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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, 2012

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July 9, 2013

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, 2012 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, 2012, 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 System was amended to provide a new benefit structure for members initially joining the System on and after January 1, 2013 (Tier II). There are no Tier II members included in the valuation as of September 30, 2012. However, we have received data from the Retirement System for Tier II members who joined during the first four months of 2013 and have used this data to determine the Tier II employer contribution rates for the fiscal year ending September 30, 2015.

On the basis of the valuation, we have determined employer contribution rates of 11.71% of payroll for Tier I members and 11.05% of payroll for Tier II members for the fiscal year ending September 30, 2015.

The promised benefits of the System are included in the actuarially calculated contribution rates which are developed using the Entry Age Normal cost method. Since the previous valuation, the Board has adopted a valuation interest rate smoothing methodology. Five-year smoothed market value of assets is used for actuarial valuation purposes. However, the actuarial value of assets was set equal to the market value of assets on September 30, 2012; five-year smoothing will commence again in future years. 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 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 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.

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,

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, 2012

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, 2012**	**September 30, 2011**
Active members		
Number	133,791	135,768
Annual compensation	$ 5,936,831,043	$ 5,807,655,862
Retired members and beneficiaries		
Number	78,370	74,623
Annual allowances	$ 1,670,391,576	$ 1,576,005,069
DROP participants		
Number	4,436	5,625
Annual compensation	$ 285,484,977	$ 351,906,404
Annual allowances	148,607,322	184,242,213
Assets		
Actuarial value	$ 18,786,007,955	$ 19,430,134,593
Market value	18,786,007,955	16,597,081,029
Unfunded accrued liability	$ 9,465,359,317	$ 9,346,181,466
Funded Ratio	66.5%	67.5%
CONTRIBUTIONS FOR FISCAL YEAR ENDING	**September 30, 2015**	**September 30, 2014**
Tier I		
Employer contribution rate		
Normal	1.53%	2.13%
Accrued liability	9.82	9.22
Death benefit	0.10	0.10
Term life	0.05	0.05
Administration	0.21	0.21
Total	11.71%	11.71%
Tier II		
Employer contribution rate		
Normal	0.87%	1.50%
Accrued liability	9.82	9.22
Death benefit	0.10	0.10
Term life	0.05	0.05
Administration	0.21	0.21
Total	11.05%	11.08%
Amortization period	30 years	30 years

2. Comments on the valuation results as of September 30, 2012 are given in Section IV and further discussion of the contribution levels is set out in Section V.

3. Since the previous valuation, the Board has adopted a valuation interest rate smoothing methodology. Schedule D of this report shows the development of the smoothed interest rate. In addition, the actuarial value of assets was set equal to the market value of assets on September 30, 2012. Five-year smoothing of assets will commence again in future years. 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 employed in the current valuation.

4. The System was amended to provide a new benefit structure for members initially joining the System on and after January 1, 2013 (Tier II). There are no Tier II members included in the valuation as of September 30, 2012. However, we have received data from the Retirement System for Tier II members who joined during the first four months of 2013 and have used this data to determine the Tier II employer contribution rates for the fiscal year ending September 30, 2015. Provisions of the System, as summarized in Schedule G, were taken into account in the current valuation. 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, 2012 on the basis of which the valuation was prepared.

TABLE 1

THE NUMBER AND ANNUAL COMPENSATION OF ACTIVE MEMBERS AS OF SEPTEMBER 30, 2012

GROUP	NUMBER	COMPENSATION*
Males	36,050	$ 1,939,618,116
Females	97,741	3,997,212,927
Total	133,791	$ 5,936,831,043

*In addition, there are 4,436 members with compensation of $285,484,977 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 18,568 inactive members.

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
9/30/2012[1]	133,791	$ 5,936,831,043	$ 44,374	3.74%
9/30/2011[2]	135,768	5,807,655,862	42,776	(0.12)
9/30/2010[3]	136,290	5,836,902,762	42,827	(0.01)
9/30/2009[4]	137,935	5,908,098,156	42,832	1.55
9/30/2008[5]	141,528	5,969,302,850	42,178	6.55
9/30/2007[6]	141,217	5,589,726,297	39,583	7.41

[1] 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.
[2] 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.
[3] 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.
[4] 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.
[5] 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.
[6] 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.

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, 2012

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES
Service Retirements	69,401	$ 1,559,204,771
Disability Retirements	4,949	54,884,736
Beneficiaries of Deceased Members	4,020	56,302,069
DROP Participants	4,436	148,607,322
Total	82,806	$ 1,818,998,898

4. Schedule H 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, 2012, which represent the accumulated contributions of active members to that date, including interest, amounted to $3,921,178,676.

   (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, 2012 the market value of assets credited to this fund amounted to $14,084,664,550.

   (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, 2012, the market value of assets credited to this Fund amounted to $780,164,729.

   (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, 2012, the market value of assets credited to this fund amounted to $31,588,381. These assets are not included in the valuation and the liabilities associated with these death benefits are not included in the valuation.

2. As of September 30, 2012 the total market value of assets reported exclusive of the Pre-Retirement Death Benefit Fund amounted to $18,786,007,955 as shown in the following table.

TABLE 4

MARKET VALUE OF ASSETS BY FUND
AS OF SEPTEMBER 30, 2012

FUND	MARKET VALUE OF ASSETS
Annuity Savings Fund	$ 3,921,178,676
Pension Accumulation Fund	14,084,664,550
DROP Fund	780,164,729
Total Market Value of Assets	$ 18,786,007,955

3. The five-year market related actuarial value of assets as of September 30, 2012 was $18,522,304,015. However, the final actuarial value of the assets was set equal to the market value of assets as of September 30, 2012 with smoothing to commence in future years. Schedule B shows the development of the actuarial value of assets as of September 30, 2012.

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, 2012.

2. The valuation balance sheet shows that the System has total prospective liabilities of $32,370,319,333. Of this amount, $17,085,972,066 is for the prospective benefits payable on account of present retired members, beneficiaries of deceased members, and DROP participants, $512,008,774 is for the prospective benefits payable on account of present inactive members and $14,772,338,493 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 $18,786,007,955 as of September 30, 2012. The difference of $13,584,311,378 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, $3,409,956,441 is the present value of future contributions expected to be made by members to the Annuity Savings

Fund, and the balance of $10,174,354,937 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 accrued liability contributions. The valuation indicates that employer normal contributions at the rate of 1.53% of payroll are required to provide the benefits of the System.

4. Prospective normal contributions at the rate of 1.53% have a present value of $708,995,620. When this amount is subtracted from $10,174,354,937 which is the present value of the total future contributions to be made by the employer, there remains $9,465,359,317 as the amount of future accrued liability contributions. Accrued liability contributions of 9.82% of payroll are to be made toward amortizing the unfunded accrued liability. Annual accrued liability contributions at the rate of 9.82% 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 3.25% each year. However, if the amortization period continues to be set at 30 years each year, the unfunded accrued liability will never be fully amortized.

5. A contribution of 0.10% 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 0.05% is required to meet the cost of group term-life insurance premiums. The assets and liabilities of this program are not included in the valuation.

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, 2012 it is recommended that the employer make contributions at the following rates beginning October 1, 2014:

TABLE 5

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

EMPLOYER CONTRIBUTION	FISCAL YEAR ENDING SEPTEMBER 30, 2015	
	Tier I	Tier II
Normal	1.53%	0.87%
Accrued Liability	9.82	9.82
Death Benefit	0.10	0.10
Term-Life	0.05	0.05
Administration	0.21	0.21
Total	11.71%	11.05%

* All members initially joining the System on and after January 1, 2013 will be Tier II members. There is no data available as of September 30, 2012 for these Tier II members. The Tier II contribution rates shown above were determined based on Tier II hires during the first 4 months of 2013.

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 6

ADDITIONAL RATES REQUIRED FOR SPECIAL UNITS OF THE SYSTEM

UNIT	ADDITIONAL EMPLOYER RATE	THROUGH FISCAL YEAR ENDING SEPTEMBER 30
Alabama State Employees Association	2.66%	2015
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 no change since the previous valuation in the liquidation period of 30 years used to determine the accrued liability contribution rate of 9.82% as part of the total rate of 11.71% 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 $119,177,851 in the unfunded accrued liability from $9,346,181,466 to $9,465,359,317 during the year ending September 30, 2012. The most significant item contributing to the increase of $0.1 billion in the unfunded accrued liability was a $1.6 billion loss due to a less than expected investment return on the actuarial value of assets. This was offset by a gain of $1.4 billion due to the adoption of a valuation interest rate smoothing methodology and a gain of $0.3 billion due to resetting the assets to market value.

ANALYSIS OF FINANCIAL EXPERIENCE
(in millions of dollars)

ITEM	AMOUNT OF INCREASE/ (DECREASE)
Interest (8.00%) added to previous unfunded accrued liability	$ 747.7
Accrued liability contribution*	(517.1)
Experience:	
Valuation asset growth	1,635.6
Pensioners' mortality	(18.5)
Turnover and retirements	31.8
New entrants	38.7
Salary increases	(174.5)
Method changes	(263.7)
Amendments	0.0
Interest Smoothing	(1,374.2)
Data changes	(4.0)
Miscellaneous changes	17.4
Total	$ 119.2

*Equal to the total contributions made to the System less the normal cost for the year adjusted for interest to September 30, 2012 (($1,053,305,036 x 1.04) – ($535,455,433 x 1.08)).

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, 2012

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits	78,370
DROP participants	4,436
Terminated employees entitled to benefits but not yet receiving benefits	18,568
Active members	133,791
Total	235,165

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

SCHEDULE OF FUNDING PROGRESS
(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
9/30/2007	$20,650,916	$25,971,534	$5,320,618	79.5%	$6,310,616[1]	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
9/30/2011[2]	19,430,135	28,776,316	9,346,181	67.5	6,159,562	151.7
9/30/2012[3]	18,786,008	28,251,367	9,465,359	66.5	6,222,316	152.1

[1]Includes pay increase granted under Act 2007-296.
[2]Reflects changes in assumptions.
[3]Reflects changes in methods.

3. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at September 30, 2012. Additional information as of the latest actuarial valuation follows.

Valuation date	09/30/2012
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:	
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%

*Actuarial value of assets was set equal to the market value of assets on September 30, 2012. Smoothing will commence again in future years.

TREND INFORMATION
($ in 1,000's)

Period Ending	Annual Pension Cost (APC)	Percentage Of APC Contributed	Net Pension Obligation (NPO)
September 30, 2010	$753,213	100%	$0
September 30, 2011	755,944	100	0
September 30, 2012	594,771	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, 2012

	September 30, 2012
ASSETS	
Actuarial Value of Assets	$ 18,786,007,955
Present value of future members' contributions to the Annuity Savings Fund	$ 3,409,956,441
Present value of future employer contributions to the Pension Accumulation Fund	
Normal contributions	$ 708,995,620
Unfunded accrued liability contributions	9,465,359,317
Total prospective employer contributions	$ 10,174,354,937
Total Assets	$ 32,370,319,333
LIABILITIES	
Present value of benefits payable on account of retired members, beneficiaries of deceased members now drawing retirement allowances, and DROP participants	
Service Retirements	$ 15,417,915,060
Disability Retirements	451,961,456
Beneficiaries of Deceased Members	435,930,821
DROP Participant Accounts	780,164,729
Total	$ 17,085,972,066
Inactive Members	$ 512,008,774
Present value of prospective benefits payable on account of present active members:	
Service retirement allowances	$ 13,241,643,302
Disability retirement allowances	540,944,010
Death Benefits	91,519,391
Termination Benefits	898,231,790
Total	$ 14,772,338,493
Total Liabilities	$ 32,370,319,333

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)
9/30/2012[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
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[3]	3,038,296	14,048,525	8,884,713	20,650,916	100	100	40.1

[1] Reflects changes in methods.
[2] Reflects changes in actuarial assumptions
[3] Reflects pay increase payable under Act 2007-296.

SCHEDULE B

DEVELOPMENT OF SEPTEMBER 30, 2012 ACTUARIAL VALUE OF ASSETS

(1)	Actuarial Value of Assets on September 30, 2011	$ 19,430,134,593
(2)	Market Value of Assets on September 30, 2012	18,786,007,955
(3)	Market Value of Assets on September 30, 2011	16,597,081,029
(4)	Net Cash Flow During the Fiscal Year	
	a. Contributions	1,053,305,036
	b. Benefit Payments	1,845,421,409
	c. Administrative Expenses	2,703,050
	d. Investment Expenses	14,572,983
	e. Net Cash Flow: (a. - b. - c. - d.)	(809,392,406)
(5)	Actual Investment Return ((2) - (3) - (4)e.)	2,998,319,332
(6)	Assumed Rate of Return on Assets	8.00%
(7)	Amount for Immediate Recognition ((3) * (6)) + (((4)a. - (4)b. -(4)c.) * .5 * (6)) + (4)d.	1,310,546,688
(8)	Investment Gain/(Loss) for the Fiscal Year ((5) - (7))	1,687,772,644
(9)	Phased-In Recognition of Investment Gain/(Loss)	
	a. Current Fiscal Year: (.2 * (8))	337,554,529
	b. Prior Fiscal Year	(194,678,909)
	c. Second Prior Fiscal Year	38,368,608
	d. Third Prior Fiscal Year	(579,214,666)
	e. Fourth Prior Fiscal Year	(1,011,014,422)
	f. Total Recognized Investment Gain/(Loss) for Fiscal Year	(1,408,984,860)
(10)	Actuarial Value of Assets on September 30, 2012 ((1) + (4)e. + (7) + (9)f.)	$ 18,522,304,015
(11)	Final Actuarial Value of Assets on September 30, 2012*	$ 18,786,007,955

Date	Investment Gain/(Loss)	Amount Recognized	Remaining Balance as of September 30, 2012*
9/30/2012	$ 1,687,772,644	$ 337,554,529	$ 0
9/30/2011	(973,394,546)	(194,678,909)	0
9/30/2010	191,843,041	38,368,608	0
9/30/2009	(2,896,073,330)	(579,214,666)	0
9/30/2008	(5,055,072,108)	(1,011,014,422)	0

*Actuarial value of assets was set equal to market value on September 30, 2012. Smoothing will commence again in future years.

SCHEDULE C

SUMMARY OF RECEIPTS AND DISBURSEMENTS
FOR THE PERIOD ENDING SEPTEMBER 30, 2012

Receipts for the Period		
Contributions:		
Members	$ 458,534,360	
Employer	594,770,676	
Total		$ 1,053,305,036
Investment Income		2,994,421,332*
TOTAL		$ 4,047,726,368
Disbursements for the Period		
Benefit Payments		$ 1,594,063,855
Refunds to Members		44,015,186
DROP Distributions		206,999,919
Miscellaneous:		
Transfers to Plant Fund	$ (128,972)	
Transfers to Expense Fund	13,378,033	
Transfers to Pre-retirement Death Benefit Fund	471,421	
Total		13,720,482
TOTAL		$ 1,858,799,442
Excess of Receipts over Disbursements		$ 2,188,926,926
Reconciliation of Asset Balances		
Market Value of Assets as of September 30, 2011		$ 16,597,081,029
Excess of Receipts over Disbursements		2,188,926,926
Market Value of Assets as of September 30, 2012		$ 18,786,007,955

*Net of $3,898,000 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
2008	-15.36 %
2009	-7.94
2010	8.42
2011	2.00
2012	18.00

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, 2012 valuation, the smoothed interest rate during the 25 year look forward period has been determined to be 9.60%.

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.

LIMITED SMOOTHED INTEREST RATE: The assumed rate of return during the 25 year look forward period as limited based on the application of the corridor above and used for valuation purposes. Since the smoothed interest rate above is 9.60%, the assumed rate for the first 25 years after the valuation date is limited to 8.50% by the corridor.

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 unreduced 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 unreduced 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 unreduced retirement from age 50 through age 54 and by 20% from age 55 through age 60.

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:

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

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

	Annual Rate					Annual Rate	
Age Group	Male		Female		Age Group	Male	Female
	< 25 yrs svc	>= 25 yrs svc	< 25 yrs svc	>= 25 yrs svc			
62	50.0%	60.0%	50.0%	65.0%	68	20.0%	28.0%
63	20.0	30.0	20.0	25.0	69	20.0	20.0
64	15.0	25.0	18.0	30.0	70	20.0	20.0
65	30.0		30.0		71 to 74	20.0	22.0
66	28.0		30.0		75 & Above	100.0	100.0
67	20.0		25.0				

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:

	Annual Rate			
	After Service Retirement		After Disability Retirement	
Age	Male	Female	Male	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

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. 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 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. The actuarial value of assets was set equal to the market value on September 30, 2012. Smoothing will commence again in future years.

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: The smoothed interest rate used during the 25 year look forward period is limited to a corridor of 0.50% around the ultimate investment rate of return.

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 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

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 the 3 highest years in the last 10 years of Creditable Service (5 highest years in the last 10 years of Creditable Service for Tier II members).

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 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).

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 will increase to 7.50% for regular members and 8.50% for police officers, firefighters and correctional officers.
Tier II	Regular members will contribute 6% of salary and full-time certified firefighters, police officers and correctional officers will 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 H

SCHEDULE OF MEMBERSHIP DATA
AS OF SEPTEMBER 30, 2012
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	1,082	1,377	18	1							2,478
Avg. Pay	30,637	29,226	27,974	31,086							29,834
25 to 29	1,274	6,669	2,403	16							10,362
Avg. Pay	32,234	34,546	40,483	30,727							35,633
30 to 34	956	4,166	7,453	1,607	10						14,192
Avg. Pay	35,149	37,267	44,011	47,685	36,668						41,845
35 to 39	853	4,033	5,046	5,683	1,312	9					16,936
Avg. Pay	35,845	38,382	44,077	50,283	52,659	50,455					45,057
40 to 44	637	3,424	4,993	4,535	5,111	1,271	18				19,989
Avg. Pay	33,717	36,893	41,452	47,978	54,754	55,087	39,657				46,172
45 to 49	469	2,699	4,224	3,932	3,420	3,712	832	14		1	19,303
Avg. Pay	32,520	36,639	38,881	43,853	50,757	56,411	56,126	52,502		96,564	45,657
50 to 54	411	2,207	3,642	3,809	3,527	3,232	2,087	637	13		19,565
Avg. Pay	32,028	38,887	37,730	41,454	46,959	53,494	58,255	57,712	48,938		45,581
55 to 59	267	1,710	2,822	3,048	3,247	3,475	1,380	740	105	1	16,795
Avg. Pay	31,274	38,385	38,735	42,200	45,691	50,951	56,400	61,271	54,209	36,496	45,623
60 to 64	242	1,402	1,835	1,633	1,710	1,825	621	101	43	6	9,418
Avg. Pay	45,721	55,113	38,886	43,432	43,873	51,701	56,421	67,732	60,347	64,256	47,234
65 to 69	75	564	879	606	468	507	188	33	21	11	3,352
Avg. Pay	57,900	55,634	41,660	43,836	46,412	57,398	56,925	80,985	71,804	114,278	49,482
70 & up	17	194	434	282	188	159	72	20	18	17	1,401
Avg. Pay	34,621	55,604	44,572	32,559	42,203	55,317	54,295	54,364	45,164	76,505	45,497
Total	6,283	28,445	33,749	25,152	18,993	14,190	5,198	1,545	200	36	133,791
Avg. Pay	33,843	37,855	41,289	45,568	49,574	53,704	57,035	60,478	56,219	85,451	44,374

Average Age: 45.19 Average Service: 10.65

NUMBER OF RETIRED MEMBERS
AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	356	$ 9,742,407	$ 27,366
50 – 54	1,978	55,658,357	28,139
55 – 59	5,398	149,448,571	27,686
60 – 64	14,378	352,577,841	24,522
65 – 69	16,233	364,219,490	22,437
70 – 74	11,871	261,787,441	22,053
75 – 79	8,314	169,554,620	20,394
80 – 84	5,945	112,932,616	18,996
85 – 89	3,141	55,838,738	17,777
90 – 94	1,377	21,549,491	15,650
95 & Over	410	5,895,199	14,379
Total	69,401	$ 1,559,204,771	$ 22,467

Average Age: 69.5

NUMBER OF DROP PARTICIPANTS
AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
55 – 59	2,275	$ 77,267,978	$ 33,964
60 – 64	1,655	53,319,468	32,217
65 – 69	410	14,647,246	35,725
70 – 74	76	2,735,269	35,990
75 – 79	18	621,823	34,546
80 – 84	2	15,538	7,769
85 & Over			
Total	4,436	$ 148,607,322	$ 33,500

Average Age: 60.4

NUMBER OF BENEFICIARIES
AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	287	$ 2,846,498	$ 9,918
50 – 54	179	1,830,887	10,228
55 – 59	254	3,094,254	12,182
60 – 64	388	5,829,279	15,024
65 – 69	520	8,388,085	16,131
70 – 74	531	8,163,263	15,373
75 – 79	576	8,986,635	15,602
80 – 84	556	8,041,535	14,463
85 – 89	448	6,144,975	13,716
90 – 94	224	2,492,936	11,129
95 & Over	57	483,722	8,486
Total	4,020	$ 56,302,069	$ 14,005

Average Age: 71.5

NUMBER OF DISABLED RETIREES
AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	350	$ 3,702,089	$ 10,577
50 – 54	522	5,710,226	10,939
55 – 59	990	11,617,479	11,735
60 – 64	1,175	12,960,977	11,031
65 – 69	958	10,373,097	10,828
70 – 74	520	5,688,579	10,940
75 – 79	232	2,520,322	10,863
80 – 84	120	1,392,957	11,608
85 – 89	56	587,648	10,494
90 – 94	25	323,228	12,929
95 & Over	1	8,134	8,134
Total	4,949	$ 54,884,736	$ 11,090

Average Age: 62.3