Cavanaugh Macdonald
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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, 2015

Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

June 22, 2016

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, 2015 in accordance with Section 16-25-19(q) 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, 2015 and to recommend rates of State contribution. While not verifying the data at the source, the actuary performed tests for consistency and reasonability.

On the basis of the valuation, we have determined employer contribution rates of 12.24% of payroll for Tier I members and 11.01% of payroll for Tier II members for the fiscal year ending September 30, 2018.

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 smoothed market value of assets is used for actuarial valuation purposes. Gains and losses are reflected in the unfunded actuarial accrued liability that is being amortized by regular annual contributions as a level percentage of payroll, on the assumption that payroll will increase by 3.25% annually. The 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 outlined in the Board's funding policy.

In this report, we provided the following information and supporting schedules in the Actuarial and Statistical Sections of the Comprehensive Annual Financial Report (CAFR):

- Summary of Actuarial Assumptions and Methods
- Actuarial Cost Method
- Summary of Plan Provisions as Interpreted for Valuation Purposes
- Schedule of Funding Progress
- Solvency Test
- Schedule of Active Member Valuation Data

We also provide the following schedules for the CAFR in a separate supplemental report:

- Analysis of Actuarial Gains and Losses
- Schedule of Retirants and Beneficiaries Added and Removed from Rolls
- Retired Members by Type of Benefit as of September 30, 2015
- Ten-Year History of Average Monthly Benefit Payments as of September 30

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The necessary GASB Statement Nos. 67 and 68 disclosure information is provided in separate supplemental reports.

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.

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.

The actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

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,

Edward A. Macdonald, ASA, FCA, MAAA
President

Cathy Turcot
Principal and Managing Director

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting 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, 2015

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:

VALUATION DATE	September 30, 2015	September 30, 2014
Active members		
Number	135,986	135,230
Annual compensation	$ 6,297,938,621	$ 6,214,949,700
Retired members and beneficiaries		
Number	88,633	85,209
Annual allowances	$ 1,964,212,008	$ 1,865,549,629
DROP participants		
Number	699	1,748
Annual compensation	$ 52,847,343	$ 120,210,805
Annual allowances	26,937,787	62,162,236
Assets		
Actuarial value	$ 21,740,279,791	$ 20,809,871,128
Market value	21,574,652,720	22,253,817,957
Unfunded actuarial accrued liability	$ 10,104,562,691	$ 10,027,958,472
Funded Ratio	68.3%	67.5%
CONTRIBUTIONS FOR FISCAL YEAR ENDING	**September 30, 2018**	**September 30, 2017**
Tier I (first hired prior to January 1, 2013)		
Employer contribution rate		
Normal	2.43%	2.00%
Unfunded actuarial accrued liability	9.45	9.65
Death benefit	0.02	0.02
Term life	0.01	0.01
Administration	0.33	0.33
Total	12.24%	12.01%
Tier II (first hired on or after January 1, 2013)		
Employer contribution rate		
Normal	1.20%	0.81%
Unfunded actuarial accrued liability	9.45	9.65
Death benefit	0.02	0.02
Term life	0.01	0.01
Administration	0.33	0.33
Total	11.01%	10.82%
Blended Amortization period	29.5 years	29.8 years

2. Comments on the valuation results as of September 30, 2015 are given in Section IV and further discussion of the contribution levels is set out in Section V.

3. Schedule D of this report shows the development of the smoothed interest rate used for valuation purposes. Schedule B shows the development of the actuarial value of assets. Schedule E of this report outlines the full set of actuarial assumptions and methods used in the current valuation. Since the previous valuation, there was a modification to the programming to remove the 10% reduction applied to member contribution refunds. This reduction was to account for interest accumulation adjustments less than 4% paid to members. However, since this interest is transferred from the assets used for valuation purposes to the Expense Fund, it was more appropriate to reflect the full liability in the valuation. The Board funding policy is shown in Schedule G.

4. Provisions of the System, as summarized in Schedule I, were taken into account in the current valuation. There have been no changes since the previous valuation. Section VI of this report shows the certification of the liquidation period used to determine the accrued liability contribution rate.

5. The funded ratio shown in the Summary of Principal Results is the ratio of the actuarial value of assets to the actuarial accrued liability. The funded status would be different based on the market value of assets. The funded ratio is an indication of progress in funding the promised benefits. Since the ratio is less than 100%, there is a need for additional contributions towards payment of the unfunded actuarial accrued liability. In addition, this funded ratio does not have any relationship to measuring sufficiency if the plan had to settle its liabilities.

SECTION II - MEMBERSHIP

1. The following table shows the number of active members and their annual compensation as of September 30, 2015 on the basis of which the valuation was prepared.

TABLE 1

THE NUMBER AND ANNUAL COMPENSATION OF ACTIVE MEMBERS AS OF SEPTEMBER 30, 2015

GROUP	NUMBER	COMPENSATION
Tier I	113,362	$ 5,501,829,930
Tier II	22,624	796,108,691
Subtotal	135,986	$ 6,297,938,621
DROP	699	52,847,343
Total	136,685	$ 6,350,785,964

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 15,916 inactive members and contribution balances for 29,071 non-vested inactive members who have not contributed for more than 5 years.

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

TABLE 2

SCHEDULE OF ACTIVE MEMBER VALUATION DATA

Valuation Date	Number	Annual Payroll	Annual Average Pay	% Increase in Average Pay
9/30/2015[1]	135,986	$ 6,297,938,621	$ 46,313	0.77%
9/30/2014[2]	135,230	6,214,949,700	45,958	1.48
9/30/2013[3]	133,919	6,065,042,345	45,289	2.06
9/30/2012[4]	133,791	5,936,831,043	44,374	3.74
9/30/2011[5]	135,768	5,807,655,862	42,776	(0.12)
9/30/2010[6]	136,290	5,836,902,762	42,827	(0.01)

[1] In addition, there are 699 employees with annual compensation of $52,847,343 who are currently participating in the DROP program. Employers of the Retirement System contribute on this payroll.
[2] In addition, there are 1,748 employees with annual compensation of $120,210,805 who are currently participating in the DROP program. Employers of the Retirement System contribute on this payroll.
[3] In addition, there are 3,029 employees with annual compensation of $198,322,151 who are currently participating in the DROP program. Employers of the Retirement System contribute on this payroll.
[3] In addition, there are 4,436 employees with annual compensation of $285,484,977 who are currently participating in the DROP program. Employers of the Retirement System contribute on this payroll.
[4] In addition, there are 5,625 employees with annual compensation of $$351,906,404 who are currently participating in the DROP program. Employers of the Retirement System contribute on this payroll.
[5] 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.

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, 2015

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES
Service Retirements	78,547	$ 1,833,828,764
Disability Retirements	5,523	62,204,273
Beneficiaries of Deceased Members	4,563	68,178,971
Subtotal	88,633	$ 1,964,212,008
DROP Participants	699	26,937,787
Total	89,332	$ 1,991,149,795

4. Schedule J 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 six funds for the purpose of recording the fiscal transactions of the System, namely, the Annuity Savings Fund, the Pension Accumulation Fund, the Deferred Retirement Option Plan Fund, the Pre-Retirement Death Benefit Fund, the Life Insurance Fund and the Expense 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, 2015, which represent the accumulated contributions of active members to that date, including interest, amounted to $4,894,144,912.

(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, the Life Insurance Fund or the Expense Fund. 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, 2015 the market value of assets credited to this fund amounted to $16,194,523,396.

(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. The DROP is closed to new participants as of June 1, 2011. On September 30, 2015, the market value of assets credited to this Fund amounted to $485,984,412.

(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, 2015, the market value of assets credited to this fund amounted to $50,294,645. These assets are not included in the valuation and the liabilities associated with these death benefits are not included in the valuation.

(e) Life Insurance Fund

The Life Insurance Fund is the fund to which are credited contributions made by the employer for life insurance benefits which became effective October 1, 1987. On September 30, 2015, the market value of assets credited to this fund amounted to $15,708,896. These assets are not included in the valuation and the liabilities associated with these life insurance benefits are not included in the valuation.

(f) Expense Fund

The Expense Fund is the fund from which the expenses of the administration of the retirement system are paid. Any amounts credited to the accounts of members withdrawing before retirement and not returnable under the provisions of subsection (g) of Section 16-25-14 are credited to the Expense Fund. Additional contributions required to meet the expenses of the retirement system made by the employer are also credited to this fund. On September 30, 2015, the market value of assets credited to this fund amounted to $12,006,561. These assets are not included in the valuation.

2. As of September 30, 2015 the total market value of assets reported exclusive of the Pre-Retirement Death Benefit Fund, the Life Insurance Fund and the Expense Fund amounted to $21,574,652,720 as shown in the following table.

TABLE 4

MARKET VALUE OF ASSETS BY FUND
AS OF SEPTEMBER 30, 2015

FUND	MARKET VALUE OF ASSETS
Annuity Savings Fund	$ 4,894,144,912
Pension Accumulation Fund	16,194,523,396
DROP Fund	485,984,412
Total Market Value of Assets	$ 21,574,652,720

3. The five-year market related actuarial value of assets as of September 30, 2015 was $21,740,279,791. Schedule B shows the development of the actuarial value of assets as of September 30, 2015.

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, 2015.

2. The valuation balance sheet shows that the System has total prospective liabilities of $36,506,646,228. Of this amount, $18,621,250,135 is for the prospective benefits payable on account of present retired members, beneficiaries of deceased members, and DROP participants, $629,364,544 is for the prospective benefits payable on account of present inactive members and $17,256,031,549 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, the Life Insurance Fund and the Expense Fund, of $21,740,279,791 as of September 30, 2015. The difference of $14,766,366,437 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, $3,560,025,802 is the present value of future contributions expected to be made by members to the Annuity Savings Fund, and the balance of $11,206,340,635 represents the present value of future contributions payable by the employer.

3. The employer's regular contributions to the System consist of normal contributions and unfunded actuarial accrued liability (UAAL) contributions. The valuation indicates that employer normal contributions at the rate of 2.43% of payroll for Tier I members and 1.20% of payroll for Tier II members are required to provide the benefits of the System.

4. Prospective normal contributions have a present value of $1,101,777,944. When this amount is subtracted from $11,206,340,635 which is the present value of the total future contributions to be made by the employer, there remains $10,104,562,691 as the amount of future UAAL contributions.

5. The funding policy adopted by the Board, as shown in Schedule G, provides that one-fifteenth of the unfunded actuarial liability as of September 30, 2012 (Transitional UAAL) will be amortized as a level percent of payroll over a closed period. The closed period shall be the amortization period for the September 30, 2012 valuation, not to exceed 30 years. The remaining Transitional UAAL each year will be amortized over an open period. The open period shall be the amortization period for the September 30, 2012 valuation, not to exceed 30 years. After 15 years the entire Transitional UAAL

will be closed. In each subsequent valuation all benefit changes, assumption and method changes and experience gains and/or losses that have occurred since the previous valuation will determine a New Incremental UAAL. Each New Incremental UAAL will be amortized as a level percent of payroll over a closed 30–year period from the date it is established.

6. The total UAAL contribution rate is 9.45% of payroll determined in accordance with the Board's funding policy. The UAAL contribution rate has been calculated on the assumption that the aggregate amount of accrued liability contribution will increase by 3.25% each year. Schedule H of this report shows a projection of the open Transitional UAAL and amortization schedules for all closed bases on September 30, 2015.

7. The following table shows the components of the total unfunded actuarial accrued liability (UAAL) and the derivation of the accrued liability contribution rate in accordance with the funding policy.

TABLE 5

TOTAL UAAL AND UAAL CONTRIBUTION

	UAAL	Amortization Period	Amortization Payment
Open Transitional	$ 7,276,833,673	30	$466,722,853
Closed Transitional 9/30/2012	659,423,718	27	44,548,455
Closed Transitional 9/30/2013	660,846,260	28	43,830,581
Closed Transitional 9/30/2014	661,530,334	29	43,124,275
Closed Transitional 9/30/2015	661,530,334	30	42,429,350
New Incremental 9/30/2013	433,527,124	28	28,753,655
New Incremental 9/30/2014	(169,226,658)	29	(11,031,659)
New Incremental 9/30/2015	(79,902,094)	30	(5,124,775)
Total	$10,104,562,691		$653,252,735
Total Amortized Payment Adjusted for Timing			$628,592,737
Total Estimated Payroll			$6,653,009,015
UAAL Contribution Rate			9.45%

8. A contribution of 0.02% is required to meet the cost of the pre-retirement death benefit program this year. The assets and liabilities of this program are not included in the valuation. A contribution of 0.01% is required to meet the cost of life insurance premiums. The assets and liabilities of this program are not included in the valuation.

9. An additional contribution of 0.33% 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, 2015 it is recommended that the employer make contributions at the following rates beginning October 1, 2017:

TABLE 6

EMPLOYER CONTRIBUTION RATES
AS A PERCENTAGE OF MEMBERS' COMPENSATION*

EMPLOYER CONTRIBUTION	FISCAL YEAR ENDING SEPTEMBER 30, 2018	
	Tier I	Tier II
Normal	2.43%	1.20%
Unfunded Actuarial Accrued Liability	9.45	9.45
Death Benefit	0.02	0.02
Term-Life	0.01	0.01
Administration	0.33	0.33
Total	12.24%	11.01%

* All members initially joining the System on and after January 1, 2013 are Tier II members.

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. These additional rates were determined based on the liabilities for the prior service of members at the time the unit joined the System, amortized over a fixed number of years.

TABLE 7

ADDITIONAL RATES REQUIRED FOR SPECIAL UNITS OF THE SYSTEM

UNIT	ADDITIONAL EMPLOYER RATE	THROUGH FISCAL YEAR ENDING SEPTEMBER 30
Developing Alabama Youth Foundation	2.74	2017
Alabama Congress of Parents and Teachers	2.15	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 a change since the previous valuation in the liquidation period used to determine the accrued liability contribution rate from 29.8 years to 29.5 years. The unfunded actuarial accrued liability rate of 9.45% to be paid by employers to the Teachers' Retirement System of Alabama has been determined in accordance with the Funding Policy adopted by the Board and shown in Schedule G of this report.

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 $76,604,219 in the unfunded actuarial accrued liability from $10,027,958,472 to $10,104,562,691 during the year ending September 30, 2015.

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ANALYSIS OF FINANCIAL EXPERIENCE
(in millions of dollars)

ITEM	AMOUNT OF INCREASE/ (DECREASE) IN UAAL
Interest (8.15%) added to previous UAAL	$ 817.3
Accrued liability contribution*	(650.8)
Experience:	
Valuation asset growth	(212.9)
Pensioners' mortality	10.0
Turnover and retirements	(3.1)
New entrants	39.0
Salary increases	(307.1)
Method changes	0.0
Amendments	0.0
Interest Smoothing	385.6
Miscellaneous changes	(1.4)
Total Increase/(Decrease) in UAAL	$ 76.6

*Equal to the total contributions made to the System less the normal cost for the year adjusted for interest to September 30, 2015 (($1,192,802,253 x 1.04075) – ($546,136,386 x 1.0815)).

SECTION VIII - ACCOUNTING INFORMATION

The information required under Governmental Accounting Standard Board (GASB) Statements No. 67 and 68 will be issued in separate reports. The following information is provided for informational purposes only.

1. The following is a distribution of the number of employees by type of membership.

NUMBER OF ACTIVE AND RETIRED MEMBERS
AS OF SEPTEMBER 30, 2015

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits	88,633
DROP participants	699
Terminated employees entitled to benefits but not yet receiving benefits	15,916
Non-vested inactive members who have not contributed for more than 5 years	29,071
Active members	135,986
Total	270,305

2. The schedule of funding progress is 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)
9/30/2010	$20,132,779	$28,299,523	$8,166,744	71.1%	$6,183,204	132.1%
9/30/2011[1]	19,430,135	28,776,316	9,346,181	67.5	6,159,562	151.7
9/30/2012[2]	18,786,008	28,251,367	9,465,359	66.5	6,222,316	152.1
9/30/2013	19,629,816	29,665,843	10,036,027	66.2	6,263,364	160.2
9/30/2014	20,809,871	30,837,829	10,027,958	67.5	6,335,161	158.3
9/30/2015	21,740,280	31,844,843	10,104,563	68.3	6,350,786	159.1

[1]Reflects changes in assumptions.
[2]Reflects changes in methods.

3. The information presented above was determined as part of the actuarial valuation at September 30, 2015. Additional information as of the latest actuarial valuation follows.

Valuation date	09/30/2015
Actuarial cost method	Entry Age Normal
Amortization method	Level percent closed
Single equivalent remaining amortization period	29.5 years
Asset valuation method	Five-year market related value
Actuarial assumptions:	
Ultimate Investment Rate of Return*	8.00%
Projected salary increases*	3.50 - 8.25%
Cost-of-living adjustments	None
*Includes price inflation at	3.00%

SCHEDULE A

VALUATION BALANCE SHEET
SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF
THE TEACHERS' RETIREMENT SYSTEM OF ALABAMA
AS OF SEPTEMBER 30, 2015

	September 30, 2015
ASSETS	
Actuarial Value of Assets	$ 21,740,279,791
Present value of future members' contributions to the Annuity Savings Fund	$ 3,560,025,802
Present value of future employer contributions to the Pension Accumulation Fund	
Normal contributions	$ 1,101,777,944
Unfunded actuarial accrued liability contributions	10,104,562,691
Total prospective employer contributions	$ 11,206,340,635
Total Assets	$ 36,506,646,228
LIABILITIES	
Present value of benefits payable on account of retired members, beneficiaries of deceased members now drawing retirement allowances, and DROP participants	
Service Retirements	$ 17,072,238,046
Disability Retirements	528,596,856
Beneficiaries of Deceased Members	534,430,821
DROP Participant Accounts	485,984,412
Total	$ 18,621,250,135
Inactive Members	$ 585,925,616
Inactive T-Section Accounts	$ 43,438,928
Present value of prospective benefits payable on account of present active members:	
Service retirement allowances	$ 15,507,381,139
Disability retirement allowances	609,644,230
Death Benefits	108,429,768
Termination Benefits	1,030,576,412
Total	$ 17,256,031,549
Total Liabilities	$ 36,506,646,228

SCHEDULE A
(continued)

SOLVENCY TEST
($1000's)

	Aggregate Accrued Liabilities For				Portion of Accrued Liabilities Covered by Reported Asset		
Valuation Date	**(1) Active Member Contributions**	**(2) Retirants and Beneficiaries**	**(3) Active Members (Employer Financed Portion)**	**Reported Assets**	**(1)**	**(2)**	**(3)**
9/30/2015	$4,894,145	$18,621,250	$8,329,448	$21,740,280	100%	90%	0.0%
9/30/2014	4,589,021	18,104,369	8,144,439	20,809,871	100	90	0.0
9/30/2013	4,261,269	17,666,932	7,737,642	19,629,816	100	87	0.0
9/30/2012[1]	3,921,179	17,085,972	7,244,216	18,786,008	100	87	0.0
9/30/2011[2]	3,620,301	17,245,088	7,910,927	19,430,135	100	92	0.0
9/30/2010	3,498,959	16,083,293	8,717,271	20,132,779	100	100	6.3

[1] Reflects changes in methods.
[2] Reflects changes in actuarial assumptions.

SCHEDULE B

DEVELOPMENT OF SEPTEMBER 30, 2015 ACTUARIAL VALUE OF ASSETS

(1)	Actuarial Value of Assets on September 30, 2014	$ 20,809,871,128
(2)	Market Value of Assets on September 30, 2015	21,574,652,720
(3)	Market Value of Assets on September 30, 2014	22,253,817,957
(4)	Net Cash Flow During the Fiscal Year	
	a. Contributions	1,192,802,253
	b. Benefit Payments and DROP Distributions	2,075,228,736
	c. Refunds to Members	53,133,999
	d. Transfer to Expense Fund – Interest Forfeiture	4,625,284
	e. Investment Expenses	9,554,122
	f. Net Cash Flow: (a. - b. - c. - d. - e.)	(949,739,888)
(5)	Actual Investment Return ((2) - (3) - (4)f.)	270,574,651
(6)	Assumed Rate of Return on Assets	8.00%
(7)	Amount for Immediate Recognition ((3) * (6)) + (((4)a. - (4)b. - (4)c. - (4)d.) * .5 * (6)) + (4)e.	1,752,252,128
(8)	Investment Gain/(Loss) for the Fiscal Year ((5) - (7))	(1,481,677,477)
(9)	Phased-In Recognition of Investment Gain/(Loss)	
	a. Current Fiscal Year: (.2 * (8))	(296,335,495)
	b. Prior Fiscal Year	171,251,071
	c. Second Prior Fiscal Year	252,980,847
	d. Third Prior Fiscal Year	0
	e. Fourth Prior Fiscal Year	0
	f. Total Recognized Investment Gain/(Loss) for Fiscal Year	127,896,423
(10)	Actuarial Value of Assets on September 30, 2015 ((1) + (4)f. + (7) + (9)f.)	$ 21,740,279,791

Date	Investment Gain/(Loss)	Amount Recognized	Remaining Balance as of September 30, 2015
9/30/2013	$ 1,264,904,237	$ 758,942,541	$ 505,961,696
9/30/2014	856,255,357	342,502,142	513,753,215
9/30/2015	$ (1,481,677,477)	$ (296,335,495)	$ (1,185,341,982)

SCHEDULE C

SUMMARY OF RECEIPTS AND DISBURSEMENTS
FOR THE PERIOD ENDING SEPTEMBER 30, 2015

Receipts for the Period		
Contributions:		
Members	$ 477,917,619	
Employer	714,884,634	
Total		$ 1,192,802,253
Investment Income		267,873,704*
TOTAL		$ 1,460,675,957
Disbursements for the Period		
Benefit Payments		$ 1,862,163,274
Refunds to Members		53,133,999
DROP Distributions		213,065,462
Miscellaneous:		
Transfers from Plant Fund	$ (28,027)	
Transfers to Expense Fund –Interest Forfeiture	4,625,284	
Transfers to Expense Fund –Investment Expenses	6,407,122	
Transfers to Pre-retirement Death Benefit Fund	474,080	
Total		11,478,459
TOTAL		$ 2,139,841,194
Excess of Receipts over Disbursements		$ (679,165,237)
Reconciliation of Asset Balances		
Market Value of Assets as of September 30, 2014		$ 22,253,817,957
Excess of Receipts over Disbursements		(679,165,237)
Market Value of Assets as of September 30, 2015		$ 21,574,652,720

*Net of $3,147,000 in investment expenses.

SCHEDULE D

SMOOTHED INTEREST RATE

Actual Rate of Return for 5 Year Look Back Period

Fiscal Year Ending 9/30	Actual Rate of Return for Fiscal Year
2011	1.81
2012	18.30
2013	14.93
2014	12.13
2015	1.04

SMOOTHED INTEREST RATE: The assumed rate of return during the 25 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 five 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 8.00%). On this basis, for the September 30, 2015 valuation, the smoothed interest rate during the 25 year look forward period has been determined to be 7.72%.

ULTIMATE INVESTMENT RATE OF RETURN: 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 25 year look forward period and is currently 8.00%.

CORRIDOR AROUND SMOOTHED INTEREST RATE: A corridor of 0.50% around the ultimate investment rate of return is applied in determining the smoothed interest rate. In addition, the limited smoothed interest rate may not increase or decrease by more than 1/8% each year. The smoothed interest rate used in the last valuation was 8.15%, therefore the corridor around the smoothed interest rate applied in the current valuation is 8.02% to 8.27%.

LIMITED SMOOTHED INTEREST RATE: The assumed rate of return during the 25 year look forward period used for valuation purposes is limited by the application of the corridor above. Since the smoothed interest rate is 7.72%, the assumed rate for the first 25 years after the valuation date is outside the corridor. The smoothed interest rate for valuation purposes is limited to 8.02%

SCHEDULE E

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, 2010, submitted to and adopted by the Board on January 27, 2012.

ULTIMATE INVESTMENT RATE OF RETURN: 8.00% per annum, compounded annually, including price inflation at 3%.

SALARY INCREASES: Representative values of the assumed annual rates of future salary increases are as follows and include wage inflation at 3.25% per annum:

Service	Annual Rate	Service	Annual Rate
0	8.25 %	6	5.00 %
1	6.50	7	4.75
2	5.75	8 to 13	4.50
3	5.50	14 to 18	4.00
4	5.25	19 & Over	3.50
5	5.00		

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

	Annual Rate of						
Age	Death*	Disability		Withdrawal			
		Years of Service		Years of Service			
		0-24	25+	0-4	5-9	10-20	20+
		Male					
20	0.02%	0.04%		30.00%			
25	0.02	0.05		15.68	10.00%		
30	0.03	0.05		14.25	5.40	5.00%	
35	0.05	0.10		14.25	5.40	3.00	
40	0.07	0.18		14.00	5.40	2.50	1.00%
45	0.09	0.31	0.10%	14.00	5.00	2.50	1.00
50	0.12	0.51	0.10	12.50	4.50	2.50	1.00
55	0.20	0.96	0.10	12.00	4.00	2.50	1.00
60	0.40	0.50	0.10	12.00	4.00		
65	0.77			12.00	6.00		
69	1.20			12.00	6.00		
		Female					
20	0.01%	0.10%		28.50%			
25	0.01	0.10		14.00	8.00%		
30	0.01	0.10		14.00	5.80	4.00%	
35	0.02	0.15		14.00	5.00	3.00	
40	0.03	0.16		12.00	4.50	2.10	1.10%
45	0.04	0.33	0.15%	11.50	3.75	2.10	0.75
50	0.06	0.63	0.15	11.00	3.75	2.10	0.75
55	0.11	0.99	0.15	11.00	3.75	2.50	0.75
60	0.21	0.25	0.25	12.00	4.50		
65	0.40			14.00	6.00		
69	0.62			14.00	6.00		

* Rates of pre-retirement mortality are according to the sex distinct RP-2000 Combined Mortality Table Projected with Scale AA to 2015 set back one year for females with an adjustment of factor of 0.75 for males and 0.50 for females.

SERVICE RETIREMENT:

The assumed annual rates of service retirement for **Tier I** members are as follows:

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

	Annual Rate	
Age Group	Male*	Female**
47 & Under	20.0%	25.0%
48	20.0	17.0
49	20.0	16.0
50 to 52	15.0	16.0
53 to 54	14.0	16.0
55 to 59	15.0	20.0
60	15.0	15.0
61	20.0	25.0
62	35.0	35.0
63	30.0	25.0
64	25.0	30.0

*Retirement rates are increased by 7% in the year first eligible for service retirement from age 50 through age 54 and by 10% from age 55 through age 60.

**Retirement rates are increased by 7% in the year first eligible for service retirement from age 50 through age 54 and by 20% from age 55 through age 60.

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

	Annual Rate	
Age Group	Male	Female
60	13.0%	20.0%
61	12.0	15.0
62	28.0	25.0
63	20.0	20.0
64	15.0	18.0
65	30.0	30.0
66	28.0	30.0
67	20.0	25.0
68	20.0	28.0
69	20.0	22.0
70	20.0	25.0
71 to 74	20.0	22.0
75 & Above	100.0	100.0

The assumed annual rates of service retirement for **Tier II** members are as follows:

Age Group	Annual Rate: Male – Less than 25 years of service	Male – 25 or more years of service	Female – Less than 25 years of service	Female – 25 or more years of service
62	50.0%	60.0%	50.0%	65.0%
63	20.0	30.0	20.0	25.0
64	15.0	25.0	18.0	30.0
65	30.0	30.0	30.0	30.0
66	28.0	28.0	30.0	30.0
67	20.0	20.0	25.0	25.0
68	20.0	20.0	28.0	28.0
69	20.0	20.0	22.0	22.0
70	20.0	20.0	25.0	25.0
71 to 74	20.0	20.0	22.0	22.0
75 & above	100.0	100.0	100.0	100.0

DEATHS AFTER RETIREMENT: Rates of mortality for the period after service retirement are according to the sex distinct RP-2000 Combined Mortality Table Projected with Scale AA to 2015 set back one year for females. Rates of mortality for the period after disability retirement are according to the RP-2000 Disabled Mortality Table, adjusted for males by a factor of 0.85. Representative values of the assumed annual rates of death after retirement are as follows:

Age	Annual Rate: After Service Retirement – Male	After Service Retirement – Female	After Disability Retirement – Male	After Disability Retirement – Female
35	0.07%	0.04%	1.92%	0.75%
40	0.10	0.05	1.92	0.75
45	0.12	0.08	1.92	0.75
50	0.16	0.12	2.46	1.15
55	0.27	0.21	3.01	1.65
60	0.53	0.41	3.57	2.18
65	1.03	0.80	4.26	2.80
70	1.77	1.38	5.32	3.76
75	3.06	2.26	6.98	5.22
80	5.54	3.74	9.30	7.23
85	9.97	6.35	12.04	10.02
90	17.27	11.39	15.59	14.00
95	25.96	17.74	22.74	19.45

In our opinion, the projection to 2015 of the RP-2000 mortality rates with Scale AA continues to provide a sufficient margin in the assumed rates of mortality to allow for additional improvement in mortality experience.

SPOUSE'S BENEFIT: For those eligible for spouse's benefits, it is assumed that 75% will elect the lump sum death benefit payable from the death benefit fund and 25% will elect the spouse's benefit payable from the pension accumulation fund and included in the liabilities of the System.

BENEFITS PAYABLE UPON SEPARATION FROM SERVICE: For active members who separate from service prior to eligibility for a service retirement allowance, the liability is assumed to be the greater of the value of the refund of contributions and the value of the deferred annuity. Although interest accumulation adjustments on refunds of contributions are less than the “regular” 4% rate adopted by the Board, no adjustments are made since the interest not paid to the member is transferred to the expense fund.

UNUSED SICK LEAVE: 3% load on service retirement liabilities for active members. (No load for Tier II members)

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

VALUATION METHOD: Individual 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 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 market value. In order to reduce short-term volatility in valuation results and because the market value and actuarial value of assets were close in value, the actuarial value of assets was set equal to the market value on September 30, 2012. 5-year smoothing commenced again beginning September 30, 2013.

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

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 25 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 5 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 8.00%). The interest rate after the 25 year look forward period is the ultimate investment rate of return of 8.00%.

CORRIDOR LIMIT ON INTEREST SMOOTHING: A corridor of 0.50% around the ultimate investment rate of return is applied in determining the smoothed interest rate. In addition, the limited smoothed interest rate may not increase or decrease by more than 1/8% each year.

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 D and E for a description of the interest rate used), 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 "individual 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 each 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 actuarial 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 G

BOARD FUNDING POLICY

The purpose of the funding policy is to state the overall funding objectives for the Teachers' Retirement System of Alabama (System), the benchmarks that will be used to measure progress in achieving those goals, and the methods and assumptions that will be employed to develop the benchmarks. The funding policy reflects the Board's long-term strategy for stability in funding of the plan. For that reason, it is critical that this funding policy remain unchanged until its objectives are met.

I. Funding Objectives

The goal in requiring employer and member contributions to the System is to accumulate sufficient assets during a member's employment to fully finance the benefits the member is expected to receive throughout retirement. In meeting this objective, the System will strive to meet the following funding objectives:

- To maintain an increasing funded ratio (ratio of system actuarial value of assets to actuarial accrued liabilities) that reflects a trend of improved actuarial condition. The long-term objective is to attain a funded ratio which is consistent with the fiscal health and long-term stability of the System.
- To maintain adequate asset levels to finance the benefits promised to members and monitor the future demands for liquidity.
- To develop a pattern of contribution rates expressed as a percentage of member payroll as measured by valuations prepared in accordance with applicable State laws and the principles of practice prescribed by the Actuarial Standards Board. In no event will the employer contribution rate be negative.
- To provide intergenerational equity for taxpayers with respect to System costs.

II. Benchmarks

To track progress in achieving the previously outlined funding objectives, the following benchmarks will be measured annually as of the valuation date. The valuation date is the date that the annual actuarial valuation of the System's assets and liabilities is prepared. This date is currently September 30th each year with due recognition that a single year's results may not be indicative of long-term trends:

- **Funded ratio** – The funded ratio, defined as the actuarial value of assets divided by the actuarial accrued liability, should increase over time, before adjustments for changes in benefits, actuarial methods, and/or actuarial assumptions. An open amortization period is one for which the amortization period is recalculated on a yearly basis and the ending date of the amortization period is a variable with each recalculation. A closed amortization period is one which is calculated over a fixed period and at the end of that period, the amount is fully amortized.
- **Unfunded Actuarial Accrued Liability (UAAL)**
  - **Transitional UAAL -** The UAAL established as of the initial valuation date for which this funding policy is adopted shall be known as the Transitional UAAL (applicable only to employers participating in the System as of the adoption date of the funding policy).
  - **New Incremental UAAL -** Each subsequent valuation will produce a New Incremental UAAL consisting of all benefit changes, assumption and method changes and experience gains and/or losses that have occurred since the previous valuation.
- **UAAL Amortization Period and Contribution Rates**
  - In each valuation 1/15th of the Transitional UAAL will be amortized over a closed period. The closed period shall be the amortization period for the valuation preceding the adoption of the funding policy not to exceed 30 years. The remaining Transitional UAAL each year will be amortized over an open period. The open period shall be the amortization period for the valuation preceding the adoption of the funding policy not to exceed 30 years. After 15 years the entire Transitional UAAL will be closed.
  - Each New Incremental UAAL shall be amortized over a closed 30 year period.
  - Employer Normal Contribution Rate – the contribution rate determined as of the valuation date each year based on the provisions of Alabama Code Section 16-25-21.
  - In each valuation subsequent to the adoption of this funding policy the required employer contribution rate will be determined by the summation of the employer Normal Contribution Rate, a contribution rate for administrative expenses, a contribution rate for the

pre-retirement death benefit fund, a contribution rate for the term life insurance fund, the individual amortization rate for each of the New Incremental UAAL bases, the individual amortization rate for each of the 15 closed periods for the Transitional UAAL and the amortization of any remaining open portion of the Transitional UAAL.

- **UAAL Amortization Period for Employers joining the System after the Implementation of this Funding Policy**
  - For Employers joining the System after the implementation of this Funding Policy, the employer contribution rate shall be computed as the sum of the employer Normal Contribution rate, a contribution rate for administrative expenses, a contribution rate for the pre-retirement death benefit fund, a contribution rate for the term life insurance fund, and the initial UAAL contribution rate. The initial UAAL contribution rate shall be determined by amortizing the initial UAAL over a closed period equal to the expected future working lifetime of the active membership. This initial amortization period shall not be less than 10 years nor greater than 30 years.
  - In subsequent years the UAAL and employer contribution rate shall be determined in accordance with the rules of the Funding Policy described in the previous section.

III. Methods and Assumptions

The actuarial funding method used to develop the benchmarks will be the Entry Age Normal (EAN) actuarial cost method. The actuarial methods and assumptions used will be those last adopted by the Board based upon the advice and recommendation of the actuary including the Interest Smoothing methodology. The actuary shall conduct an investigation into the system's experience at least every five years and utilize the results of the investigation to form the basis for those recommendations which shall include the Interest Smoothing Methodology.

IV. Funding Policy Progress

The Board will periodically have projections of funded status performed to assess the current and expected future progress towards the overall funding goals of the System.

SCHEDULE H

PROJECTION OF TRANSITIONAL UAAL
AND AMORTIZATION OF BASES

PROJECTION OF THE OPEN TRANSITIONAL UAAL

Valuation Date	Transitional UAAL Beginning of Year (1)	Transitional Closed (2)	Transitional Remaining Open (3)=(1)-(2)	8% Interest (4)=(3)*.08	Amortization Payment (5)	Transitional Open UAAL End of Year (6)=(3)+(4)-(5)
9/30/2012	$9,465,359,317	$631,023,954	$8,834,335,363	$706,746,829	$566,618,173	$8,974,464,019
9/30/2013	8,974,464,019	641,033,144	8,333,430,875	666,674,470	534,491,072	8,465,614,273
9/30/2014	8,465,614,273	651,201,098	7,814,413,175	625,153,054	501,202,222	7,938,364,007
9/30/2015	7,938,364,007	661,530,334	7,276,833,673	582,146,694	466,722,853	7,392,257,515
9/30/2016	7,392,257,515	672,023,410	6,720,234,104	537,618,728	431,023,570	6,826,829,262
9/30/2017	6,826,829,262	682,682,926	6,144,146,336	491,531,707	394,074,351	6,241,603,692
9/30/2018	6,241,603,692	693,511,521	5,548,092,171	443,847,374	355,844,523	5,636,095,022
9/30/2019	5,636,095,022	704,511,878	4,931,583,144	394,526,652	316,302,757	5,009,807,039
9/30/2020	5,009,807,039	715,686,720	4,294,120,319	343,529,626	275,417,053	4,362,232,892
9/30/2021	4,362,232,892	727,038,815	3,635,194,077	290,815,526	233,154,724	3,692,854,879
9/30/2022	3,692,854,879	738,570,976	2,954,283,903	236,342,712	189,482,386	3,001,144,229
9/30/2023	3,001,144,229	750,286,057	2,250,858,172	180,068,654	144,365,942	2,286,560,884
9/30/2024	2,286,560,884	762,186,961	1,524,373,923	121,949,914	97,770,566	1,548,553,271
9/30/2025	1,548,553,271	774,276,635	774,276,636	61,942,131	49,660,693	786,558,074
9/30/2026	786,558,074	786,558,074	0	0	0	0

SCHEDULE H
(continued)

AMORTIZATION SCHEDULE FOR BASE CLOSED ON SEPTEMBER 30, 2012

Valuation Date	Balance of Transitional Closed 9/30/2012	Annual Amortization Payment
9/30/2012	$631,023,954	$40,472,727
9/30/2013	641,033,144	41,788,090
9/30/2014	650,527,705	43,146,203
9/30/2015	659,423,718	44,548,455
9/30/2016	667,629,161	45,996,280
9/30/2017	675,043,214	47,491,159
9/30/2018	681,555,513	49,034,621
9/30/2019	687,045,333	50,628,246
9/30/2020	691,380,713	52,273,664
9/30/2021	694,417,505	53,972,559
9/30/2022	695,998,347	55,726,667
9/30/2023	695,951,548	57,537,783
9/30/2024	694,089,889	59,407,761
9/30/2025	690,209,318	61,338,514
9/30/2026	684,087,550	63,332,015
9/30/2027	675,482,539	65,390,306
9/30/2028	664,130,836	67,515,491
9/30/2029	649,745,812	69,709,744
9/30/2030	632,015,733	71,975,311
9/30/2031	610,601,681	74,314,508
9/30/2032	585,135,307	76,729,730
9/30/2033	555,216,402	79,223,446
9/30/2034	520,410,267	81,798,208
9/30/2035	480,244,881	84,456,650
9/30/2036	434,207,821	87,201,491
9/30/2037	381,742,956	90,035,540
9/30/2038	322,246,853	92,961,695
9/30/2039	255,064,906	95,982,950
9/30/2040	179,487,149	99,102,396
9/30/2041	94,743,725	102,323,223
9/30/2042	0	0

SCHEDULE H
(continued)

AMORTIZATION SCHEDULE FOR BASES CLOSED ON SEPTEMBER 30, 2013

Valuation Date	Balance of Transitional Closed 9/30/2013	Annual Amortization Payment	Balance of New Incremental UAAL 9/30/2013	Annual Amortization Payment
9/30/2013	$641,033,144	$41,114,698	$420,529,361	$26,971,987
9/30/2014	651,201,098	42,450,925	427,199,723	27,848,577
9/30/2015	660,846,260	43,830,581	433,527,124	28,753,655
9/30/2016	669,883,380	45,255,074	439,455,639	29,688,149
9/30/2017	678,218,976	46,725,864	444,923,941	30,653,014
9/30/2018	685,750,630	48,244,455	449,864,842	31,649,237
9/30/2019	692,366,225	49,812,400	454,204,793	32,677,837
9/30/2020	697,943,124	51,431,303	457,863,339	33,739,867
9/30/2021	702,347,271	53,102,820	460,752,540	34,836,412
9/30/2022	705,432,232	54,828,662	462,776,330	35,968,596
9/30/2023	707,038,149	56,610,593	463,829,841	37,137,575
9/30/2024	706,990,608	58,450,438	463,798,653	38,344,546
9/30/2025	705,099,419	60,350,077	462,557,999	39,590,744
9/30/2026	701,157,296	62,311,454	459,971,894	40,877,443
9/30/2027	694,938,425	64,336,576	455,892,203	42,205,960
9/30/2028	686,196,923	66,427,515	450,157,619	43,577,654
9/30/2029	674,665,162	68,586,409	442,592,574	44,993,928
9/30/2030	660,051,965	70,815,468	433,006,052	46,456,230
9/30/2031	642,040,655	73,116,970	421,190,306	47,966,058
9/30/2032	620,286,936	75,493,272	406,919,473	49,524,955
9/30/2033	594,416,619	77,946,803	389,948,076	51,134,516
9/30/2034	564,023,146	80,480,074	370,009,406	52,796,388
9/30/2035	528,664,923	83,095,677	346,813,771	54,512,270
9/30/2036	487,862,440	85,796,286	320,046,603	56,283,919
9/30/2037	441,095,149	88,584,666	289,366,412	58,113,146
9/30/2038	387,798,095	91,463,667	254,402,579	60,001,824
9/30/2039	327,358,275	94,436,237	214,752,962	61,951,883
9/30/2040	259,110,700	97,505,414	169,981,316	63,965,319
9/30/2041	182,334,142	100,674,340	119,614,502	66,044,192
9/30/2042	96,246,534	103,946,256	63,139,470	68,190,628
9/30/2043	0	0	0	0

SCHEDULE H
(continued)

AMORTIZATION SCHEDULE FOR BASES CLOSED ON SEPTEMBER 30, 2014

Valuation Date	Balance of Transitional Closed 9/30/2014	Annual Amortization Payment	Balance of New Incremental UAAL 9/30/2014	Annual Amortization Payment
9/30/2014	$651,201,098	$41,766,852	$(166,584,327)	$(10,684,415)
9/30/2015	661,530,334	43,124,275	(169,226,658)	(11,031,659)
9/30/2016	671,328,486	44,525,813	(171,733,132)	(11,390,188)
9/30/2017	680,508,952	45,972,902	(174,081,595)	(11,760,369)
9/30/2018	688,976,765	47,467,022	(176,247,754)	(12,142,581)
9/30/2019	696,627,885	49,009,700	(178,204,993)	(12,537,215)
9/30/2020	703,348,416	50,602,515	(179,924,178)	(12,944,674)
9/30/2021	709,013,774	52,247,097	(181,373,439)	(13,365,376)
9/30/2022	713,487,779	53,945,128	(182,517,938)	(13,799,751)
9/30/2023	716,621,673	55,698,344	(183,319,622)	(14,248,243)
9/30/2024	718,253,063	57,508,540	(183,736,949)	(14,711,310)
9/30/2025	718,204,768	59,377,568	(183,724,595)	(15,189,428)
9/30/2026	716,283,581	61,307,339	(183,233,134)	(15,683,084)
9/30/2027	712,278,929	63,299,827	(182,208,701)	(16,192,785)
9/30/2028	705,961,415	65,357,072	(180,592,612)	(16,719,050)
9/30/2029	697,081,257	67,481,177	(178,320,971)	(17,262,419)
9/30/2030	685,366,581	69,674,315	(175,324,229)	(17,823,448)
9/30/2031	670,521,592	71,938,730	(171,526,720)	(18,402,710)
9/30/2032	652,224,589	74,276,739	(166,846,147)	(19,000,798)
9/30/2033	630,125,818	76,690,733	(161,193,041)	(19,618,324)
9/30/2034	603,845,150	79,183,182	(154,470,160)	(20,255,920)
9/30/2035	572,969,581	81,756,635	(146,571,854)	(20,914,237)
9/30/2036	537,050,512	84,413,726	(137,383,365)	(21,593,950)
9/30/2037	495,600,827	87,157,172	(126,780,085)	(22,295,753)
9/30/2038	448,091,721	89,989,780	(114,626,738)	(23,020,365)
9/30/2039	393,949,279	92,914,448	(100,776,512)	(23,768,527)
9/30/2040	332,550,774	95,934,167	(85,070,107)	(24,541,004)
9/30/2041	263,220,668	99,052,028	(67,334,711)	(25,338,587)
9/30/2042	185,226,294	102,271,219	(47,382,902)	(26,162,091)
9/30/2043	97,773,179	105,595,033	(25,011,443)	(27,012,359)
9/30/2044	0	0	0	0

SCHEDULE H
(continued)

AMORTIZATION SCHEDULE FOR BASES CLOSED ON SEPTEMBER 30, 2015

Valuation Date	Balance of Transitional Closed 9/30/2015	Annual Amortization Payment	Balance of New Incremental UAAL 9/30/2015	Annual Amortization Payment
9/30/2015	$661,530,334	$42,429,350	$(79,902,094)	$(5,124,775)
9/30/2016	672,023,410	43,808,304	(81,169,487)	(5,291,330)
9/30/2017	681,976,979	45,232,074	(82,371,716)	(5,463,298)
9/30/2018	691,303,064	46,702,116	(83,498,155)	(5,640,855)
9/30/2019	699,905,192	48,219,935	(84,537,152)	(5,824,183)
9/30/2020	707,677,672	49,787,083	(85,475,941)	(6,013,469)
9/30/2021	714,504,803	51,405,163	(86,300,547)	(6,208,907)
9/30/2022	720,260,024	53,075,831	(86,995,684)	(6,410,696)
9/30/2023	724,804,995	54,800,796	(87,544,643)	(6,619,044)
9/30/2024	727,988,599	56,581,821	(87,929,170)	(6,834,163)
9/30/2025	729,645,865	58,420,731	(88,129,341)	(7,056,273)
9/30/2026	729,596,804	60,319,404	(88,123,415)	(7,285,602)
9/30/2027	727,645,144	62,279,785	(87,887,687)	(7,522,384)
9/30/2028	723,576,970	64,303,878	(87,396,317)	(7,766,862)
9/30/2029	717,159,250	66,393,754	(86,621,161)	(8,019,285)
9/30/2030	708,138,236	68,551,551	(85,531,570)	(8,279,911)
9/30/2031	696,237,744	70,779,477	(84,094,184)	(8,549,008)
9/30/2032	681,157,287	73,079,809	(82,272,710)	(8,826,851)
9/30/2033	662,570,060	75,454,903	(80,027,676)	(9,113,724)
9/30/2034	640,120,761	77,907,188	(77,316,166)	(9,409,920)
9/30/2035	613,423,235	80,439,171	(74,091,540)	(9,715,742)
9/30/2036	582,057,922	83,053,444	(70,303,121)	(10,031,504)
9/30/2037	545,569,112	85,752,681	(65,895,866)	(10,357,528)
9/30/2038	503,461,959	88,539,643	(60,810,008)	(10,694,147)
9/30/2039	455,199,273	91,417,182	(54,980,661)	(11,041,707)
9/30/2040	400,198,033	94,388,240	(48,337,407)	(11,400,563)
9/30/2041	337,825,635	97,455,858	(40,803,837)	(11,771,081)
9/30/2042	267,395,828	100,623,173	(32,297,063)	(12,153,641)
9/30/2043	188,164,321	103,893,427	(22,727,186)	(12,548,634)
9/30/2044	99,324,040	107,269,963	(11,996,727)	(12,956,465)
9/30/2045	0	0	0	0

SCHEDULE I

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. There is a new tier (Tier II) of benefits for all members initially joining the System on and after January 1, 2013. 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:

Tier I – the 3 highest years in the last 10 years of Creditable Service
Tier II – the 5 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

Tier I	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.
Tier II	A retirement allowance is payable upon the request of any member who has attained age 62 and completed at least 10 years of creditable service (age 56 with 10 years of creditable service for a full-time certified firefighter, police officer or correctional officer).

Amount of Allowance

Tier I	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.
Tier II	Upon service retirement a member receives a retirement allowance equal to 1.65% of the member's average final compensation multiplied by the number of years of creditable service. The benefit is capped at 80% of the member's average final compensation.
Both	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	
Tier I	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.
Tier II	Upon disability retirement a member receives a retirement allowance equal to 1.65% of the member's average final compensation multiplied by the number of years of creditable service. The benefit is capped at 80% of the member's average final compensation.
Both	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 (age 62 for Tier II members).

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.

Term Life Insurance

Upon the death of a contributing member there is paid a term life insurance benefit of $15,000 (pro-rated for part-time members)

Member Contributions

Tier I	Prior to October 1, 2011, regular members contributed 5.0% of salary and certified police officers, firefighters and correctional officers contributed 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. Beginning October 1, 2011, the contribution rates were increased to 7.25% for regular members and 8.25% for police officers, firefighters and correctional officers. Beginning October 1, 2012, the contribution rates were increased to 7.50% for regular members and 8.50% for police officers, firefighters and correctional officers.
Tier II	Regular members contribute 6% of salary and full-time certified firefighters, police officers and correctional officers contribute 7% of salary
Both	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. “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 16-25-14-(g)(1)).

SCHEDULE J

SCHEDULE OF MEMBERSHIP DATA
AS OF SEPTEMBER 30, 2015
NUMBER OF ACTIVE MEMBERS AND THEIR AVERAGE COMPENSATION
BY AGE AND YEARS OF SERVICE

Attained 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	Total
Under 25	1,097	1,326	6								2,429
Avg. Pay	30,855	29,678	23,093								30,194
25 to 29	1,540	7,820	1,578	16							10,954
Avg. Pay	32,423	35,071	42,339	27,315							35,735
30 to 34	1,027	5,041	5,945	1,982	13						14,008
Avg. Pay	37,540	38,469	45,983	49,025	47,602						43,092
35 to 39	910	4,319	4,061	6,058	1,495	15					16,858
Avg. Pay	36,028	39,762	47,290	51,277	54,681	44,252					46,839
40 to 44	769	3,771	3,652	4,094	5,390	1,137	11				18,824
Avg. Pay	36,271	37,961	46,733	50,174	56,201	58,625	41,505				48,723
45 to 49	608	3,240	3,463	3,836	4,035	4,325	934	15			20,456
Avg. Pay	33,540	36,120	44,516	46,457	53,788	59,751	59,732	58,729			48,979
50 to 54	430	2,550	2,896	3,640	3,709	2,874	2,308	484	12		18,903
Avg. Pay	34,834	35,912	41,682	43,832	48,344	55,386	59,769	57,511	51,295		47,172
55 to 59	350	1,885	2,311	3,008	3,338	3,024	1,959	1,122	442	5	17,444
Avg. Pay	37,966	36,511	43,687	42,339	46,298	53,136	59,085	62,894	62,665	42,808	48,147
60 to 64	275	1,537	1,569	1,824	1,967	1,887	1,332	165	68	13	10,637
Avg. Pay	50,626	48,432	42,508	42,516	46,341	49,865	59,194	71,179	65,532	56,348	48,287
65 to 69	97	664	857	737	555	460	385	55	25	10	3,845
Avg. Pay	38,387	48,388	51,569	43,309	48,306	52,435	66,292	74,957	65,629	72,531	50,691
70 & up	32	238	425	349	242	152	121	33	18	18	1,628
Avg. Pay	43,310	47,352	52,728	35,699	41,948	58,428	70,389	67,137	79,144	112,150	49,590
Total	7,135	32,391	26,763	25,544	20,744	13,874	7,050	1,874	565	46	135,986
Avg. Pay	35,137	37,593	45,292	47,005	51,306	55,694	59,975	62,629	63,425	80,230	46,313

Average Age: 45.50 Average Service: 10.95

SCHEDULE J
(continued)

NUMBER OF SERVICE RETIREMENTS AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	301	$ 8,830,932	$ 29,339
50 – 54	1,843	54,431,488	29,534
55 – 59	5,209	156,446,991	30,034
60 – 64	14,797	378,144,273	25,555
65 – 69	20,212	473,120,093	23,408
70 – 74	14,143	318,599,065	22,527
75 – 79	9,823	210,463,251	21,426
80 – 84	6,459	130,409,672	20,190
85 – 89	3,786	70,377,925	18,589
90 – 94	1,477	25,489,510	17,258
95 & Over	497	7,515,564	15,122
Total	78,547	$ 1,833,828,764	$ 23,347

Average Age: 70.0

NUMBER OF DROP PARTICIPANTS AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
55 – 59	2	$ 64,100	$ 32,050
60 – 64	571	21,619,562	37,863
65 – 69	107	4,384,051	40,972
70 – 74	16	725,834	45,365
75 – 79	3	144,240	48,080
80 – 84			
85 & Over			
Total	699	$ 26,937,787	$ 38,538

Average Age: 62.0

SCHEDULE J
(continued)

NUMBER OF BENEFICIARIES AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	343	$ 3,761,277	$ 10,966
50 – 54	172	1,822,786	10,598
55 – 59	265	3,214,308	12,129
60 – 64	414	6,082,694	14,692
65 – 69	571	8,814,881	15,438
70 – 74	660	11,337,262	17,178
75 – 79	670	11,189,114	16,700
80 – 84	635	10,149,089	15,983
85 – 89	488	7,229,998	14,816
90 – 94	273	3,729,613	13,662
95 & Over	72	847,949	11,777
Total	4,563	$ 68,178,971	$ 14,942

Average Age: 71.7

NUMBER OF DISABLED RETIREES AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	368	$ 4,290,922	$ 11,660
50 – 54	546	6,289,229	11,519
55 – 59	968	11,208,720	11,579
60 – 64	1,332	15,227,346	11,432
65 – 69	1,119	12,133,454	10,843
70 – 74	661	7,199,326	10,892
75 – 79	295	3,302,745	11,196
80 – 84	156	1,690,114	10,834
85 – 89	58	628,150	10,830
90 – 94	18	215,419	11,968
95 & Over	2	18,848	9,424
Total	5,523	$ 62,204,273	$ 11,263

Average Age: 63.0