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Teachers Retirement System of Georgia

TEACHERS RETIREMENT SYSTEM OF GEORGIA

REPORT OF THE ACTUARY ON THE VALUATION PREPARED AS OF JUNE 30, 2010

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August 25, 2011

Board of Trustees,
Teachers Retirement System of Georgia
Suite 100, Two Northside 75
Atlanta, GA 30318

Members of the Board:

Section 47-3-23 of the law governing the operation of the Teachers Retirement System of Georgia provides that the actuary shall make annual valuations of the contingent assets and liabilities of the Retirement System on the basis of regular interest and the tables last adopted by the Board of Trustees. We have submitted the report giving the results of the actuarial valuation of the System prepared as of June 30, 2010. The report indicates that annual employer contributions at the rate of 11.41% of compensation for the fiscal year ending June 30, 2013 are sufficient to support the benefits of the System. Our firm, as actuary, is responsible for all of the actuarial trend data in the financial section of the annual report and the supporting schedules in the actuarial section of the annual report.

Since the previous valuation, various assumptions and methods have been revised to reflect the results of the experience investigation for the five-year period ending June 30, 2009. These revised assumptions were adopted by the Board on November 17, 2010. In addition, the valuation reflects a change in the interest rate smoothing methodology used by the System to include a corridor around the long-term investment rate of return. The method used to determine the actuarial value of assets has also been revised to include a corridor between 75% and 125% of market value around the actuarial value. Both of these changes were adopted by the Board on July 27, 2011 and have been applied retroactively to the June 30, 2009 valuation, which has been revised to reflect these changes. In our opinion, the valuation is complete and accurate, and the methodology and assumptions are reasonable as a basis for the valuation. The valuation takes into account the effect of all amendments to the System enacted through the 2010 Session of the General Assembly. In preparing the valuation, the actuary relied on data provided by the System. While not verifying data at the source, the actuary performed tests for consistency and reasonableness.

The System is funded on an actuarial reserve basis. The actuarial assumptions recommended by the actuary and adopted by the Board are in the aggregate reasonably related to the experience under the System and to reasonable expectations of anticipated experience under the System. The assumptions and methods used for funding purposes meet the parameters set for the disclosures presented in the financial section by Governmental Accounting Standards Board (GASB) Statement Nos. 25 and 27. The funding objective of the plan is that contribution rates over time will remain level as a percent of payroll. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a level percent of payroll. Gains and losses are reflected in the unfunded accrued liability, which is amortized as a level percent of payroll within a 30-year period.

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The System is being funded in conformity with the minimum funding standard set forth in Code Section 47-20-10 of the Public Retirement Systems Standards Law. In our opinion the System is operating on an actuarially sound basis. Assuming that contributions to the System are made by the employer from year to year in the future at the rates recommended on the basis of the successive actuarial valuations, the continued sufficiency of the retirement fund to provide the benefits called for under the System may be safely anticipated assuming future required contributions (ARC) are contributed when due.

Future actuarial results may differ significantly from the current results 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; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

Sincerely yours,

Edward A. Macdonald, ASA, FCA, MAAA
President

Cathy Turcot
Principal and Managing Director

EAM:mjn

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TEACHERS RETIREMENT SYSTEM OF GEORGIA
REPORT OF THE ACTUARY
ON THE VALUATION
PREPARED AS OF JUNE 30, 2010

SECTION I - SUMMARY OF PRINCIPAL RESULTS

1. For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below (all dollar amounts are in thousands):

Valuation Date	**June 30, 2010**	**June 30, 2009***
Number of active members	222,020	226,537
Annual earnable compensation	$ 10,437,703	$ 10,641,543
Number of retired members and beneficiaries	86,978	82,358
Annual allowances	$ 2,862,477	$ 2,630,321
Assets:		
Market Value	$ 45,925,549	$ 42,478,583
Actuarial Value	54,529,416	53,438,604
Unfunded accrued liability	$ 9,062,621	$ 6,011,512
Amortization period (years)	30	29
Funded Ratio	85.7%	89.9%
Contributions for Fiscal Year Ending	**June 30, 2013**	**June 30, 2012**
Member Contribution Rate	6.00%	5.53%
Annual Required Employer Contribution Rate (ARC):		
Normal	6.36%	6.93%
Unfunded accrued liability	5.05	3.35
Total	11.41%	10.28%

**Revised since the previous valuation as discussed further in this section.*

2. Comments on the valuation results as of June 30, 2010 are given in Section IV and further discussion of the employer contribution levels is set out in Section V. The valuation reflects a change in the interest rate smoothing methodology used by the System to include a corridor around the long-term investment rate of return. The method used to determine the actuarial value of assets has also been revised to include a corridor between 75% and 125% of market value around the actuarial value. Both of these changes were adopted by the Board on July 27, 2011 and have been applied retroactively to the June 30, 2009 valuation, which has been revised to reflect these changes.

3. The method of determining the smoothed interest rate has been revised beginning with the June 30, 2009 valuation to include a corridor around the long-term investment rate of return. Schedule C of this report shows the development of the smoothed interest rate and describes the application of the corridor.

4. Since the previous valuation various assumptions and methods have been revised to reflect the results of the experience investigation for the five year period ending June 30, 2009. These revised assumptions as summarized in the following table were adopted by the Board on November 17, 2010 with the exception of the changes in the asset smoothing method and the interest smoothing method which were adopted by the Board on July 27, 2011 and applied retroactively to the 2009 valuation results. Schedule E of this report outlines the full set of actuarial assumptions and asset method used to prepare the current valuation.

Summary of Assumptions and Methods	
Economic Assumptions	
Salary	Composed of Inflation component, Real Rate of Salary Increase component and Merit/Promotion Scale
Inflation	Changed annual rate of inflation assumption from 3.75% to 3.00%.
Real Rate of Wage Inflation	Changed annual real rate of wage inflation assumption to 0.75%.
Merit/Promotion Scale	Changed to a service based salary merit scale increase assumption.
Investment Rate of Return	Composed of Inflation component (3.00% from above) and Real Rate of Return component.
Real Rate of Investment Return	Changed to a 4.50% assumption resulting in no change to the 7.50% net investment return assumption.
Payroll Growth	No change to current assumption.
Demographic Assumptions	
Withdrawal	Changed assumed rates.
Retirement	Changed assumed rates.
Mortality	Changed assumed rates.
Disability	Changed assumed rates.
Other Assumptions and Methods and Administrative Changes	
Unused Sick Leave	Changed assumption.
Asset Smoothing	Changed current method.
Interest Smoothing	Changed current method.
All others	No change to other actuarial methods.

5. The entry age actuarial cost method was used to prepare the valuation. Schedule F contains a brief description of this method.

6. The major benefit and contribution provisions of the System as reflected in the current valuation are summarized in Schedule G. The valuation reflects the member contribution rate increase from 5.53% to 6.00% effective July 1, 2012.

SECTION II - MEMBERSHIP

1. The data we received for the 2010 valuation was provided by the Retirement System. While not verifying the data at its source, we performed tests for consistency and reasonableness.

2. The following table shows the number of teachers and their annual earnable and average compensation as of June 30, 2010 on whose account benefits may be payable under the Retirement System.

THE NUMBER AND ANNUAL EARNABLE AND AVERAGE COMPENSATION OF ACTIVE MEMBERS AS OF JUNE 30, 2010

TOTAL NUMBER	ANNUAL COMPENSATION ($1,000's)	AVERAGE COMPENSATION
222,020	$10,437,703	$47,012

The results of the valuation were adjusted for 82,163 terminated employees entitled to benefits but not yet receiving benefits.

3. The following table shows the number of beneficiaries on the roll as of June 30, 2010, together with the amount of their annual retirement allowances payable under the System as of that date.

THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF BENEFICIARIES ON THE ROLL AS OF JUNE 30, 2010

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES ($1,000's)
Service Retirements	77,651	$ 2,682,353
Disability Retirements	3,439	64,488
Beneficiaries of Deceased Active and Retired Members	5,888	115,636
Total	86,978	$ 2,862,477

SECTION III - ASSETS

1. The retirement law provides for the maintenance of two funds for the purpose of recording the financial transactions of the System; namely, the Annuity Savings Fund and the Pension Accumulation Fund.

   (a) Annuity Savings Fund

   The Annuity Savings Fund is the fund to which are credited all contributions made by members together with regular interest thereon. When a member retires, or if a death benefit allowance becomes payable to his beneficiary, his accumulated contributions are transferred from the Annuity Savings Fund to the Pension Accumulation Fund. The annuity which these contributions provide is then paid from the Pension Accumulation Fund. On June 30, 2010 the value of assets credited to the Annuity Savings Fund amounted to $6,705,274,000.

   (b) Pension Accumulation Fund

   The Pension Accumulation Fund is the fund to which all income from investments and all contributions made by employers of members of the System and by the State for members of local retirement funds are credited. All retirement allowance and death benefit allowance payments are disbursed from this fund. Upon the retirement of a member, or upon his death if a death benefit allowance is payable, his accumulated contributions are transferred from the Annuity Savings Fund to this fund to provide the annuity portion of the allowance. On June 30, 2010 the market value of assets credited to the Pension Accumulation Fund amounted to $39,220,275,000.

3. As of June 30, 2010 the total market value of assets amounted to $45,925,549,000 as reported by the Auditor of the System. The actuarial value of assets used for the current valuation was $54,529,416,000. Schedule B shows the development of the actuarial value of assets

4. Schedule D shows receipts and disbursements of the System for the two years preceding the valuation date and a reconciliation of the fund balances at market value.

SECTION IV – COMMENTS ON VALUATION

1. Schedule A of this report contains the valuation balance sheet which shows the present and prospective assets and liabilities of the System as of June 30, 2010 (all amounts are in thousands).

2. The valuation balance sheet shows that the System has total prospective liabilities of $74,071,980, of which $34,264,548 is for the prospective benefits payable on account of present retired members and beneficiaries of deceased members and $39,807,432 is for the prospective benefits payable on account of present active and inactive members and members entitled to deferred vested benefits. Against these liabilities, the System has total present assets for valuation purposes of $54,529,416 as of June 30, 2010. The difference of $19,542,564 between the total liabilities and the total present assets represents the present value of contributions to be made in the future. Of this amount, $5,285,913 is the present value of future contributions expected to be made by members to the Annuity Savings Fund, and the balance of $14,256,651 represents the present value of future contributions payable by the employer.

3. The employer's contributions to the System consist of normal contributions and accrued liability contributions. The valuation indicates that employer normal contributions at the rate of 6.36% of payroll are required, in addition to member contributions, to provide the benefits of the System for the average new member.

4. Prospective normal contributions, excluding administrative expenses, have a present value of $5,194,030. When this amount is subtracted from $14,256,651, which is the present value of the total future contributions to be made by the employer, there remains $9,062,621 as the amount of future unfunded accrued liability contributions.

SECTION V – CONTRIBUTIONS PAYABLE BY EMPLOYERS

1. The Teachers Retirement System funding policy provides for periodic employer contributions at rates which, expressed as percents of annual covered payroll, are sufficient to provide resources to pay benefits when due without being increased for future generations of taxpayers.
2. The retirement law provides that the contributions of employers shall be a percentage of the compensation of active members consisting of a normal contribution rate and an unfunded accrued liability contribution rate as determined by actuarial valuation.
3. Normal contributions include 0.25% of compensation that is required to meet the expenses of administering the System.
4. Based on the current total employer contribution rate of 11.41% of payroll, the unfunded accrued liability contribution is 5.05% of payroll, which will amortize the unfunded accrued liability within a 30 year period.
5. The following table summarizes the employer contribution rates, which were determined by the June 30, 2010 valuation and are recommended for use.

ANNUAL REQUIRED EMPLOYER CONTRIBUTION RATES
FOR FISCAL YEAR ENDING JUNE 30, 2013

CONTRIBUTION	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION
Normal	6.36%
Unfunded Accrued Liability	5.05
Total	11.41%

SECTION VI – ACCOUNTING INFORMATION

1. Governmental Accounting Standards Board Statements 25 and 27 set forth certain items of required supplementary information to be disclosed in the financial statements of the System and the employer. One such item is a distribution of the number of employees by type of membership, as follows:

NUMBER OF ACTIVE AND RETIRED MEMBERS AS OF JUNE 30, 2010

GROUP	NUMBER
Retirees and beneficiaries currently Receiving benefits	86,978
Terminated employees entitled to benefits but not yet receiving benefits	82,163
Active plan members	222,020
Total	391,161

2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS
(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Entry Age (b)	Unfunded AAL (UAAL) (b – a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b – a) / c)
6/30/2005	$46,836,895	$47,811,214	$ 974,319	98.0%	$8,252,598	11.8%
6/30/2006	49,263,027	51,059,681	1,796,654	96.5	8,785,985	20.4
6/30/2007	52,099,171	54,996,570	2,897,399	94.7	9,492,003	30.5
6/30/2008	54,354,284	59,133,777	4,779,493	91.9	10,197,584	46.9
6/30/2009*	53,438,604	59,450,116	6,011,512	89.9	10,641,543	56.5
6/30/2010	54,529,416	63,592,037	9,062,621	85.7	10,437,703	86.8

**Revised since the previous valuation.*

3. The following shows the schedule of employer contributions.

Year Ending	Annual Required Contribution	Percentage Contributed
6/30/2005	$ 815,693	100%
6/30/2006	855,626	100
6/30/2007	927,371	100
6/30/2008	986,759	100
6/30/2009	1,026,287	100
6/30/2010	1,057,416	100

4. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at June 30, 2010. Additional information as of the latest actuarial valuation follows.

Valuation date	6/30/2010
Actuarial cost method	Entry age
Amortization method	Level percent of pay, open
Remaining amortization period	30 years
Asset valuation method	7-year smoothed market
Actuarial assumptions:	
Ultimate investment rate of return (discount rate)*	7.50%
Projected salary increases*	3.75 – 7.00%
Cost-of-living adjustments	3.00% Annually

**Includes inflation at 3.00%*

TREND INFORMATION
(Dollar amounts in thousands)

Year Ending	Annual Pension Cost (APC)	Percentage of APC Contributed	Net Pension Obligation
June 30, 2008	$ 986,759	100%	$ 0
June 30, 2009	1,026,287	100	0
June 30, 2010	1,057,416	100	0

SECTION VII – EXPERIENCE

1. Section 47-3-23 of the act governing the operation of the System provides that as an aid to the Board in adopting service and mortality tables, the actuary will prepare an experience investigation at least once in each five-year period. The last investigation was prepared for the five-year period ending June 30, 2009 and, based on the results of the investigation, new rates of separation, mortality and salary increase were adopted by the Board on November 17, 2010. The next experience investigation will be prepared for the period July 1, 2009 through June 30, 2014.

2. The following table shows the estimated gain or loss from various factors that resulted in an increase of $3,051,109,000 in the unfunded accrued liability from $6,011,512,000 to $9,062,621,000 during the fiscal year ending June 30, 2010.

ANALYSIS OF THE INCREASE IN UNFUNDED ACCRUED LIABILITY
(Dollar amounts in millions)

ITEM	AMOUNT OF INCREASE/ (DECREASE)
Interest (7.50%) added to previous unfunded accrued liability	$ 486.3
Accrued liability contribution	(312.0)
Experience:	
Valuation asset growth	1,674.9
Pensioners' mortality	89.8
Turnover and retirements	269.5
New entrants	123.7
Salary increases	(1,040.5)
Method Changes	0.0
Change in Member Contribution Rate	12.8
Assumption Changes	1,472.4
Miscellaneous	274.2
Total	$ 3,051.1

SCHEDULE A

VALUATION BALANCE SHEET
SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF
THE TEACHERS RETIREMENT SYSTEM OF GEORGIA
AS OF JUNE 30, 2010
(Dollar amounts in thousands)

ASSETS		
Actuarial Value of Assets		$ 54,529,416
Present value of future member contributions to Annuity Savings Fund		5,285,913
Present value of future employer contributions to the Pension Accumulation Fund:		
Normal contributions	$ 5,194,030	
Unfunded accrued liability contributions	9,062,621	
Total Prospective Employer Contributions		14,256,651
Total Assets		$ 74,071,980
LIABILITIES		
Present value of prospective benefits payable on account of present retired members and beneficiaries of deceased members		$ 34,264,548
Present value of prospective benefits payable on account of present active and inactive members and members entitled to deferred vested benefits		39,807,432
Total Liabilities		$ 74,071,980

SCHEDULE B

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
(Dollar amounts in thousands)

(1)	Actuarial Value Beginning of Year		$ 54,818,373
(2)	Market Value End of Year		45,925,549
(3)	Market Value Beginning of Year		42,750,883
(4)	Cash Flow		
	(a)	Contributions	1,649,680
	(b)	Benefit Payments and Expenses	3,146,585
	(c)	Investment Expenses	22,429
	(d)	Net: (4)(a) - (4)(b) - 4(c)	(1,519,334)
(5)	Investment Income		
	(a)	Market Total: (2) - (3) - (4)(d)	4,694,000
	(b)	Assumed Rate	7.50%
	(c)	Amount for Immediate Recognition: [(3) x (5)(b)] + {[(4)(a) - (4)(b)] x (5)(b) x 0.5} + (4)(c)	3,172,611
	(d)	Amount for Phased-In Recognition: 5(a) - (5)(c)	1,521,389
(6)	Phased-In Recognition of Investment Income		
	(a)	Current Year: 5(d) / 7	217,341
	(b)	First Prior Year	(1,473,379)
	(c)	Second Prior Year	(818,542)
	(d)	Third Prior Year	468,459
	(e)	Fourth Prior Year	(336,113)
	(f)	Fifth Prior Year	0
	(g)	Sixth Prior Year	0
	(h)	Total Recognized Investment Gain	(1,942,234)
(7)	Preliminary Value End of Year: (1) + (4)(d) + 5(c) + (6)(h)		$ 54,529,416
(8)	Corridor		
	(a)	75% of Market Value: 0.75 x (2)	$ 34,444,162
	(b)	125% of Market Value: 1.25 x (2)	$ 57,406,936
(9)	Actuarial Value End of Year: (7), but not less than (8)(a) and not greater than (8)(b)		$ 54,529,416
(10)	Difference Between Market & Actuarial Values: (2) - (9)		$ (8,603,867)
(11)	Rate of Return on Actuarial Value		2.23%

SCHEDULE C

SMOOTHED INTEREST RATE

Actual Rate of Return for 7 Year Look Back Period

Fiscal Year Ending 6/30	Actual Rate of Return for Fiscal Year
2004	9.86 %
2005	7.87
2006	6.05
2007	14.61
2008	-3.38
2009	-13.06
2010	11.16

SMOOTHED INTEREST RATE: The assumed rate of return during the 23 year look forward period beginning on the valuation date. This is the investment rate of return expected to be earned during this period based on the actual rates earned during the seven year look back period shown above such that the average rate of return over the combined 30 year period is equivalent to the ultimate investment rate of return (currently 7.50%). On this basis, for the June 30, 2010 valuation, the smoothed interest rate during the 23 year look forward period has been determined to be 8.49%.

ULTIMATE INVESTMENT RATE OF RETURN (DISCOUNT RATE): The assumed investment rate of return used in determining the smoothed interest rate described above. This is also the assumed investment rate of return after the 23 year look forward period and is currently 7.50%.

LONG-TERM INVESTMENT RATE OF RETURN: The average investment rate of return over the 40 year period beginning on the valuation date.

CORRIDOR AROUND LONG-TERM INVESTMENT RATE OF RETURN: Determined such that the long-term investment rate of return is between the 40th and 50th percentile of expected returns over a 40 year period based on current TRS capital market assumptions. This produces a range between 7.25% and 7.84% as the suggested acceptable range for the long-term investment rate of return.

LIMITED SMOOTHED INTEREST RATE: The assumed rate of return during the 23 year look forward period as limited based on the application of the corridor above and used for valuation purposes. Based on the smoothed interest rate above of 8.49% for the first 23 years after the valuation date and the ultimate investment rate of return of 7.50% for the next 17 years, the calculated long-term investment rate of return over the 40 year period would be outside of the corridor limits shown above. In order to achieve a maximum long-term rate of return of 7.84% over the 40 year period, the smoothed interest rate for the 23 year look forward period used in the valuation is limited to 8.09%

SCHEDULE D

SUMMARY OF RECEIPTS AND DISBURSEMENTS
(Dollar amounts in thousands)

	YEAR ENDING	
Receipts for the Year	June 30, 2010	June 30, 2009
Contributions:		
Members	$ 592,264	$ 567,635
Employer	1,057,416	1,026,287
Subtotal	$ 1,649,680	$ 1,593,922
Investment Income (Net of Investment Expenses)	1,214,218	1,382,848
Unrealized Appreciation/(Depreciation)	3,457,353	(7,955,283)
TOTAL	$ 6,321,251	$ (4,978,513)
Disbursements for the Year		
Benefit Payments	$ 2,800,424	$ 2,534,487
Refunds to Members	53,638	49,414
Administration Expense	20,223	22,603
TOTAL	$ 2,874,285	$ 2,606,504
Excess of Receipts over Disbursements	$ 3,446,966	$ (7,585,017)
Reconciliation of Asset Balances		
Asset Balance as of the Beginning of Year (Market Value)	$ 42,478,583	$ 50,063,600
Excess of Receipts over Disbursements	3,446,966	(7,585,017)
Asset Balance as of the End of Year (Market Value)	$ 45,925,549	$ 42,478,583

SCHEDULE E

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

Adopted by the Board November 17, 2010 with the exception of the changes in the asset smoothing method and the interest smoothing method which were adopted by the Board on July 27, 2011.

ULTIMATE INVESTMENT RATE OF RETURN (Discount Rate): 7.50% per annum, compounded annually.

SALARY INCREASES:

Service	Annual Rate	Service	Annual Rate	Service	Annual Rate
0	7.00 %	7	5.25 %	14	4.75 %
1	6.75	8	5.25	15	4.50
2	6.63	9	5.00	16	4.50
3	6.50	10	5.00	17	4.25
4	6.25	11	4.85	18	4.25
5	6.00	12	4.80	19	4.25
6	5.50	13	4.75	20	3.75

SERVICE RETIREMENT:

	Male		Female	
AGE	< 30 years of service	>= 30 years of service	< 30 years of service	>= 30 years of service
50	5.00 %	50.00 %	5.00 %	50.00 %
55	5.00	38.00	5.00	35.00
60	20.00	35.00	25.00	40.00
61	18.00	30.00	25.00	40.00
62	25.00	35.00	25.00	40.00
63	20.00	33.00	25.00	40.00
64	18.00	30.00	25.00	40.00
65	30.00	30.00	30.00	30.00
66	30.00	30.00	30.00	30.00
67	30.00	30.00	28.00	28.00
68	28.00	28.00	28.00	28.00
69	26.00	26.00	28.00	28.00
70	30.00	30.00	30.00	30.00

SEPARATION BEFORE SERVICE RETIREMENT:

Age	Death	Disability	Withdrawal Years of Service 0-4	Withdrawal Years of Service 5-9	Withdrawal Years of Service 10+
			Male		
20	0.03%	0.03%	31.00%	-	-
25	0.04	0.03	18.00	16.00%	-
30	0.04	0.04	14.00	8.00	11.00%
35	0.06	0.04	14.00	6.00	3.00
40	0.10	0.05	13.00	6.00	2.25
45	0.13	0.09	12.00	6.00	2.20
50	0.19	0.17	11.00	5.50	2.50
55	0.29	0.32	11.00	5.00	2.70
60	0.53	-	11.00	5.00	-
64	0.88	-	11.00	5.00	-
			Female		
20	0.02%	0.02%	30.00%	-	-
25	0.02	0.02	14.00	25.00%	-
30	0.02	0.02	13.00	9.00	9.00%
35	0.04	0.03	13.00	7.00	3.50
40	0.06	0.04	11.00	7.00	3.00
45	0.09	0.07	10.00	5.50	2.00
50	0.13	0.12	10.00	5.00	2.00
55	0.20	0.38	10.00	4.75	2.75
60	0.35	-	10.00	4.75	-
64	0.58	-	10.00	4.75	-

DEATHS AFTER RETIREMENT: The RP-2000 Combined Mortality Table (set back two years for males and three years for females) is used for death after service retirement and beneficiaries. The RP-2000 Disabled Mortality Table (set back two years for males) is used for death after disability retirement. Representative values of the assumed annual rates of death after service retirement and after disability retirement are shown below:

	Annual Rate of Death After			
	Service Retirement		Disability Retirement	
Age	Men	Women	Men	Women
40	.10%	.06%	2.26%	0.75%
45	.13	.09	2.26	0.75
50	.19	.13	2.64	1.15
55	.29	.20	3.29	1.65
60	.53	.35	3.93	2.18
65	1.00	.67	4.66	2.80
70	1.79	1.22	5.69	3.76
75	3.04	2.07	7.33	5.22
80	5.21	3.41	9.76	7.23
85	8.97	5.63	12.83	10.02
90	15.06	9.63	16.22	14.00
95	23.37	15.76	23.37	19.45

COST OF LIVING: Increases of 1.5% semi-annually.

ADMINISTRATIVE EXPENSES: 0.25% of active members' payroll included in normal contribution.

ASSET METHOD: Actuarial Value, as developed in Schedule B. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected actuarial value of assets, based on the assumed valuation rate of return. The amount recognized each year is 1/7 of the difference between market value and expected actuarial value. The actuarial value of assets is limited to a range between 75% and 125% of the market value of assets.

PERCENTAGE MARRIED: 85% of males and 60% of female active members were assumed to be married with the husband 4 years older than his wife.

UNUSED SICK LEAVE: 1.75% load on liabilities for members who retire on early retirement, a 2.0% load for members who retire with unreduced retirement before 30 years of service and a 2.5% load for members who retire with 30 or more years of service.

VALUATION INTEREST RATE SMOOTHING: The valuation liabilities are calculated using a smoothed interest rate method. The interest rate assumed during the look forward period (currently 23 years from the valuation date) is the investment rate of return expected to be earned during the look forward period based on the actual rate of return earned during the look back period (currently 7 years) such that the average assumed rate of return over the combined 30 year period is equivalent to the assumed ultimate investment rate of return (currently 7.50%). The interest rate after the 23 year look forward period is the ultimate investment rate of return of 7.50%.

CORRIDOR LIMIT ON INTEREST RATE SMOOTHING: The smoothed interest rate used during the 23 year look forward period is subject to a corridor which is determined such that the long-term investment rate of return is between the 40th and 50th percentile of expected returns based on TRS capital market assumptions as of June 30, 2009. The interest rate used in the current valuation is described in further detail in Schedule C.

SCHEDULE F

ACTUARIAL COST METHOD

1. The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (see Schedules C and E for a description of the interest rate used), of each active member's expected benefit at retirement or death is determined, based on his age, service, sex and compensation. The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service, disability or survivor's benefit. Future salary increases and post-retirement cost-of-living adjustments are also anticipated. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members and beneficiaries and inactive members to obtain the present value of all expected benefits payable from the System on account of the present group of members and beneficiaries.
2. The employer contributions required to support the benefits of the System are determined following a level funding approach, and consist of a normal contribution and an accrued liability contribution.
3. The normal contribution is determined using the "entry age normal" method. Under this method, a calculation is made to determine the uniform and constant percentage rate of employer contribution which, if applied to the compensation of the average new member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.
4. The unfunded accrued liability is determined by subtracting the present value of prospective employer normal contributions and member contributions, together with the current actuarial value of assets held, from the present value of expected benefits to be paid from the System.

SCHEDULE G

SUMMARY OF MAIN PLAN PROVISIONS
AS INTERPRETED FOR VALUATION PURPOSES

The Teachers Retirement System of Georgia began operation as of January 1, 1945. The System is supported by the joint contributions of the members and their employers. All teachers employed by an agency of and within the State of Georgia are eligible for membership in the System. The State makes contributions for certain retired members of local funds and certain benefits are payable by the System to them or on their account.

The following summary describes the main benefit and contribution provisions of the System as interpreted for the valuation.

1 - DEFINITIONS

"Prior service" means service rendered prior to January 1, 1945 for which credit is allowed. "Creditable service" means the sum of membership service and prior service. "Earnable compensation" means the full rate of compensation that would be payable to a member teacher if he worked the full normal working time and shall include compensation paid to a member by an employer from grants or contracts made by outside agencies with the employer. "Employer" means the State of Georgia, the county or independent board of education, the State Board of Education, the Board of Regents of the University System of Georgia, or any other agency of and within the State by which a teacher is paid.

2 - BENEFITS

MEMBERS OF THE RETIREMENT SYSTEM

Service Retirement Benefit

Condition for Allowance	Any member may retire on a service retirement allowance upon the attainment of age 60 and the completion of 10 years of creditable service or upon the completion of 25 years of creditable service.

Amount of Allowance

The service retirement allowance consists of:

(a) An annuity which is the actuarial equivalent of the member's accumulated contributions at the time of his retirement; and

(b) A pension which, together with the annuity, will provide a total annual allowance equal to 2.00% of the member's average annual compensation during the two consecutive years of his creditable service as a contributing member producing the highest such average, multiplied by the number of years of his creditable service limited to 40 years.

If the member has less than 30 years of creditable service and has not attained age 60 at the time of retirement, his allowance is reduced by the lesser of 1/12 of 7% for each month that retirement precedes age 60 or 7% for each year or fraction of a year by which the member has less than 30 years of creditable service at the time of retirement.

The minimum service retirement allowance is $204 per annum for each year of creditable service, not to exceed 40 years of such service.

In no event will a teacher who was a member on June 30, 1961 receive a smaller retirement allowance than he would have received under the benefit provisions of the System in effect on that date.

Disability Retirement Benefit

Condition for Allowance

A disability retirement allowance is payable to any member who becomes permanently incapacitated, mentally or physically, for the further performance of duty, after having rendered 10 or more years of creditable service.

Amount of Allowance

If a member qualifies for either service retirement or disability retirement and a service retirement calculation exceeds the amount that he would receive on disability, he shall receive a service retirement allowance. Otherwise he receives a disability retirement allowance determined as a service retirement allowance on the basis of the member's creditable service and compensation up to the time of disability, but with no reduction for age.

Death Benefit

Condition for Allowance	A death benefit is payable on account of a member who dies after having completed 10 or more years of creditable service provided there is a named living beneficiary.
Amount of Allowance	The death benefit is the amount which would have become payable to the member's beneficiary had the member retired on the date of his death on either a service retirement allowance or a disability retirement allowance, whichever is larger, and died after an election of Option 2 had become effective.

Vesting Benefit

Condition for Allowance	A member who withdraws from service prior to attaining age 60 after having rendered at least 10 years of creditable service and who elects to leave his accumulated contributions in the System is eligible for a vesting retirement allowance upon application therefore upon the attainment of age 60 or at any time thereafter.
Amount of Allowance	The vesting allowance is determined as a service retirement allowance on the basis of the member's creditable service and compensation up to the time of withdrawal from service and on the basis of his age at the time the allowance commences.

Return of Contributions Prior to Retirement	Upon a member's withdrawal from service or death prior to retirement, his accumulated contributions together with the accumulated interest are returned to him, or are paid to his designated beneficiary or estate, provided no other benefit is payable under the Retirement System.
Return of Contributions After Retirement Under Maximum Plan	Benefits are payable to a member retired on service or disability for the remainder of his lifetime under the maximum plan. In the event total monthly benefits paid at the time of death are less than the contributions which the member made to the System, the difference between the benefits paid and the amount of contributions is refunded to the member's designated beneficiary or estate, provided no optional allowance has been selected.

Optional Allowances

Upon retirement, any member may elect to convert the retirement allowance otherwise payable to him, except any additional pension payable under the minimum provision, to a reduced retirement allowance of equivalent actuarial value in one of the following optional forms:

Option 1. If he dies before receiving in annuity payments the amount of his accumulated contributions at retirement, the balance is paid to his designated beneficiary or to his estate; or

Option 2. Upon his death his reduced retirement allowance is continued throughout the life of and paid to his designated beneficiary; or

Option 3. Upon his death one-half of his reduced retirement allowance is continued throughout the life of and paid to his designated beneficiary; or

Option 4. A reduced retirement allowance payable during the life of the retired member, with the provision that upon his death some other benefit shall be payable; provided that the total value of such benefits is the actuarial equivalent of the retirement allowance he would have received without optional modification and provided the benefit is approved by the Board of Trustees; or

Option 5. A member may elect Option 2 with the added provision that in the event the designated beneficiary predeceases the member, the retirement allowance payable to the member after the designated beneficiary's death shall be equal to the retirement allowance which would have been payable had the member not elected the option; or

Option 6. A member may elect Option 3 with the added provision that in the event the designated beneficiary predeceases the member, the retirement allowance payable to the member after the designated beneficiary's death shall be equal to the retirement allowance which would have been payable had the member not elected the option.

Cost-of-Living Adjustment	The retirement allowances of members or of any beneficiary of a member who died in service will be subject to adjustment as of each January 1 and July 1 based upon the change in the average CPI during the previous six-month period. The maximum increase in retirement allowances for any such six-month period will be 1-1/2% and no adjustment of less than 1/2% will be made. If the CPI decreases, no reduction in allowance will be made for the first 2-1/2% of a reduction and retirement allowances will not be reduced below the amounts initially paid upon retirement. In addition, a one-time 3% increase on the first $37,500 of members' allowances is made at retirement. A member who retires prior to age 60 with less than 30 years of creditable service is not eligible for post-retirement adjustments until such time as the member reaches age 60 or would have obtained 30 years of creditable service, whichever occurs earlier.

3 - CONTRIBUTIONS

By Members	Each member contributes 5.25% of his earnable compensation. However, no contributions are payable after the attainment of age 65 and the completion of 40 years of creditable service. Members may elect to cease making contributions after the completion of 40 years of creditable service but before the attainment of age 65. Effective July 1, 2010, the member contribution rate will be 5.53%. Effective July 1, 2012, the member contribution rate will be 6.00%.
By Employer	The employer contributes at a specified percentage of active member payroll determined annually by actuarial valuation.

SCHEDULE H

THE NUMBER AND AVERAGE ANNUAL COMPENSATION OF ACTIVE MEMBERS BY AGE AND SERVICE AS OF JUNE 30, 2010

Age	Years of Service										
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	Total
Under 25	185	2,733	22								2,940
Avg. Pay	19,284	29,321	24,400								28,653
25 to 29	285	15,395	4,591	11							20,282
Avg. Pay	23,173	35,834	42,388	27,362							37,135
30 to 34	190	10,105	12,955	3,076	11						26,337
Avg. Pay	25,334	36,821	46,724	52,316	42,721						43,422
35 to 39	209	9,206	9,197	9,752	2,509	32					30,905
Avg. Pay	27,506	36,914	45,584	55,238	59,639	41,140					47,062
40 to 44	181	8,354	8,516	6,749	6,669	2,112	25				32,606
Avg. Pay	26,715	35,563	42,802	52,206	61,485	62,564	53,518				47,914
45 to 49	156	6,868	7,753	5,966	4,376	5,213	1,793	39			32,164
Avg. Pay	24,814	35,241	40,634	46,804	55,600	63,438	64,917	53,421			47,652
50 to 54	133	4,960	6,115	5,892	4,606	4,247	3,938	1,364	12		31,267
Avg. Pay	26,837	35,915	40,952	45,725	51,785	57,495	67,537	67,324	47,221		49,336
55 to 59	56	3,230	4,470	4,836	4,628	4,576	2,909	1,935	460	1	27,101
Avg. Pay	26,706	37,835	42,945	46,795	51,065	54,773	64,660	71,318	74,721	68,800	51,270
60 to 64	21	1,674	2,562	2,470	2,203	2,395	1,567	904	499	67	14,362
Avg. Pay	29,924	37,855	45,979	48,660	53,342	54,936	63,875	75,293	78,746	82,837	53,201
65 to 69	5	352	641	611	465	476	292	227	123	48	3,240
Avg. Pay	45,674	36,812	40,918	46,833	52,306	55,571	66,348	71,375	91,810	92,843	52,509
70 & up		108	149	153	116	101	58	57	45	29	816
Avg. Pay		32,198	35,565	40,980	49,709	54,319	64,371	60,313	99,293	105,967	50,259
Total Count	1,421	62,985	56,971	39,516	25,583	19,152	10,582	4,526	1,139	145	222,020
Avg. Pay	24,885	35,929	43,723	50,164	55,736	58,609	65,677	70,619	79,011	90,678	47,012

Average Age: 44.22 Average Service: 10.56

NUMBER OF RETIRED MEMBERS AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	38	$ 976,085	$ 25,686
50 – 54	1,571	60,164,401	38,297
55 – 59	7,775	326,265,352	41,963
60 – 64	19,572	706,640,582	36,105
65 – 69	17,687	597,637,071	33,790
70 – 74	12,116	403,908,749	33,337
75 – 79	8,620	281,265,805	32,629
80 – 84	5,596	178,256,833	31,854
85 – 89	2,868	83,187,820	29,006
90 – 94	1,290	32,479,197	25,178
95 & Over	518	11,571,055	22,338
Total	77,651	$ 2,682,352,950	$ 34,544

NUMBER OF BENEFICIARIES AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	1,259	$ 13,758,732	$ 10,928
50 – 54	316	4,753,318	15,042
55 – 59	489	8,949,659	18,302
60 – 64	645	13,364,970	20,721
65 – 69	660	14,482,845	21,944
70 – 74	641	14,762,469	23,030
75 – 79	677	16,295,973	24,071
80 – 84	590	14,405,732	24,416
85 – 89	378	9,884,819	26,150
90 – 94	176	3,859,608	21,930
95 & Over	57	1,118,283	19,619
Total	5,888	$ 115,636,408	$ 19,639

NUMBER OF DISABLED RETIREES AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	230	$ 3,117,320	$ 13,554
50 – 54	403	7,012,315	17,400
55 – 59	752	13,847,136	18,414
60 – 64	916	18,482,478	20,177
65 – 69	527	10,443,109	19,816
70 – 74	274	5,194,136	18,957
75 – 79	136	2,676,267	19,678
80 – 84	117	2,127,033	18,180
85 – 89	54	984,728	18,236
90 – 94	23	448,747	19,511
95 & Over	7	154,623	22,089
Total	3,439	$ 64,487,892	$ 18,752

SCHEDULE I

CAFR SCHEDULES

Active Members				
Fiscal Year	Number of Members	Annual Payroll (000's)	Average Pay (000's)	% Increase
2001	192,654	$ 7,306,855	$ 37,927	0.30 %
2002	199,029	7,617,869	38,275	0.90
2003	205,453	8,261,961	40,213	5.10
2004	198,572	8,083,118	40,706	1.20
2005	199,088	8,252,598	41,452	1.80
2006	206,592	8,785,985	42,528	2.60
2007	215,566	9,492,003	44,033	3.50
2008	224,993	10,197,584	45,324	2.90
2009	226,537	10,641,543	46,975	3.60
2010	222,020	10,437,703	47,012	0.10

Retirants and Beneficiaries								
Fiscal Year	Added to Roll		Removed from Roll		Roll – End of Year		% Increase In Annual Allowances	Average Annual Income
	Number of Members	Annual Allowances (000’s)	Number of Members	Annual Allowances (000’s)	Number of Members	Annual Allowances (000’s)		
2001	5,246	$ 171,642	1,584	$ 26,671	50,767	$ 1,178,295	14.0 %	$ 23,210
2002	4,858	169,833	1,403	26,286	54,222	1,321,842	12.2	24,378
2003	5,097	188,458	1,627	30,581	57,692	1,479,719	11.9	25,469
2004	5,381	206,251	1,483	29,525	61,590	1,656,445	11.9	26,895
2005	6,176	230,973	1,594	33,139	66,172	1,854,279	11.9	28,022
2006	5,691	223,279	1,644	37,087	70,219	2,040,471	10.0	29,059
2007	5,858	230,924	1,656	39,293	74,421	2,232,102	9.4	29,993
2008	5,817	238,137	1,655	39,808	78,583	2,430,431	8.9	30,928
2009	5,543	245,006	1,768	45,116	82,358	2,630,321	8.2	31,938
2010	6,383	279,009	1,763	46,853	86,978	2,862,477	8.8	32,910