TOTAL Expenses	\$	20,474,523
Net Market Value Income for Fiscal 2015 (Income – Expenses)	\$	(3,782,569)
Unadjusted Fund Balance as of September 30, 2015 (Fund Balance Previous Year + Net Income)	\$	292,183,312
Adjustment for Actuarial Smoothing	\$	27,446,736
Actuarial Value of Assets: (September 30, 2015)	\$	319,630,048

**EXHIBIT VII
PENSION BENEFIT OBLIGATION**

Present Value of Credited Projected Benefits Payable to Current Employees.....	\$	166,205,462
Present Value of Benefits Payable to Terminated Employees		3,921,719
Present Value of Benefits Payable to Current Retirees and Beneficiaries		183,876,164
TOTAL PENSION BENEFIT OBLIGATION.....	\$	354,003,345
NET ACTUARIAL VALUE OF ASSETS.....	\$	319,630,048
Ratio of Net Actuarial Value of Assets to Pension Benefit Obligation.....		90.29%

**EXHIBIT VIII
ENTRY AGE NORMAL ACCRUED LIABILITIES**

Accrued Liability for Active Employees	\$	174,796,929
Accrued Liability for Terminated Employees		3,921,719
Accrued Liability for Current Retirees and Beneficiaries		183,876,164
TOTAL ENTRY AGE NORMAL ACCRUED LIABILITY	\$	362,594,812
NET ACTUARIAL VALUE OF ASSETS.....	\$	319,630,048
Ratio of Net Actuarial Value of Assets to Entry Age Normal Accrued Liability		88.15%

**EXHIBIT IX
CENSUS DATA**

	Active	Terminated with Funds on Deposit	Retired	Total
Number of members as of September 30, 2014	757	88	535	1,380
Additions to Census				
Initial membership	49	1		50
Omitted in error last year				
Death of another member			5	5
Adjustment for multiple records				
Change in Status during Year				
Actives terminating service	(12)	12		
Actives who retired	(30)		30	
Term. members rehired				
Term. members who retire		(2)	2	
Retirees who are rehired				
Refunded who are rehired	3			3
Omitted in error last year				
Eliminated from Census				
Refund of contributions	(9)	(7)		(16)
Deaths	(1)		(28)	(29)
Included in error last year				
Adjustment for multiple records				
Number of members as of September 30, 2015	757	92	544	1,393

ACTIVES CENSUS BY AGE:

Age	Number Male	Number Female	Total Number	Average Salary	Total Salary
21 - 25	9	11	20	30,434	608,688
26 - 30	16	35	51	37,741	1,924,767
31 - 35	21	46	67	42,405	2,841,118
36 - 40	31	40	71	48,844	3,467,952
41 - 45	27	53	80	50,899	4,071,913
46 - 50	33	63	96	55,458	5,323,976
51 - 55	39	92	131	61,559	8,064,203
56 - 60	44	70	114	57,721	6,580,152
61 - 65	35	41	76	66,266	5,036,210
66 - 70	26	14	40	74,907	2,996,263
71 - 75	3	6	9	64,672	582,050
76 - 80	1	1	2	96,214	192,427
TOTAL	285	472	757	55,072	41,689,719

THE ACTIVE CENSUS INCLUDES 300 ACTIVES WITH VESTED BENEFITS, INCLUDING 0 DROP PARTICIPANTS AND 3 ACTIVE FORMER DROP PARTICIPANTS.

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
41 - 45	0	2	2	15,076	30,151
46 - 50	1	3	4	35,356	141,423
51 - 55	1	5	6	23,230	139,382
61 - 65	0	1	1	57,552	57,552
TOTAL	2	11	13	28,347	368,508

TERMINATED MEMBERS DUE A REFUND OF CONTRIBUTIONS:

Contributions Ranging From To	Number	Total Contributions
0 - 99	2	89
100 - 499	7	2,178
500 - 999	12	8,796
1000 - 1999	10	15,692
2000 - 4999	20	68,531
5000 - 9999	12	83,109
10000 - 19999	9	129,969
20000 - 99999	7	193,133
TOTAL	79	501,497

REGULAR RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
51 - 55	3	15	18	57,221	1,029,969
56 - 60	8	44	52	42,548	2,212,512
61 - 65	23	50	73	43,649	3,186,357
66 - 70	32	62	94	40,421	3,799,595
71 - 75	27	45	72	34,950	2,516,411
76 - 80	30	32	62	23,231	1,440,345
81 - 85	23	28	51	27,060	1,380,053
86 - 90	17	27	44	19,774	870,076
91 - 99	4	9	13	16,475	214,173
TOTAL	167	312	479	34,759	16,649,491

DISABILITY RETIREES:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
51 - 55	0	1	1	42,306	42,306
TOTAL	0	1	1	42,306	42,306

SURVIVORS:

Age	Number Male	Number Female	Total Number	Average Benefit	Total Benefit
56 - 60	0	3	3	98,490	295,471
61 - 65	0	3	3	32,381	97,142
66 - 70	1	2	3	34,650	103,951
71 - 75	0	11	11	28,177	309,943
76 - 80	2	7	9	18,629	167,662
81 - 85	0	16	16	25,920	414,716
86 - 90	1	12	13	21,726	282,442
91 - 99	0	6	6	11,512	69,073
TOTAL	4	60	64	27,194	1,740,400

ACTIVE MEMBERS:

Attained Ages	Completed Years of Service											Total	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30&Over		
0 - 20													0
21 - 25	7	7	5		3	1							20
26 - 30	6	8	13		8	15	1						51
31 - 35	4	4	7		5	29	9					1	67
36 - 40	3	5	10		3	22	25				1		71
41 - 45	5	6	9		7	18	13				7		80
46 - 50	3	5	6		3	25	17				10		96
51 - 55	5	4	16		2	28	16				11		131
56 - 60	5	3	6		1	29	15				7		114
61 - 65		3	4		3	11	13				10		76
66 - 70			2		1	4	13				3		40
71 & Over							3				2		11
Totals	38	45	78	32	25	182	125	85	51	47	49		757

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													0
21 - 25	30,471	30,718	29,627		39,341	32,225	31,996						30,434
26 - 30	32,130	29,995	40,200		42,690	42,471	56,429						37,741
31 - 35	34,690	39,200	36,609		42,690	41,756	54,433						42,405
36 - 40	31,369	31,399	55,430		39,683	47,713	54,433						48,844
41 - 45	35,618	36,635	40,215		38,765	50,996	65,761						50,899
46 - 50	42,924	33,345	44,493		91,571	47,436	53,193						55,458
51 - 55	36,026	38,231	61,628		34,836	46,145	58,379						61,559
56 - 60	32,368	29,873	67,182		37,116	64,281	52,201						57,721
61 - 65		40,215	48,569		44,050	58,631	52,778						66,266
66 - 70			53,172		28,896	45,925	66,584						74,907
71 & Over							66,075						70,407
Average	33,889	33,745	48,717	43,918	46,286	49,553	57,015	63,572	69,763	64,520	89,420		55,072

TERMINATED MEMBERS DUE A DEFERRED RETIREMENT BENEFIT:

Attained Ages	Years Until Retirement Eligibility										Total	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29		30&Over
0 - 40												0
41 - 45							2					2
46 - 50						4						4
51 - 55	2	2		1	1							6
56 - 60												0
61 - 65	1											1
66 & Over												0
Totals	3	2	0	1	1	4	2	0	0	0	0	13

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 - 40												0
41 - 45							15,076					15,076
46 - 50						35,356						35,356
51 - 55	33,837	15,984		25,885	13,856							23,230
56 - 60												0
61 - 65	57,552											57,552
66 & Over												0
Average	41,742	15,984	0	25,885	13,856	35,356	15,076	0	0	0	0	28,347

DISABILITY RETIREES:

Attained Ages	Completed Years Since Retirement										Total	
	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29		30&Over
0 - 50												0
51 - 55						1						1
56 & Over												0
Totals	0	0	0	0	0	1	0	0	0	0	0	1

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 - 50												0
51 - 55						42,306						42,306
56 & Over												0
Average	0	0	0	0	0	42,306	0	0	0	0	0	42,306

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**EXHIBIT X
YEAR-TO-YEAR COMPARISON**

	Fiscal 2015	Fiscal 2014	Fiscal 2013	Fiscal 2012
Number of Active Members	757	757	747	758
Number of Retirees & Survivors	544	535	519	489
Number of Terminated Due Deferred Benefits	13	14	17	18
Number Terminated Due Refunds	79	74	75	70
Active Lives Payroll	\$ 41,689,719	\$ 40,498,685	\$ 39,962,471	\$ 39,098,798
Retiree Benefits in Payment	\$ 18,432,197	\$ 17,346,092	\$ 16,681,535	\$ 14,191,340
Market Value of Assets	\$ 310,262,528	\$ 314,045,097	\$ 285,977,787	\$ 251,096,489
EAN Accrued Liability	\$ 362,594,812	\$ 349,004,741	\$ 329,768,390	\$ 312,848,872
Ratio of AVA to EAN Accrued Liability	88.15%	84.80%	81.11%	77.93%
Actuarial Value of Assets	\$ 319,630,048	\$ 295,965,881	\$ 267,473,843	\$ 243,797,375
Frozen Unfunded Actuarial Accrued Liability	\$ 12,221,554	\$ 14,585,158	\$ 16,695,158	\$ 18,552,185
Present Value of Future Employer Normal Cost	\$ 117,637,907	\$ 110,250,598	\$ 108,615,730	\$ 108,058,007
Present Value of Future Employee Contrib.	\$ 34,266,075	\$ 29,803,451	\$ 28,814,590	\$ 26,841,544
Funding Deposit Account Balance	\$ 21,170,541	\$ 17,024,774	\$ 13,720,700	\$ 11,421,183
Present Value of Future Benefits	\$ 462,585,043	\$ 433,580,314	\$ 407,878,621	\$ 385,827,928

	Fiscal 2016	Fiscal 2015	Fiscal 2014	Fiscal 2013
Employee Contribution Rate	8.00%	8.00%	8.00%	8.00%
Estimated Tax Contribution as % of Payroll	31.00%	30.90%	30.75%	29.26%
Actuarially Required Net Direct Employer Contribution Rate	4.75%	6.84%	7.05%	10.58%
Actual Employer Contribution Rate	13.50%	13.50%	13.50%	13.50%

Fiscal 2011	Fiscal 2010	Fiscal 2009	Fiscal 2008	Fiscal 2007	Fiscal 2006
744	768	777	786	748	718
493	460	454	437	443	443
20	22	23	22	21	23
68	60	58	54	45	39
\$ 36,976,826	\$ 37,837,825	\$ 38,039,395	\$ 36,638,923	\$ 33,568,909	\$ 29,478,685
\$ 13,718,479	\$ 11,705,460	\$ 11,184,513	\$ 9,705,668	\$ 9,618,856	\$ 9,320,275
\$ 208,403,362	\$ 207,336,952	\$ 187,888,278	\$ 172,306,395	\$ 189,183,894	\$ 161,766,254
\$ 300,017,223	\$ 288,389,709	\$ 261,531,084	\$ 251,974,627	\$ 229,079,819	\$ 212,306,489
77.21%	77.03%	79.03%	75.22%	76.93%	72.54%
\$ 231,647,617	\$ 222,141,802	\$ 206,677,106	\$ 189,537,035	\$ 176,223,629	\$ 154,009,532
\$ 20,177,466	\$ 21,590,624	\$ 22,817,329	\$ 23,857,602	\$ 32,124,893	\$ 34,970,588
\$ 101,041,103	\$ 95,265,554	\$ 69,846,719	\$ 72,468,052	\$ 50,033,632	\$ 50,121,433
\$ 25,278,807	\$ 24,956,172	\$ 24,352,444	\$ 22,452,996	\$ 21,608,375	\$ 19,681,683
\$ 9,257,096	\$ 7,104,280	\$ 2,939,108	N/A	N/A	N/A
\$ 368,887,897	\$ 356,849,872	\$ 320,754,490	\$ 308,315,685	\$ 279,990,529	\$ 258,783,236

Fiscal 2012	Fiscal 2011	Fiscal 2010	Fiscal 2009	Fiscal 2008	Fiscal 2007
8.00%	8.00%	8.00%	8.00%	8.00%	8.00%
30.13%	27.88%	26.69%	25.25%	22.46%	24.44%
9.49%	9.83%	4.08%	8.45%	4.64%	5.39%
13.50%	13.50%	13.50%	13.50%	13.50%	13.50%

SUMMARY OF PRINCIPAL PLAN PROVISIONS

The Louisiana Assessors' Retirement Fund is a defined benefit pension plan that provides retirement allowances and other benefits for the assessors and their permanent, full-time employees. The plan was established by Act 91 of the 1950 Louisiana Legislative Session. Provisions of the plan are set forth in the Louisiana Revised Statutes (R.S. 11:1401 through R.S. 11:1483). The following summary of plan provisions is for general informational purposes only and does not constitute a guarantee of benefits.

MEMBERSHIP – Membership in the fund is allowed only to assessors, full-time permanent employees of assessors, the secretary and regular employees of the Assessors' Retirement Fund, and permanent employees of the Louisiana Assessors' Association and Louisiana Assessors' Insurance Fund. Full-time, permanent employees as used herein, means those employed on a full twelve-month basis within each calendar year; provided, however, that members may be granted leaves of absence, with no creditable service to be allowed for time on leave. Membership is not allowed on a part-time, temporary, or intermittent basis.

CONTRIBUTION RATES – Under the provisions of R.S. 11:62 and 11:103, the fund is financed by employee contributions of at least 7% but not more than 9% of earnable compensation as determined by the board of trustees. Each assessor has the option of electing to pay all or a portion of their employees' contribution into the retirement fund. This election remains in effect for 1 year and can be rescinded only upon written notice to the retirement system. In addition, the fund receives revenue sharing funds as appropriated each year by the legislature. Also, under R.S. 11:82, each sheriff and ex-officio tax collector remits the employers' share of the actuarially required contribution to fund the system up to a maximum of 0.25% of the aggregate amount of the tax shown to be collected by the tax roll of each respective parish, including that shown on the tax rolls to be exempted by virtue of homestead exemptions. Should employee contributions and tax funds collected from ad valorem taxes and revenue sharing funds be insufficient to provide for the gross employer actuarially required contribution, the employer is required to make direct contributions as determined by the Public Retirement Systems' Actuarial Committee. Under R.S. 11:106, the board of trustees is authorized to require a net direct contribution rate of up to three percent more than the rate determined under R.S. 11:103. Under R.S. 11:105 and R.S. 11:107, in any fiscal year during which the net direct employer contribution rates would otherwise be decreased, the board of trustees is authorized to set the employer contribution rate at any point between the previous year's employer contribution rate and the decreased rate that would otherwise occur. Any excess funds resulting from the additional contributions will be credited to the Funding Deposit Account defined in R.S. 11:107.1.

FUNDING DEPOSIT ACCOUNT – If the contribution rate is set above the minimum recommended rate pursuant to R.S. 11:106 or 11:107, the surplus contributions collected, if any, are credited to the Funding Deposit Account defined in R.S. 11:107.1. The funds in the account earn interest annually at the board-approved actuarial valuation interest rate, and such interest is credited to the account at least once a year. The board of trustees may, in any fiscal year, direct that funds from the account be charged for the following purposes: (1) to reduce the unfunded accrued liability; (2) to reduce the present value of future normal costs for systems using an aggregate funding method; (3) to pay all or a portion of any future net direct employer contributions; or (4) to provide for cost of living increases, in accordance with applicable law. In no event will the funds charged from the account exceed the outstanding account balance. If the board of trustees of the system elects to utilize funds from the funding deposit account to pay all or a portion of any future net direct employer contributions, the percent reduction in the minimum recommended employer contribution rate otherwise applicable is

determined by dividing the interest-adjusted value of the charges from the funding deposit account by the projected payroll for the fiscal year for which the contribution rate is to be reduced. For funding purposes, any asset value utilized in the calculation of the actuarial value of assets of a system excludes the funding deposit account balance as of the asset determination date for such calculation. For all purposes other than funding, the funds in the account are considered assets of the system.

RETIREMENT BENEFITS –

For members hired before October 1, 2013 – Members with thirty years of creditable service may retire at any age and members with at least twelve years of service may retire at age fifty-five. The benefit accrual rate is three and one-third percent for all years of service. The normal retirement benefit for individuals hired prior to October 1, 2006, will be equal to three and one-third percent of the highest monthly average final compensation received during any thirty-six consecutive months while employed in an assessor's office or other creditable employment times the number of years of the member's creditable service not to exceed one hundred percent of the member's monthly average final compensation after taking into account the reduction arising from any optional retirement selected. The normal retirement benefit for individuals hired on or after October 1, 2006, will be equal to three and one-third percent of the highest monthly average final compensation received during any sixty consecutive months while employed in an assessor's office or other creditable employment times the number of years of the member's creditable service not to exceed one hundred percent of the member's monthly average final compensation after taking into account the reduction arising from any optional retirement selected.

For members hired on or after October 1, 2013 – Members with twelve or more years of creditable service may retire at age sixty and members with thirty or more years of creditable service may retire at age fifty-five. The normal retirement benefit for members with less than thirty years of creditable service will be equal to three percent of the highest monthly average final compensation times the number of years of creditable service. The normal retirement benefit for members with at least thirty years of creditable service will be equal to three and one-third percent of the highest monthly average final compensation times the number of years of creditable service. Only transferred service with an accrual rate of at least three and one-third percent will be used to meet the thirty year requirement. Benefits are calculated using the highest sixty month average compensation. Monthly benefits may not exceed 100% of the monthly 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 that is the actuarial equivalent of the maximum benefit. If, upon retirement, a member selects their spouse as their beneficiary under Option 2 or Option 3 or Option 4, the option reduction factor will be based on the ages of the member and his or her beneficiary as of the member's sixtieth birthday. If a participant selects an option 4 for someone other than their spouse, the option reduction factor is based on the ages of the member and beneficiary as of the later of the date of the member's retirement or the member's sixtieth birthday.

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 surviving spouse will continue to receive the same reduced benefit.

Option 3 – Upon retirement, the member receives a reduced benefit. Upon the member's death, the surviving spouse will receive one-half of the member's reduced benefit.

Option 4 – Upon retirement, the member may elect to receive a board-approved benefit that is actuarially equivalent to the maximum benefit.

EXCESS BENEFIT PLAN – Under the provisions of this excess benefit plan a member may receive a benefit equal to the amount by which the member's monthly benefit from the fund has been reduced because of the limitations of Section 415 of the Internal Revenue Code.

DISABILITY BENEFITS – Disability benefits are awarded to active members who are totally disabled with twelve or more years of creditable service. In addition, any member with twenty years of service who withdraws from service prior to reaching retirement age is eligible for disability benefits. The disability benefit is equal to the lesser of the member's applicable retirement accrual rate times the final average compensation multiplied by the number of years of creditable service (but not less than forty-five percent) or the retirement benefit which would be payable assuming accrued creditable service plus additional accrued service, if any, to the earliest normal retirement age.

SURVIVOR BENEFITS – If a member dies in service with less than twelve years of service credit, his accumulated contributions are paid to the surviving spouse. If a member dies with twelve or more years of creditable service and is not eligible for retirement, the surviving spouse receives an automatic option 2 benefit that ceases on remarriage. If a member dies who is eligible for retirement, the surviving spouse receives an automatic option 2 benefit that does not terminate on remarriage. The minor children or handicapped children of a member with no spouse who dies in the line of duty or with four years of creditable service receives \$50 per month for the first child and \$10 per month for each additional child.

DEFERRED RETIREMENT OPTION PLAN – In lieu of terminating employment and accepting a service retirement allowance, any member who becomes eligible for normal retirement may elect to participate in the Deferred Retirement Option Plan (DROP) for up to three years and defer the receipt of benefits. Upon commencement of participation in the plan, active membership in the system terminates. During participation in the plan both employer and employee contributions continue to be payable. 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. In addition, no cost-of-living increases are payable to participants until employment which made them eligible to become members of the system has been terminated for at least one full year.

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 balance, 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 participation period, payments into the account cease and the member resumes active membership in the system. If a member, who was eligible to participate in DROP prior to January 1, 2004, completes participation in the plan and does not terminate employment their account will earn interest at the actual rate of return less 1%. A member's account will cease to earn interest upon termination of employment. For individuals who become eligible to participate in DROP on or after January 1, 2004, all amounts which remain credited to the individual's subaccount after termination in

the plan will be placed in liquid asset money market investments at the discretion of the board of trustees. These subaccounts may be credited with interest at the actual rate of return earned on the subaccount investments less one-fourth of one percent per annum, or at the option of the system, the funds may be credited to self-directed subaccounts. The participant in the self-directed portion of this plan must agree that the benefits payable to the participant are not the obligations of the state or the system, and that any returns and other rights of the plan are the sole liability and responsibility of the participant and the designated provider to which contributions have been made. Upon termination, the member receives a lump sum payment for the DROP fund equal to the payments made into that fund on his behalf, or a true annuity based on his account (subject to approval by the board of trustees). The monthly benefit payments that were being paid into the DROP fund are paid to the retiree and an additional benefit based on the additional service rendered since termination of DROP participation is calculated based on the subsequent participation compensation and service credit only. In no event can the entire monthly benefit paid to the retiree exceed 100% of the average compensation used to compute the additional benefit. If a participant dies after the period of participation in the program, automatic option 2 benefits are paid to the surviving spouse with whom the member was living at the time of death on the supplemental benefits earned since DROP participation. No entries to the DROP are permitted after September 30, 2008.

Back-DROP – In lieu of receiving a service retirement allowance any member of the fund who has more than sufficient service for a regular service retirement may elect to receive a “Back-DROP” benefit. The Back-DROP benefit is based upon the Back-DROP period selected and the final average compensation prior to the period selected. The Back-DROP period is the lesser of three years or the service accrued between the time a member first becomes eligible for retirement and his actual date of retirement. At retirement the member’s maximum monthly retirement benefit is based upon his service, final average compensation, and plan provisions in effect on the last day of creditable service immediately prior to the commencement of the Back-DROP period. In addition to the monthly benefit at retirement, the member receives a lump-sum payment equal to the maximum monthly benefit as calculated above multiplied by the number of months in the Back-DROP period.

CONTRIBUTION REFUNDS – Upon withdrawal from service, members not entitled to a retirement allowance are paid a refund of accumulated contributions upon request. Receipt of such a refund cancels all accrued benefits in the system. If the total of all benefits paid to a retiree and all benefits paid on the retiree’s account after their death is less than the retiree’s accumulated employee contributions, the remaining accumulated employee contributions shall be paid to the retiree’s beneficiary or to their estate if they do not have a designated beneficiary. Upon the death of a member or former member who has not been paid any benefits from the fund and who is not survived by any person eligible for any benefits from the fund, the accumulated employee contributions of the member or former member shall be paid to their designated beneficiary or to their estate if they do not have a designated beneficiary.

COST OF LIVING INCREASES – The board of trustees may use excess interest earnings as determined by the actuary to provide a cost of living increase in benefits for retired members or their beneficiaries of three percent of their original benefit (not to exceed three hundred dollars per year). In addition, the board of trustees may grant an additional cost of living increase of two percent of their original benefit (or the benefit as of October 1, 1977 if they retired prior to that time). In order to grant either cost of living increase the ratio of the systems assets to pension benefit obligations must exceed a target ratio that is set by statute. In lieu of the above described cost of living increases, the board may provide a cost of living increase in the form of up to \$1.00 per month for each year of service plus the number of years since retirement.

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 which 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:	 Frozen Attained Age Normal Actuarial Method with allocation based on earnings. The actuarial accrued liabilities utilized to calculate the frozen unfunded accrued liability were calculated on the Projected Unit Credit Cost Method. Changes in assumptions and plan benefits are funded through adjustments to future normal costs.
 VALUATION INTEREST RATE:	 7.00 % (Net of Investment Expense)
 ACTUARIAL ASSET VALUES:	 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.
 Note:	 All deferrals are based on the valuation interest rate in effect as of the beginning of the fiscal year for each individual year.

ANNUAL SALARY INCREASE RATE: 5.75% (2.50% inflation /3.25% merit)

ACTIVE MEMBER MORTALITY: RP 2000 Employee Table set back 4 years for males and set back 3 years for females

ANNUITANT AND BENEFICIARY MORTALITY: RP 2000 Healthy Annuitant Table set forward 1 year and projected to 2030 for males and projected to 2030 for females with no set forward

RETIREE COST OF LIVING INCREASE: 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.

RATES OF RETIREMENT: 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 subjected to IRS Section 415 limits.

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

Service	Factor	Service	Factor
<1	0.100	6	0.060
1	0.100	7	0.060
2	0.060	8	0.020
3	0.060	9	0.020
4	0.060	>9	0.005
5	0.060		

Note: Withdrawal rates for members eligible to retire are assumed to be zero.

RETIREMENT RATES FOR ACTIVE FORMER DROP PARTICIPANTS: The rate for all ages is assumed to be 33%.

DISABILITY RATES: 12% 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.

DISABLED LIVES MORTALITY: RP-2000 Disabled Lives Mortality Table set back 5 years for Males and set back 3 years for Females

VESTING ELECTING PERCENTAGE: 60% of those vested elect deferred benefits in lieu of contribution refunds.

MARRIAGE AND OPTION SELECTION: 70% of members are assumed to be married. Wives are assumed to be 3 years younger than their husbands. Fifty-five percent of married members who retire are assumed to select a Joint and 100% Survivor Annuity form of optional benefits.

FAMILY STATISTICS: Assumptions utilized in determining the costs of various survivor benefits as listed below, are derived from the information provided in the 2010 U. S. Census:

<u>Member's</u>	<u>% With</u>	<u>Number of</u>	<u>Average</u>	<u>Remarriage</u>
<u>Age</u>	<u>Children</u>	<u>Children</u>	<u>Age</u>	<u>Rates</u>
25	70%	1.84	5	0.04566
35	86%	2.13	9	0.02636
45	75%	1.70	12	0.01355
55	22%	1.42	14	N/A
65	4%	1.45	15	N/A

Back-DROP BENEFITS: Members eligible for Back-DROP benefits are assumed to elect the benefit form with the greatest present value.

ACTUARIAL TABLES AND RATES

Age	Male Employee Mortality Rates	Female Employee Mortality Rates	Male Retired Mortality Rates	Female Retired Mortality Rates	Male Disabled Mortality Rates	Female Disabled Mortality Rates
18	0.00025	0.00017	0.00019	0.00012	0.02257	0.00745
19	0.00027	0.00018	0.00019	0.00012	0.02257	0.00745
20	0.00028	0.00018	0.00020	0.00012	0.02257	0.00745
21	0.00030	0.00019	0.00021	0.00011	0.02257	0.00745
22	0.00032	0.00019	0.00022	0.00012	0.02257	0.00745
23	0.00033	0.00019	0.00024	0.00012	0.02257	0.00745
24	0.00035	0.00019	0.00025	0.00013	0.02257	0.00745
25	0.00036	0.00019	0.00028	0.00014	0.02257	0.00745
26	0.00037	0.00020	0.00032	0.00015	0.02257	0.00745
27	0.00037	0.00020	0.00034	0.00016	0.02257	0.00745
28	0.00038	0.00021	0.00035	0.00016	0.02257	0.00745
29	0.00038	0.00021	0.00038	0.00017	0.02257	0.00745
30	0.00038	0.00022	0.00043	0.00020	0.02257	0.00745
31	0.00038	0.00024	0.00048	0.00024	0.02257	0.00745
32	0.00039	0.00025	0.00054	0.00028	0.02257	0.00745
33	0.00041	0.00026	0.00060	0.00030	0.02257	0.00745
34	0.00044	0.00031	0.00067	0.00032	0.02257	0.00745
35	0.00050	0.00035	0.00072	0.00034	0.02257	0.00745
36	0.00056	0.00039	0.00078	0.00036	0.02257	0.00745
37	0.00063	0.00044	0.00083	0.00037	0.02257	0.00745
38	0.00070	0.00047	0.00085	0.00039	0.02257	0.00745
39	0.00077	0.00051	0.00087	0.00041	0.02257	0.00745
40	0.00084	0.00055	0.00090	0.00045	0.02257	0.00745
41	0.00090	0.00060	0.00093	0.00049	0.02257	0.00745
42	0.00096	0.00065	0.00096	0.00054	0.02257	0.00745
43	0.00102	0.00071	0.00100	0.00060	0.02257	0.00745
44	0.00108	0.00077	0.00105	0.00065	0.02257	0.00745
45	0.00114	0.00085	0.00109	0.00069	0.02257	0.00745
46	0.00122	0.00094	0.00114	0.00073	0.02257	0.00745
47	0.00130	0.00103	0.00118	0.00077	0.02257	0.00745
48	0.00140	0.00112	0.00123	0.00083	0.02257	0.00745
49	0.00151	0.00122	0.00320	0.00090	0.02257	0.00818
50	0.00162	0.00133	0.00321	0.00140	0.02257	0.00896
51	0.00173	0.00143	0.00317	0.00152	0.02385	0.00978
52	0.00186	0.00155	0.00312	0.00173	0.02512	0.01063
53	0.00200	0.00168	0.00316	0.00202	0.02640	0.01154
54	0.00214	0.00181	0.00322	0.00236	0.02769	0.01248
55	0.00229	0.00197	0.00344	0.00277	0.02897	0.01346
56	0.00245	0.00213	0.00374	0.00328	0.03027	0.01446
57	0.00262	0.00232	0.00412	0.00377	0.03156	0.01550
58	0.00281	0.00253	0.00461	0.00423	0.03286	0.01654
59	0.00303	0.00276	0.00505	0.00476	0.03415	0.01760
60	0.00331	0.00301	0.00555	0.00533	0.03544	0.01865
61	0.00363	0.00329	0.00630	0.00595	0.03673	0.01971
62	0.00400	0.00360	0.00696	0.00662	0.03803	0.02077
63	0.00441	0.00393	0.00794	0.00732	0.03933	0.02184
64	0.00488	0.00429	0.00879	0.00808	0.04067	0.02294
65	0.00538	0.00466	0.00974	0.00892	0.04204	0.02408
66	0.00592	0.00504	0.01112	0.00982	0.04347	0.02529
67	0.00647	0.00543	0.01229	0.01079	0.04498	0.02660
68	0.00703	0.00582	0.01317	0.01185	0.04658	0.02803
69	0.00757	0.00621	0.01455	0.01304	0.04831	0.02959
70	0.00810	0.00658	0.01561	0.01440	0.05017	0.03132
71	0.00860	0.00695	0.01734	0.01551	0.05221	0.03323
72	0.00907	0.00729	0.01931	0.01725	0.05445	0.03533
73	0.00951	0.00761	0.02154	0.01861	0.05691	0.03764
74	0.00992	0.01858	0.02404	0.02062	0.05961	0.04014
75	0.02457	0.02067	0.02762	0.02209	0.06258	0.04285

ACTUARIAL TABLES AND RATES (Continued)

Age	Retirement Rates	Disability Rates
18	0.00000	0.00018
19	0.00000	0.00018
20	0.00000	0.00018
21	0.00000	0.00018
22	0.00000	0.00018
23	0.00000	0.00018
24	0.00000	0.00018
25	0.00000	0.00018
26	0.00000	0.00018
27	0.00000	0.00018
28	0.00000	0.00018
29	0.00000	0.00018
30	0.00000	0.00018
31	0.00000	0.00018
32	0.00000	0.00018
33	0.00000	0.00018
34	0.00000	0.00018
35	0.00000	0.00020
36	0.00000	0.00023
37	0.00000	0.00025
38	0.00000	0.00029
39	0.00000	0.00032
40	0.00000	0.00037
41	0.00000	0.00042
42	0.00000	0.00047
43	0.00000	0.00053
44	0.00000	0.00060
45	0.00000	0.00068
46	0.30000	0.00078
47	0.30000	0.00088
48	0.30000	0.00100
49	0.30000	0.00113
50	0.30000	0.00128
51	0.30000	0.00146
52	0.30000	0.00166
53	0.30000	0.00188
54	0.20000	0.00214
55	0.20000	0.00242
56	0.10000	0.00276
57	0.10000	0.00313
58	0.10000	0.00355
59	0.10000	0.00404
60	0.10000	0.00586
61	0.10000	0.00586
62	0.10000	0.00586
63	0.10000	0.00586
64	0.10000	0.00586
65	0.25000	0.00586
66	0.25000	0.00586
67	0.25000	0.00586
68	0.25000	0.00586
69	0.25000	0.00586
70	0.25000	0.00586
71	0.25000	0.00586
72	0.25000	0.00586
73	0.25000	0.00586
74	0.25000	0.00586
75	0.25000	0.00586

PRIOR YEAR ASSUMPTIONS

VALUATION INTEREST RATE: 7.25% (Net of Investment Expense)

ANNUAL SALARY INCREASE RATE: 6% (2.75% inflation / 3.25% merit)

ACTIVE MEMBER, ANNUITANT, AND BENEFICIARY MORTALITY: RP 2000 Combined Healthy Table set back 3 years for males and 1 year for females

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

Service	Factor	Service	Factor
<1	0.120	10	0.030
1	0.120	11	0.030
2	0.050	12	0.030
3	0.050	13	0.020
4	0.050	14	0.020
5	0.050	15	0.010
6	0.050	>15	0.010
7	0.040		
8	0.040		
9	0.030		

Note: Withdrawal rates for members eligible to retire are assumed to be zero.

RETIREMENT RATES FOR ACTIVE FORMER DROP PARTICIPANTS: The rate for all ages is assumed to be 33%.

DISABILITY RATES: 4% 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.

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.

MARRIAGE AND OPTION SELECTION: 80% of members are assumed to be married. Wives are assumed to be 3 years younger than their husbands. Fifty-five percent of married members who

retire are assumed to select a Joint and 100% Survivor Annuity form of optional benefits.

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

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

PRIOR YEAR ACTUARIAL TABLES AND RATES

Age	Male Mortality Rates	Female Mortality Rates	Retirement Rates	Disability Rates
18	0.00027	0.00018	0.00000	0.00006
19	0.00028	0.00019	0.00000	0.00006
20	0.00030	0.00019	0.00000	0.00006
21	0.00032	0.00019	0.00000	0.00006
22	0.00033	0.00019	0.00000	0.00006
23	0.00035	0.00019	0.00000	0.00006
24	0.00036	0.00020	0.00000	0.00006
25	0.00037	0.00020	0.00000	0.00006
26	0.00037	0.00021	0.00000	0.00006
27	0.00038	0.00021	0.00000	0.00006
28	0.00038	0.00022	0.00000	0.00006
29	0.00038	0.00024	0.00000	0.00006
30	0.00038	0.00025	0.00000	0.00006
31	0.00039	0.00026	0.00000	0.00006
32	0.00041	0.00031	0.00000	0.00006
33	0.00044	0.00035	0.00000	0.00006
34	0.00050	0.00039	0.00000	0.00006
35	0.00056	0.00044	0.00000	0.00007
36	0.00063	0.00047	0.00000	0.00008
37	0.00070	0.00051	0.00000	0.00008
38	0.00077	0.00055	0.00000	0.00010
39	0.00084	0.00060	0.00000	0.00011
40	0.00090	0.00065	0.00000	0.00012
41	0.00096	0.00071	0.00000	0.00014
42	0.00102	0.00077	0.00000	0.00016
43	0.00108	0.00085	0.00000	0.00018
44	0.00114	0.00094	0.00000	0.00020
45	0.00122	0.00103	0.00000	0.00023
46	0.00130	0.00112	0.22000	0.00026
47	0.00140	0.00122	0.22000	0.00029
48	0.00151	0.00133	0.22000	0.00033
49	0.00162	0.00143	0.22000	0.00038
50	0.00173	0.00155	0.44000	0.00043
51	0.00186	0.00168	0.44000	0.00049
52	0.00200	0.00185	0.44000	0.00055
53	0.00214	0.00202	0.44000	0.00063
54	0.00245	0.00221	0.44000	0.00071
55	0.00267	0.00242	0.04000	0.00081
56	0.00292	0.00272	0.04000	0.00092
57	0.00320	0.00309	0.04000	0.00104
58	0.00362	0.00348	0.18000	0.00118
59	0.00420	0.00392	0.18000	0.00135
60	0.00469	0.00444	0.18000	0.00195
61	0.00527	0.00506	0.18000	0.00195
62	0.00595	0.00581	0.18000	0.00195
63	0.00675	0.00666	0.28000	0.00195
64	0.00768	0.00765	0.28000	0.00195
65	0.00876	0.00862	0.28000	0.00195

GLOSSARY

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

NOTES