



**Cavanaugh Macdonald**  
CONSULTING, LLC

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Retirement Systems  
of Alabama

**Teachers' Retirement System of Alabama Report of the Actuary on the  
Annual Valuation Prepared as of September 30, 2010**





# Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

July 22, 2011

Board of Control  
Teachers' Retirement System of Alabama  
Montgomery, Alabama

Members of the Board:

In this report are submitted the results of the annual valuation of the assets and liabilities of the Teachers' Retirement System of Alabama, prepared as of September 30, 2010 in accordance with Section 367(15) of the act governing the operation of the System.

The purpose of this report is to provide a summary of the funded status of the System as of September 30, 2010, to recommend rates of State contribution and to provide accounting information under Governmental Accounting Standards Board Statements No. 25 and 27 (GASB 25 and 27). While not verifying the data at source, the actuary performed tests for consistency and reasonability. The valuation reflects the impact of Act 2011-27, which closes the DROP program to new applicants after March 24, 2011. The valuation also reflects the impact of Act 2011-676, which increases the member contribution rates by 2.25% beginning October 1, 2011 and by an additional 0.25% beginning October 1, 2012. On the basis of this valuation, it is recommended that the State make contributions to the Retirement System at the rate of 11.16% of payroll for the fiscal year ending September 30, 2013, based on a 30-year amortization period.

The promised benefits of the System are included in the actuarially calculated contribution rates which are developed using the Entry Age Normal cost method. Five-year market related value of assets is used for actuarial valuation purposes. Gains and losses are reflected in the unfunded accrued liability that is being amortized by regular annual contributions as a level percentage of payroll, on the assumption that payroll will increase by 4.50% annually. The assumptions recommended by the actuary and adopted by the Board are in the aggregate reasonably related to the experience under the Fund and to reasonable expectations of anticipated experience under the Fund and meet the parameters for the disclosures under GASB 25 and 27.

We have prepared the Schedule of Funding Progress and Trend Information shown in the financial section of the Comprehensive Annual Financial Report, and all supporting schedules including the Schedule of Active Member Valuation Data, the Solvency Test and the Analysis of Financial Experience shown in the actuarial section of the Comprehensive Annual Financial Report.

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.

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July 22, 2011  
Board of Control  
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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.

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.

The Table of Contents, which immediately follows, outlines the material contained in the report.

Respectfully submitted,

A handwritten signature in blue ink, appearing to read 'Edward Macdonald'.

Edward A. Macdonald, ASA, FCA, MAAA  
President

A handwritten signature in blue ink, appearing to read 'Cathy Turcot'.

Cathy Turcot  
Principal and Managing Director

A handwritten signature in blue ink, appearing to read 'Jonathan T. Craven'.

Jonathan T. Craven, ASA, EA, FCA, MAAA  
Senior Actuary

EAM/mjn



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**TEACHERS' RETIREMENT SYSTEM OF ALABAMA  
REPORT OF THE ACTUARY ON THE ANNUAL VALUATION  
PREPARED AS OF SEPTEMBER 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:

<b>VALUATION DATE</b>	<b>September 30, 2010</b>	<b>September 30, 2009</b>
Active members		
Number	136,290	137,935
Annual compensation*	\$ 5,836,902,762	\$ 5,908,098,156
Retired members and beneficiaries		
Number	71,691	69,281
Annual allowances*	\$ 1,498,941,290	\$ 1,437,159,759
DROP participants		
Number	5,737	5,340
Annual compensation*	\$ 346,301,313	\$ 328,823,442
Annual allowances	180,489,601	164,115,842
Assets		
Actuarial value	\$ 20,132,778,571	\$ 20,582,348,079
Market value	16,888,881,709	15,971,029,120
Unfunded accrued liability	\$ 8,166,744,391	\$ 6,955,052,270
Funded Ratio	71.1%	74.7%
<b>CONTRIBUTIONS FOR FISCAL YEAR ENDING</b>	<b>September 30, 2013</b>	<b>September 30, 2012**</b>
Employer contribution rate		
Normal	3.94%	6.42%
Accrued liability	6.84	5.95
Death benefit	0.12	0.12
Term life	0.05	0.05
Administration	<u>0.21</u>	<u>0.21</u>
Total	11.16%	12.75%
Amortization period	30 years	30 years

\*Amounts shown do not include any increase in effect after the valuation date.

\*\*The employer contribution rate has been changed from 12.75% to 10.00% since the previous valuation to reflect Act 2011-27 and Act 2011-676.

2. Comments on the valuation results as of September 30, 2010 are given in Section IV and further discussion of the contribution levels is set out in Section V.



3. Schedule B shows the development of the actuarial value of assets. Schedule D of this report outlines the full set of actuarial assumptions and methods employed in the current valuation. Since the previous valuation, the assumed rates of retirement have been changed to reflect that the DROP program is closed to new applicants after March 24, 2011.
4. Provisions of the System, as summarized in Schedule F, were taken into account in the current valuation. The valuation reflects the impact of Act 2011-27, which closes the DROP program to new applicants after March 24, 2011. The valuation also reflects the impact of Act 2011-676, which increases the member contribution rates by 2.25% beginning October 1, 2011 and an additional 0.25% beginning October 1, 2012. In addition, Act 2011-676 specifies that if positive investment performance results in a decrease in the total contribution rate paid by employers and employees participating in the System, the Retirement Systems of Alabama shall first reduce the employee contribution rate.
5. Section VI of this report shows the certification of the liquidation period used to determine the accrued liability contribution rate.

## **SECTION II - MEMBERSHIP**

1. The following table shows the number of active members and their annual compensation as of September 30, 2010 on the basis of which the valuation was prepared.

**TABLE 1**

**THE NUMBER AND ANNUAL COMPENSATION OF  
ACTIVE MEMBERS AS OF SEPTEMBER 30, 2010**

<b>GROUP</b>	<b>NUMBER</b>	<b>COMPENSATION*</b>
Males	36,153	\$ 1,868,736,069
Females	<u>100,137</u>	<u>3,968,166,693</u>
Total	136,290	\$ 5,836,902,762

\*In addition, there are 5,737 members with compensation of \$346,301,313 who are currently participating in the DROP. Employers of the Retirement System contribute on this payroll.

The table reflects the active membership for whom complete valuation data were submitted. The results of the valuation include an estimated liability for an additional 20,163 inactive members.



2. The following table shows a six-year history of active member valuation data.

**TABLE 2**  
**SCHEDULE OF ACTIVE MEMBER VALUATION DATA**

<u>Valuation Date</u>	<u>Number</u>	<u>Annual Payroll</u>	<u>Annual Average Pay</u>	<u>% Increase in Average Pay</u>
9/30/2010 <sup>1</sup>	136,290	\$ 5,836,902,762	\$ 42,827	(0.01)%
9/30/2009 <sup>2</sup>	137,935	5,908,098,156	42,832	1.55
9/30/2008 <sup>3</sup>	141,528	5,969,302,850	42,178	6.55
9/30/2007 <sup>4</sup>	141,217	5,589,726,297	39,583	7.41
9/30/2006 <sup>5</sup>	138,613	5,108,187,755	36,852	5.20
9/30/2005 <sup>6</sup>	135,126	4,733,415,807	35,030	2.73

<sup>1</sup> In addition, there are 5,737 employees with annual compensation of \$346,301,313 who are currently participating in the DROP program. Employers of the Retirement System contribute on this payroll.

<sup>2</sup> In addition, there are 5,340 employees with annual compensation of \$328,823,442 who are currently participating in the DROP program. Employers of the Retirement System contribute on this payroll.

<sup>3</sup> In addition, there are 5,169 employees with annual compensation of \$325,038,414 who are currently participating in the DROP program. Employers of the Retirement System contribute on this payroll.

<sup>4</sup> In addition, there are 5,071 employees with annual compensation of \$308,045,402 who are currently participating in the DROP program. Employers of the Retirement System contribute on this payroll.

<sup>5</sup> In addition, there are 5375 employees with annual compensation of \$350,255,378 who are currently participating in the DROP program. Employers of the Retirement System contribute on this payroll.

<sup>6</sup> In addition, there are 4,839 employees with annual compensation of \$291,497,474 who are currently participating in the DROP program. Employers of the Retirement System contribute on this payroll.

3. The following table shows the number and annual retirement allowances payable to retired members and their beneficiaries on the roll of the Retirement System as of the valuation date.

**TABLE 3**  
**THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF**  
**RETIRED MEMBERS AND BENEFICIARIES ON THE ROLL**  
**AS OF SEPTEMBER 30, 2010**

<b>GROUP</b>	<b>NUMBER</b>	<b>ANNUAL RETIREMENT ALLOWANCES</b>
Service Retirements	63,450	\$ 1,398,930,064
Disability Retirements	4,526	49,533,974
Beneficiaries of Deceased Members	3,715	50,477,252
DROP Participants	<u>5,737</u>	<u>180,489,601</u>
Total	77,428	\$ 1,679,430,891



4. Schedule G shows the distribution by age and service of the number and average annual compensation of active members included in the valuation and a distribution by age of the number and benefits of retired members and beneficiaries included in the valuation.

### **SECTION III - ASSETS**

1. The current retirement law provides for the maintenance of four funds for the purpose of recording the fiscal transactions of the System, namely, the Annuity Savings Fund, the Pension Accumulation Fund, the Pre-Retirement Death Benefit Fund, and the Deferred Retirement Option Plan 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 when a survivor allowance becomes payable the amount of the member's accumulated contributions are transferred from the Annuity Savings Fund to the Pension Accumulation Fund. The market value of assets credited to the Annuity Savings Fund on September 30, 2010, which represent the accumulated contributions of active members to that date, including interest, amounted to \$3,498,959,287.

- (b) Pension Accumulation Fund

The Pension Accumulation Fund is the fund to which are credited all contributions made by the employer, except those contributions made to the Pre-Retirement Death Benefit Fund which was created October 1, 1983. When a member retires or when a survivor allowance becomes payable, the pension is paid from this fund. In addition, the amount of the member's accumulated contributions is transferred from the Annuity Savings Fund to the Pension Accumulation Fund and the annuity is paid from this fund. On September 30, 2010 the market value of assets credited to this fund amounted to \$12,667,968,257.

- (c) DROP Fund

The DROP Fund is the fund to which are credited deferred retirement benefits on behalf of members who elect to participate in the DROP, together with regular interest thereon. In addition, member contributions while participating in the DROP, together with regular interest therein, are credited to the Fund. At the end of the DROP deferral period, the member receives the amount of the deferred retirement benefits and contributions plus interest in the member's DROP account. On September 30, 2010, the market value of assets credited to this Fund amounted to \$721,954,165.

- (d) Pre-Retirement Death Benefit Fund

The Pre-Retirement Death Benefit Fund is the fund to which are credited contributions made by the employer for the special pre-retirement death benefit which became effective October 1, 1983. On September 30, 2010, the market value of assets credited to this fund amounted to \$24,786,667.



2. As of September 30, 2010 the total market value of assets reported exclusive of the Pre-Retirement Death Benefit Fund amounted to \$16,888,881,709 as shown in the following table.

**TABLE 4**  
**MARKET VALUE OF ASSETS BY FUND**  
**AS OF SEPTEMBER 30, 2010**

FUND	MARKET VALUE OF ASSETS
Annuity Savings Fund	\$ 3,498,959,287
Pension Accumulation Fund	12,667,968,257
DROP Fund	<u>721,954,165</u>
Total Market Value of Assets	\$ 16,888,881,709

3. The five-year market related actuarial value of assets as of September 30, 2010 was \$20,132,778,571. Schedule B shows the development of the actuarial value of assets as of September 30, 2010.
4. Schedule C shows the receipts and disbursements of the System for the year 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 September 30, 2010.
2. The valuation balance sheet shows that the System has total prospective liabilities of \$34,390,880,278. Of this amount, \$16,083,292,623 is for the prospective benefits payable on account of present retired members, beneficiaries of deceased members, and DROP participants, \$486,591,928 is for the prospective benefits payable on account of present inactive members and \$17,820,995,727 is for the prospective benefits payable on account of present active members. Against these liabilities, the System has total actuarial value of assets, exclusive of the Pre-Retirement Death Benefit Fund, of \$20,132,778,571 as of September 30, 2010. The difference of \$14,258,101,707 between the total liabilities and the total actuarial value of assets represents the present value of contributions to be made in the future. Of this amount, \$3,987,817,517 is the present value of future contributions expected to be made by members to



the Annuity Savings Fund, and the balance of \$10,270,284,190 represents the present value future contributions payable by the employer.

3. The employer's regular contributions to the System consist of normal contributions and accrued liability contributions. The valuation indicates that employer normal contributions at the rate of 3.94% of payroll are required to provide the benefits of the System for the average new member.
4. Prospective normal contributions at the rate of 3.94% have a present value of \$2,103,539,799. When this amount is subtracted from \$10,270,284,190 which is the present value of the total future contributions to be made by the employer, there remains \$8,166,744,391 as the amount of future accrued liability contributions. Accrued liability contributions of 6.84% of payroll are to be made toward amortizing the unfunded accrued liability. Annual accrued liability contributions at the rate of 6.84% of payroll will amortize the unfunded accrued liability within 30 years from the valuation date on the assumption that the aggregate amount of accrued liability contribution will increase by 4.50% each year.
5. A contribution of 0.12% is required to meet the cost of the pre-retirement death benefit program this year. A contribution of 0.05% is required to meet the cost of group term-life insurance premiums.
6. An additional contribution of 0.21% of payroll is required to cover the expenses of administering the System.

#### **SECTION V - CONTRIBUTIONS PAYABLE BY EMPLOYER**

1. The retirement law provides that the employer contributions are to be paid from the same source from which employees' salaries are paid.
2. On the basis of the actuarial valuation prepared as of September 30, 2010 it is recommended that the employer make contributions at the following rates beginning October 1, 2012:



**TABLE 5**

**EMPLOYER CONTRIBUTION RATES  
AS A PERCENTAGE OF MEMBERS' COMPENSATION**

<b>EMPLOYER CONTRIBUTION</b>	<b>FISCAL YEAR ENDING SEPTEMBER 30, 2013</b>
Normal	3.94%
Accrued Liability	6.84
Death Benefit	0.12
Term-Life	0.05
Administration	<u>0.21</u>
Total	11.16%

3. Contributions at the above rates of payroll are also recommended for payment by the Alabama High School Athletic Association. The following table shows the rates to be paid by special units of the System in addition to the rates shown above and the fiscal year through which these additional rates are required to be paid.

**TABLE 6**

**ADDITIONAL RATES REQUIRED FOR SPECIAL UNITS OF THE SYSTEM**

<b>UNIT</b>	<b>ADDITIONAL EMPLOYER RATE</b>	<b>THROUGH FISCAL YEAR ENDING SEPTEMBER 30</b>
Alabama State Employees Association	2.66%	2015
Developing Alabama Youth Foundation	2.74	2017
Alabama Congress of Parents and Teachers	2.15	2020
Central Alabama Opportunities Industrialization Center	5.07	2020



**SECTION VI – ANNUAL ACTUARIAL CERTIFICATION**

The following is the annual actuarial certification to the Teachers' Retirement System of Alabama required by Act 2000-732.

1. We hereby certify that there has been no change since the previous valuation in the liquidation period of 30 years used to determine the accrued liability contribution rate of 6.84% as part of the total rate of 11.16% to be paid by employers to the Teachers' Retirement System of Alabama.

Signed \_\_\_\_\_  
Edward A. Macdonald, ASA, FCA, MAAA  
President



## SECTION VII – ANALYSIS OF FINANCIAL EXPERIENCE

The following table shows the estimated gain or loss from various factors that resulted in an increase of \$1,211,692,121 in the unfunded accrued liability from \$6,955,052,270 to \$8,166,744,391 during the year ending September 30, 2010.

### ANALYSIS OF FINANCIAL EXPERIENCE (in millions of dollars)

<b>ITEM</b>	<b>AMOUNT OF INCREASE/ (DECREASE)</b>
Interest (8.00%) added to previous unfunded accrued liability	\$ 556.4
Accrued liability contribution	(391.9)
Experience:	
Valuation asset growth	1,544.5
Pensioners' mortality	41.5
Turnover and retirements	110.1
New entrants	33.0
Salary increases	(665.1)
Method changes	0.0
Amendments	(424.3)
Assumption changes	0.0
Data changes	12.2
Miscellaneous changes	<u>395.3</u>
Total	\$ 1,211.7



**SECTION VIII - 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 SEPTEMBER 30, 2010**

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits	71,691
DROP participants	5,737
Terminated employees entitled to benefits but not yet receiving benefits	20,163
Active members	<u>136,290</u>
Total	233,881

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

**SCHEDULE OF FUNDING PROGRESS**  
(Dollar amounts in thousands)

Actuarial Valuation	Actuarial Value of Assets	Actuarial Accrued Liability (AAL) Entry Age	Unfunded AAL (UAAL)	Funded Ratio	Covered Payroll	UAAL as a Percentage of Covered Payroll
<u>Date</u>	<u>(a)</u>	<u>(b)</u>	<u>(b - a)</u>	<u>(a / b)</u>	<u>(c)</u>	<u>((b - a) / c)</u>
9/30/2005	\$19,248,207	\$23,027,338	\$ 3,779,131	83.6%	\$5,326,408*	71.0%
9/30/2006	19,821,133	23,945,100	4,123,967	82.8	5,458,443	75.6
9/30/2007	20,650,916	25,971,534	5,320,618	79.5	6,310,616**	84.3
9/30/2008	20,812,477	26,804,117	5,991,640	77.6	6,294,341	95.2
9/30/2009	20,582,348	27,537,400	6,955,052	74.7	6,236,922	111.5
9/30/2010	20,132,779	28,299,523	8,166,744	71.1	6,183,204	132.1

\*Includes pay increase granted under Act 2005-174.  
\*\*Includes pay increase granted under Act 2007-296.



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

Valuation date	09/30/2010
Actuarial cost method	Entry Age Normal
Amortization method	Level percent open
Remaining amortization period	30 years
Asset valuation method	Five-year market related value
Actuarial assumptions:	
Investment rate of return*	8.00%
Projected salary increases*	5.00 - 7.75%
Cost-of-living adjustments	None
*Includes inflation at	4.50%

**TREND INFORMATION**  
(\$ in 1,000's)

<u>Period Ending</u>	<u>Annual Pension Cost (APC)</u>	<u>Percentage Of APC Contributed</u>	<u>Net Pension Obligation (NPO)</u>
September 30, 2008	\$706,491	100%	\$0
September 30, 2009	728,822	100	0
September 30, 2010	753,213	100	0



**SCHEDULE A**

**VALUATION BALANCE SHEET  
SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF  
THE TEACHERS' RETIREMENT SYSTEM OF ALABAMA  
AS OF SEPTEMBER 30, 2010**

	<b>September 30, 2010</b>
<b><u>ASSETS</u></b>	
Actuarial Value of Assets	\$ 20,132,778,571
Present value of future members' contributions to the Annuity Savings Fund	\$ 3,987,817,517
Present value of future employer contributions to the Pension Accumulation Fund	
Normal contributions	\$ 2,103,539,799
Unfunded accrued liability contributions	<u>8,166,744,391</u>
Total prospective employer contributions	\$ 10,270,284,190
Total Assets	<u>\$ 34,390,880,278</u>
<b><u>LIABILITIES</u></b>	
Present value of benefits payable on account of retired members, beneficiaries of deceased members now drawing retirement allowances, and DROP participants	
Service Retirements	\$ 14,566,254,520
Disability Retirements	403,166,384
Beneficiaries of Deceased Members	391,917,554
DROP Participant Accounts	<u>721,954,165</u>
Total	\$ 16,083,292,623
Inactive Members	\$ 486,591,928
Present value of prospective benefits payable on account of present active members:	
Service retirement allowances	\$ 16,062,442,859
Disability retirement allowances	560,036,635
Death Benefits	201,673,517
Termination Benefits	<u>996,842,716</u>
Total	\$ 17,820,995,727
Total Liabilities	<u>\$ 34,390,880,278</u>



**SCHEDULE A**  
**(continued)**

**SOLVENCY TEST**  
**(\$1000's)**

Valuation Date	Aggregate Accrued Liabilities For			Reported Assets	Portion of Accrued Liabilities Covered by Reported Asset		
	(1) Active Member Contributions	(2) Retirants and Beneficiaries	(3) Active Members (Employer Financed Portion)		(1)	(2)	(3)
9/30/2010	\$3,498,959	\$16,083,293	\$8,717,271	\$20,132,779	100%	100%	6.3%
9/30/2009	3,233,664	15,328,508	8,975,228	20,582,348	100	100	22.5
9/30/2008	3,153,859	14,678,975	8,971,283	20,812,477	100	100	33.2
9/30/2007 <sup>1</sup>	3,038,296	14,048,525	8,884,713	20,650,916	100	100	40.1
9/30/2006 <sup>2</sup>	2,943,588	13,408,294	7,593,218	19,821,133	100	100	45.7
9/30/2005 <sup>3</sup>	2,856,983	12,998,138	7,172,217	19,248,207	100	100	47.3

<sup>1</sup> Reflects pay increase payable under Act 2007-296.

<sup>2</sup> Reflects changes in actuarial assumptions.

<sup>3</sup> Reflects pay increase payable under Act 2005-174 and additional allowance payable under Act 2006-310.



**SCHEDULE B**

**DEVELOPMENT OF SEPTEMBER 30, 2010 ACTUARIAL VALUE OF ASSETS**

(1)	Actuarial Value of Assets on September 30, 2009	\$ 20,582,348,079
(2)	Market Value of Assets on September 30, 2010	16,888,881,709
(3)	Market Value of Assets on September 30, 2009	15,971,029,120
(4)	Net Cash Flow During the Fiscal Year	
	a. Contributions	1,074,615,880
	b. Benefit Payments	1,602,868,484
	c. Administrative Expenses	2,201,994
	d. Investment Expenses	<u>8,329,511</u>
	e. Net Cash Flow: (a. - b. - c. - d.)	(538,784,109)
(5)	Actual Investment Return ((2) - (3) - (4)e.)	1,456,636,698
(6)	Assumed Rate of Return on Assets	8.00%
(7)	Expected Investment Return ((3) * (6)) + (((4)a. - (4)b. - (4)c.) * .5 * (6)) + (4)d.	1,264,793,657
(8)	Investment Gain/(Loss) for the Fiscal Year ((5) - (7))	191,843,041
(9)	Phased-In Recognition of Investment Gain/(Loss)	
	a. Current Fiscal Year: (.2 * (8))	38,368,608
	b. Prior Fiscal Year	(579,214,666)
	c. Second Prior Fiscal Year	(1,011,014,422)
	d. Third Prior Fiscal Year	362,301,545
	e. Fourth Prior Fiscal Year	<u>13,979,879</u>
	f. Total Recognized Investment Gain/(Loss) for Fiscal Year	(1,175,579,056)
(10)	Actuarial Value of Assets on September 30, 2010 ((1) + (4)e. + (7) + (9)f.)	\$ 20,132,778,571



**SCHEDULE C**

**SUMMARY OF RECEIPTS AND DISBURSEMENTS  
FOR THE PERIOD ENDING SEPTEMBER 30, 2010**

<u>Receipts for the Period</u>		
Contributions:		
Members	\$ 321,402,984	
Employer	<u>753,212,896</u>	
Total		\$ 1,074,615,880
Investment Income		<u>1,453,726,379</u>
TOTAL		\$ 2,528,342,259
<u>Disbursements for the Period</u>		
Benefit Payments		\$ 1,429,920,808
Refunds to Members		36,855,916
DROP Distributions		138,026,882
Miscellaneous:		
Transfers to Plant Fund	\$138,469	
Transfers to Expense Fund	7,621,186	
Transfers to Pre-retirement Death Benefit Fund	<u>(2,073,591)</u>	
Total		<u>5,686,064</u>
TOTAL		\$ 1,610,489,670
<u>Excess of Receipts over Disbursements</u>		\$ 917,852,589
<u>Reconciliation of Asset Balances</u>		
Market Value of Assets as of September 30, 2009		\$ 15,971,029,120
Excess of Receipts over Disbursements		<u>917,852,589</u>
Market Value of Assets as of September 30, 2010		<u>\$ 16,888,881,709</u>



**SCHEDULE D**

**OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS**

The assumptions and methods used in the valuation were selected based on the actuarial experience study prepared as of September 30, 2005, submitted to and adopted by the Board on May 21, 2007. The retirement rates were since revised to reflect that the DROP program is closed to new applicants after March 24, 2011.

INVESTMENT RATE OF RETURN: 8% per annum, compounded annually.

SALARY INCREASES: Representative values of the assumed annual rates of future salary increases are as follows and include inflation at 4.50% per annum:

<u>Age</u>	<u>Annual Rate</u>
20	7.25%
25	7.25
30	7.75
35	7.00
40	6.50
45	6.25
50	6.00
55	5.50
60	5.00
65	5.00

SEPARATIONS BEFORE SERVICE RETIREMENT: Representative values of the assumed annual rates of death, disability, and withdrawal are as follows:

<u>Age</u>	<u>Death</u>	<u>Disability</u>	<u>Annual Rate of</u>			
			<u>Withdrawal</u>			
			<u>Years of Service</u>			
			<u>0-4</u>	<u>5-9</u>	<u>10-20</u>	<u>20+</u>
		<u>Male</u>				
20	0.05%	0.05%	30.00%			
25	0.07	0.06	16.50	12.00%		
30	0.08	0.07	15.00	5.50	5.50%	
35	0.09	0.13	15.00	5.50	3.00	
40	0.11	0.20	14.50	5.50	3.00	1.25%
45	0.16	0.21	14.50	5.25	3.00	1.00
50	0.26	0.64	12.00	4.50	3.00	1.00
55	0.44	1.20	11.50	4.00	2.25	1.00
60	0.80		10.00	4.00		
65	1.45		10.00	6.00		
69	2.17		10.00	6.00		
		<u>Female</u>				
20	0.03%	0.10%	30.00%			
25	0.03	0.10	14.50	8.00%		
30	0.04	0.10	14.50	6.00	4.00%	
35	0.05	0.15	13.50	6.00	3.50	
40	0.08	0.16	12.00	4.50	2.50	1.50%
45	0.10	0.37	11.50	3.75	2.50	0.75
50	0.16	0.70	11.00	3.75	2.50	0.75
55	0.26	1.10	10.50	3.75	2.50	0.75
60	0.51		11.00	4.50		
65	0.97		14.00	6.00		
69	1.37		14.00	6.00		



SERVICE RETIREMENT: Representative values of the assumed annual rates of service retirement are as follows:

For members first eligible for unreduced benefits upon attaining 25 years of service but before age 65, rates are as follows:

<u>Age</u>	<u>Annual Rate*</u>	
	<u>Male</u>	<u>Female</u>
45	30.0%	30.0%
50	15.0	16.0
55	10.0	13.0
60	10.0	25.0
62	25.0	43.0

\*Retirement rates adjusted in year when member first becomes eligible for unreduced service retirement on or after age 50 but before age 65.

For members first eligible for unreduced benefits before attaining 25 years of service and all members age 65 and over, the rates are as follows:

<u>Age</u>	<u>Annual Rate</u>	
	<u>Male</u>	<u>Female</u>
60	13.0%	22.0%
62	30.0	30.0
65	34.0	35.0
67	26.0	27.0
69	25.0	26.0
70	25.0	26.0
72	26.0	25.0
75	100.0	100.0

DEATHS AFTER RETIREMENT: Rates of mortality for the period after service retirement are according to the 1994 Group Annuity Mortality Table set forward one year for females. Special tables are used for the period after disability retirement. Representative values of the assumed annual rates of death after service and disability retirement are as follows:



Annual Rate of Death after

<u>Age</u>	<u>Service Retirement</u>		<u>Disability Retirement</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
40	0.11%	0.08%	3.32%	2.60%
45	0.16	0.10	3.49	2.43
50	0.26	0.16	3.76	2.50
55	0.44	0.26	4.20	2.67
60	0.80	0.51	4.88	2.95
65	1.45	0.97	5.95	3.39
70	2.37	1.50	7.63	4.08
75	3.72	2.53	10.22	5.16
80	6.20	4.40	14.17	6.85
85	9.72	7.53	20.09	9.47
90	15.29	12.88	28.67	13.46

SPOUSE’S BENEFIT: For those eligible for spouse’s benefits, it is assumed that 75% will elect the lump sum death benefit and 25% will elect the spouse’s benefit.

BENEFITS PAYABLE UPON SEPARATION FROM SERVICE: For active members who separate from service prior to eligibility for a service retirement allowance, it is assumed that those with at least 15 years of service will elect a deferred annuity and those with less than 15 years of service will elect to receive a refund of contributions and interest. Assumed refunds are reduced by 10% to account for interest accumulation adjustments which are less than the “regular” 4% rate adopted by the Board..

UNUSED SICK LEAVE: 3% load on service retirement, disability retirement and death in active service liabilities for active members.

PERCENTAGE MARRIED: 100% of active members are assumed to be married with the husband 3 years older than the wife.

VALUATION METHOD: Entry age normal cost method. Actuarial gains and losses are reflected in the unfunded actuarial accrued liability.

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 20% of the difference between market value and expected actuarial value.

LIABILITY FOR CURRENT INACTIVE MEMBERS: Member Contribution Balance is multiplied by a factor of 2.0.



## SCHEDULE E

### 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 (currently 8%), of each member's expected benefit payable 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 probability of his terminating with a service, disability or survivor's benefit. Future salary increases 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 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 contributions are determined by subtracting the present value of prospective employer normal contributions and member contributions together with the current assets held from the present value of expected benefits to be paid from the System.



## SCHEDULE F

### **SUMMARY OF MAIN PLAN PROVISIONS AS INTERPRETED FOR VALUATION PURPOSES**

The Teachers' Retirement System of Alabama was established on September 15, 1939 and went into effect September 30, 1941. The valuation took into account amendments to the System through the valuation date. The following summary describes the main benefit and contribution provisions of the System as interpreted for the valuation.

#### 1 - DEFINITIONS

Average Final Compensation - the average compensation of a member for the 3 highest years in the last 10 years of Creditable Service.

Membership Service – all service rendered while a member of the retirement system and for which contributions are made.

Creditable Service – the sum of membership service, prior service, and any other service established as creditable in accordance with the provisions of the retirement law.

Annuity – payments for life derived from accumulated contributions of a member.

Pension – payments for life derived from employer contributions.

Retirement Allowance – the sum of the annuity and pension.

#### 2 - BENEFITS

##### Service Retirement Allowance

###### Condition for Allowance

A retirement allowance is payable upon the request of any member who has completed 25 years of creditable service or who has attained age 60 and completed at least 10 years of creditable service.

###### Amount of Allowance

Upon service retirement a member receives a retirement allowance equal to 2.0125% of the member's average final compensation multiplied by the number of years of creditable service. At retirement, a member receives one additional year of creditable service in determining the retirement allowance for each five years of service as a full-time certified firefighter, police officer, or correctional officer.

The member may elect to receive a reduced retirement allowance in order to provide an allowance to a designated beneficiary after the member's death (see "Special Privileges at Retirement" below).



## Disability Retirement Allowance

### Condition for Allowance

A disability retirement allowance may be granted to a member who has 10 years or more of creditable service who becomes totally and permanently incapacitated for duty before reaching eligibility for a service retirement allowance.

### Amount of Allowance

On retirement for disability, a member receives a retirement allowance equal to 2.0125% of the member's average final compensation multiplied by the number of years of creditable service. At retirement, a member receives one additional year of creditable service in determining the retirement allowance for each five years of service as a full-time certified firefighter, police officer, or correctional officer.

The member may elect to receive a reduced retirement allowance in order to provide an allowance to a designated beneficiary after the member's death (see "Special Privileges at Retirement" below).

### Benefits Payable on Separation from Service

Any member who withdraws from service is entitled to receive his or her contributions with allowable interest. A member who has completed 10 years of creditable service may, after separation from service, continue in the membership of the System and file for service retirement after reaching age 60.

### Benefits Payable upon Death in Active Service

In the event of the death of a member eligible for service retirement, the designated beneficiary may elect (1) to exercise Option 3 defined below under "Special Privileges at Retirement" or (2) to receive a return of member contributions and total earned interest plus a death benefit payable from the pre-retirement death benefit fund equal to the salary on which the member made retirement contributions for the previous scholastic year (July 1-June 30).\*

In the event of the death of a member with more than one year of service who is not eligible to retire, the designated beneficiary shall receive the return of member contributions and total earned interest. Also, the designated beneficiary shall receive an additional death benefit payable from the pre-retirement death benefit fund equal to the salary on which retirement contributions were made for the previous scholastic year (July 1-June 30).\*

In the event of a job-related death of a member with less than one year of service, the designated beneficiary shall receive the return of member contributions and total earned interest plus a death benefit payable from the pre-retirement death benefit fund equal to the annual earnable compensation of the member at the time of death.\*



In the event of the death of a member with less than one year of service that is not job-related, the designated beneficiary shall receive the return of member contributions and total earned interest plus a matching death benefit which is limited to a \$5,000 maximum.

\*However, if the death occurred more than 180 calendar days after the member's last day in pay status, or if the deceased had applied for a refund of contributions or terminated employment, the lump sum will be the same as if the member had less than one year of service and the death was not job-related.

#### Special Privileges at Retirement

In lieu of the full retirement allowance, any member may, at retirement, elect to receive a reduced retirement allowance equal in value to the full allowance, with the provision that:

Option 1 - If the member dies before annuity payments have equaled the present value of the annuity at the date of retirement, the balance is paid to a designated beneficiary or to his estate, or

Option 2 - After the member's death, the member's allowance is continued throughout the life of the designated beneficiary, or

Option 3 - After the member's death, one-half of the member's allowance is continued throughout the life of the designated beneficiary, or

Option 4 - Some other benefit is paid either to the member or to such other person as the member shall designate provided such benefit, together with the reduced retirement allowance, is of equivalent actuarial value to his retirement allowance and is approved by the Board of Control.

#### Deferred Retirement Option Plan (DROP)

Prior to March 25, 2011, a member may elect to participate in the Deferred Retirement Option Plan (DROP) upon completion of at least 25 years of creditable service (excluding sick leave) and attainment of at least 55 years of age. Under the DROP, the member may defer receipt of a retirement allowance and continue employment for a period not to exceed five years, nor to be less than three years. At the end of this period, the member will withdraw from active service and receive the retirement benefit calculated at the time of enrollment in the DROP, and also receive a payment for the deferred retirement benefits, employee contributions while participating in the DROP and interest earned on DROP deposits.

The effect of Act 2011-27 is that no new participants will be allowed to enter DROP with an effective participation date after June 1, 2011.



## Member Contributions

Regular members contribute 5.0% of salary. Certified police officers and firefighters contribute 6.0% of salary. DROP participants continue to contribute during the DROP period, but receive a refund of these contributions and regular interest upon retirement.

“Regular Interest” is 4% which is the rate adopted by the Board and applied to the balance in each member’s account every year; however, if a member receives a refund of contributions, the interest rate applied to the refund is lower than the 4% regular rate (Based on Section 16-25-12(g)).

Beginning October 1, 2011, the contribution rates will increase to 7.25% for regular members and 8.25% for police officers and firefighters.

Beginning October 1, 2012, the contribution rates will increase to 7.50% for regular members and 8.50% for police officers and firefighters.

If positive investment performance results in a decrease in the total contribution rate paid by employers and employees participating in the System, the Retirement System of Alabama shall first reduce the employee contribution rate.



**SCHEDULE G**

**SCHEDULE OF MEMBERSHIP DATA  
AS OF SEPTEMBER 30, 2010**

**NUMBER OF ACTIVE MEMBERS AND THEIR AVERAGE COMPENSATION  
BY AGE AND YEARS OF SERVICE**

Attained Age	Years of Service										Total
	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	
Under 25	1,568	1,855	26								3,449
Avg. Pay	28,408	30,743	22,483								29,619
25 to 29	1,453	7,807	2,754	22							12,036
Avg. Pay	29,450	35,294	41,356	35,446							35,976
30 to 34	1,064	5,049	6,863	1,916	16						14,908
Avg. Pay	32,026	36,716	44,054	48,360	39,688						41,259
35 to 39	1,120	4,905	4,794	5,884	1,475	22					18,200
Avg. Pay	31,503	36,867	42,318	49,806	52,547	41,559					43,432
40 to 44	740	4,000	4,464	4,300	4,418	1,403	31				19,356
Avg. Pay	30,709	36,071	39,739	46,452	53,521	54,110	43,860				44,321
45 to 49	662	3,337	4,225	4,254	3,189	3,518	961	36			20,182
Avg. Pay	30,190	34,829	37,313	41,835	49,392	54,006	53,443	43,626			43,220
50 to 54	507	2,715	3,465	3,954	3,469	3,407	2,386	1,133	12		21,048
Avg. Pay	35,209	35,856	37,349	41,365	47,356	52,273	56,832	58,340	47,065		45,269
55 to 59	296	1,944	2,598	2,937	3,017	3,266	602	279	63		15,002
Avg. Pay	35,052	36,303	38,823	40,706	45,071	50,290	59,677	62,812	65,847		43,940
60 to 64	385	1,599	1,616	1,430	1,407	1,562	317	88	33	12	8,449
Avg. Pay	56,741	50,750	36,967	41,533	45,255	51,006	55,286	65,640	64,848	69,342	46,366
65 to 69	77	584	619	486	353	339	88	31	14	11	2,602
Avg. Pay	44,395	54,882	33,530	38,422	51,345	54,241	58,194	58,440	68,094	116,995	46,342
70 & up	21	216	252	214	134	108	44	34	19	16	1,058
Avg. Pay	44,426	57,364	25,758	27,351	42,120	47,907	42,678	30,691	59,969	73,818	39,440
Total	7,893	34,011	31,676	25,397	17,478	13,625	4,429	1,601	141	39	136,290
Avg. Pay	32,158	36,835	40,156	44,542	49,194	52,286	56,168	58,605	63,446	84,619	42,827



**NUMBER OF RETIRED MEMBERS  
AND THEIR BENEFITS BY AGE**

<b>Age</b>	<b>Number of Members</b>	<b>Total Annual Benefits</b>	<b>Average Annual Benefits</b>
Under 50	272	\$ 7,034,198	\$ 25,861
50 – 54	2,158	56,368,051	26,121
55 – 59	5,619	151,379,180	26,941
60 – 64	14,074	339,173,975	24,099
65 – 69	13,235	297,162,093	22,453
70 – 74	10,382	221,383,941	21,324
75 – 79	7,774	154,932,585	19,930
80 – 84	5,459	100,868,492	18,477
85 – 89	2,847	46,855,063	16,458
90 – 94	1,191	17,662,440	14,830
95 & Over	439	6,110,046	13,918
<b>Total</b>	<b>63,450</b>	<b>\$ 1,398,930,064</b>	<b>\$ 22,048</b>

**NUMBER OF DROP PARTICIPANTS  
AND THEIR BENEFITS BY AGE**

<b>Age</b>	<b>Number of Members</b>	<b>Total Annual Benefits</b>	<b>Average Annual Benefits</b>
55 – 59	3,407	\$ 108,706,452	\$ 31,907
60 – 64	1,879	56,559,566	30,101
65 – 69	362	11,946,348	33,001
70 – 74	70	2,437,039	34,815
75 – 79	18	789,513	43,862
80 – 84			
85 & Over	1	50,683	50,683
<b>Total</b>	<b>5,737</b>	<b>\$ 180,489,601</b>	<b>\$ 31,461</b>



**NUMBER OF BENEFICIARIES  
AND THEIR BENEFITS BY AGE**

<b>Age</b>	<b>Number of Members</b>	<b>Total Annual Benefits</b>	<b>Average Annual Benefits</b>
Under 50	290	\$ 2,647,925	\$ 9,131
50 – 54	159	1,647,935	10,364
55 – 59	243	3,180,790	13,090
60 – 64	367	5,028,399	13,701
65 – 69	441	7,424,086	16,835
70 – 74	496	7,285,558	14,689
75 – 79	516	7,862,583	15,238
80 – 84	538	7,513,242	13,965
85 – 89	421	5,474,399	13,003
90 – 94	194	1,969,053	10,150
95 & Over	50	443,282	8,866
<b>Total</b>	<b>3,715</b>	<b>\$ 50,477,252</b>	<b>\$ 13,587</b>

**NUMBER OF DISABLED RETIREES  
AND THEIR BENEFITS BY AGE**

<b>Age</b>	<b>Number of Members</b>	<b>Total Annual Benefits</b>	<b>Average Annual Benefits</b>
Under 50	337	\$ 3,353,907	\$ 9,952
50 – 54	512	5,494,728	10,732
55 – 59	953	10,944,139	11,484
60 – 64	1,162	12,546,418	10,797
65 – 69	770	8,360,719	10,858
70 – 74	395	4,382,428	11,095
75 – 79	210	2,260,749	10,765
80 – 84	110	1,251,575	11,378
85 – 89	54	658,186	12,189
90 – 94	22	263,805	11,991
95 & Over	1	17,320	17,320
<b>Total</b>	<b>4,526</b>	<b>\$ 49,533,974</b>	<b>\$ 10,944</b>