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Retirement Systems
of Alabama

GASB STATEMENT NO. 68 REPORT

FOR THE

TEACHERS' RETIREMENT SYSTEM OF ALABAMA

PREPARED AS OF SEPTEMBER 30, 2018





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

March 8, 2019

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

Ladies and Gentlemen:

Presented in this report is information to assist the Teachers' Retirement System of Alabama (TRS) in meeting the requirements of the Governmental Accounting Standards Board (GASB) Statement No. 68 and to identify the information to be provided by the actuary, Cavanaugh Macdonald Consulting (CMC). The information presented is for the period ending September 30, 2018 (the Measurement Date).

GASB Statement Number 68 established accounting and financial reporting requirements for governmental employers that provide pension benefits to their employees through a trust.

The annual actuarial valuation used as a basis for much of the information presented in this report was performed as of September 30, 2017. The valuation was based upon data provided by the Retirement System staff, for active, inactive and retired members along with pertinent financial information.

The actuarial calculations were performed by qualified actuaries according to generally accepted actuarial procedures and methods. The calculations are based on the current provisions of the System, and on actuarial assumptions that are, individually and in the aggregate, internally consistent and reasonably based on the actual experience of the System. In addition, the calculations were completed in compliance with the laws governing the System and, in our opinion, meet the requirements of GASB 68. Larry Langer is a member of the American Academy of Actuaries and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



Board of Control
March 8, 2019
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These results are only for financial reporting and may not be appropriate for funding purposes or other types of analysis. Calculations for purposes other than satisfying the requirements of GASB 67 and GASB 68 may produce significantly different results. Future actuarial results may differ significantly from the current results presented in this report due to such factors as changes in plan experience or changes in economic or demographic assumptions.

Sincerely yours,

A handwritten signature in blue ink, appearing to be 'LL' with a stylized flourish.

Larry Langer, ASA, EA, FCA, MAAA
Principal and Consulting Actuary

A handwritten signature in blue ink that reads 'Cathy Turcot'.

Cathy Turcot
Principal and Managing Director

CT/mjn



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**REPORT OF THE ANNUAL GASB STATEMENT NO. 68
REQUIRED INFORMATION FOR THE
EMPLOYERS PARTICIPATING IN THE TEACHERS' RETIREMENT SYSTEM OF ALABAMA**

PREPARED AS OF SEPTEMBER 30, 2018

SECTION I – INTRODUCTION

The Governmental Accounting Standards Board issued Statement No. 68 (GASB 68), *“Accounting and Financial Reporting For Pensions”* in June 2012. GASB 68’s effective date is for an employer’s fiscal year beginning after June 15, 2014. The Teachers' Retirement System of Alabama (TRS) is a cost-sharing multiple employer defined benefit pension plan.

This report, prepared as of September 30, 2018 (the Measurement Date), presents information to assist the employers participating in TRS in meeting the requirements of GASB 68 for the fiscal year ending in 2019 (Reporting Date). Much of the material provided in this report is based on the data, assumptions and results of the annual actuarial valuation of TRS as of September 30, 2017. The results of the valuation were detailed in a report dated May 8, 2018.

The NPL shown in the GASB Statement No. 67 Report for the Teachers' Retirement System of Alabama Prepared as of September 30, 2018, and submitted January 4, 2019, is the collective NPL used for purposes of GASB 68. Please refer to that report for the derivation of the collective NPL.

Pension Expense (PE) includes amounts for service cost (the normal cost under the Entry Age Normal actuarial cost method for the year), interest on the Total Pension Liability (TPL), changes in benefit structure, amortization of increases/decreases in liability due to actuarial experience and actuarial assumption changes, and amortization of investment gains/losses. The actuarial experience and assumption change impacts are amortized over the average expected remaining service life of the Plan membership as of the beginning of the measurement period, and investment gains/losses are amortized over five years. The development of the collective PE is shown in Section IV.

The unamortized portions of each year’s experience, assumption changes and investment gains/losses are used to develop deferred inflows and outflows, which also must be included in the employer’s financial statements. The development of the collective deferred inflows and outflows is shown in Section IV.

These collective amounts have been allocated based on actual contributions made to TRS during the measurement period to determine the proportionate share associated with each participating employer.

Schedule A of this report shows the total amount of employer contributions for the years ending September 30, 2017, and September 30, 2018, from each participating employer. Schedule A also shows the proportionate share percentages that have been determined based on these contributions.

Based on these percentages we have determined the proportionate share amounts of the NPL, PE and Deferred Inflows and Outflows for each participating employer. These amounts are shown in Schedule B.

Section II of this report is a summary of the principal results of the collective amounts under GASB 68. Section III provides the results of all the necessary calculations, presented in the order laid out in GASB 68 for note disclosure and Section V shows the Required Supplementary Information (RSI).



SECTION II - SUMMARY OF COLLECTIVE AMOUNTS
(\$ IN THOUSANDS)

	2018	2017
Valuation Date:	September 30, 2017	September 30, 2016
Measurement Date:	September 30, 2018	September 30, 2017
Reporting Date:	September 30, 2019	September 30, 2018
Single Equivalent Interest Rate (SEIR):		
Long-Term Expected Rate of Return	7.70%	7.75%
Municipal Bond Index Rate	4.09%	3.57%
Fiscal Year in which Plan's Fiduciary Net Position is projected to be depleted from future benefit payments for current members	N/A	N/A
Single Equivalent Interest Rate	7.70%	7.75%
Net Pension Liability:		
Total Pension Liability (TPL)	\$ 35,878,014	\$ 34,479,936
Plan Fiduciary Net Position (FNP)	<u>25,935,433</u>	<u>24,651,457</u>
Net Pension Liability (NPL = TPL – FNP)	\$ 9,942,581	\$ 9,828,479
FNP as a percentage of TPL	72.29%	71.50%
Collective Pension Expense (PE):	\$ 780,447	\$ 849,606
Deferred Outflows of Resources:	\$ 767,218	\$ 586,611
Deferred Inflows of Resources:	\$ 1,053,367	\$ 1,009,013



SECTION III – NOTES TO FINANCIAL STATEMENTS

The material presented herein will follow the order presented in GASB 68. Paragraph numbers are provided for ease of reference. Amounts are shown in aggregate. Please refer to Schedule B of this report for the proportionate share of certain pension amounts as required by GASB 68.

Paragraphs 77 and 78(a)-(e): These paragraphs require information to be disclosed regarding the actuarial assumptions used to measure the TPL. The complete set of actuarial assumptions utilized in developing the TPL are outlined in Schedule E.

The actuarial valuation as of September 30, 2017 was prepared based on an assumed investment rate of return of 7.75%. Subsequent to the valuation, the Board of Trustees adopted an investment rate of return assumption of 7.70% effective as of the Measurement Date. The TPL was determined by an actuarial valuation as of September 30, 2017, using the following key assumptions:

Inflation	2.75 percent
Salary increases, including inflation	3.25 – 5.00 percent
Investment Rate of Return, net of pension plan investment expense, including inflation	7.70 percent

Post-Retirement mortality rates for service retirements and dependent beneficiaries were based on the RP-2000 White Collar Mortality Table projected to 2020 using scale BB and adjusted 115% for all ages for males and 112% for ages 78 and over for females. The rates of disabled mortality were based on the RP-2000 Disabled Mortality Table projected to 2020 using scale BB and adjusted 105% for males and 120% for females.

The actuarial assumptions used for the purposes of determining the TPL were based on the results of an actuarial experience study for the period October 1, 2010 – September 30, 2015 and a discount rate of 7.70%, as adopted by the Board of Trustees on December 4, 2018.

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimates of geometric real rates of return for each major asset class are summarized in the following table:



Asset Class	Target Allocation	Long-Term Expected Rate of Return*
Fixed Income	17.0%	4.4%
US Large Stocks	32.0%	8.0%
US Mid Stocks	9.0%	10.0%
US Small Stocks	4.0%	11.0%
Int'l Developed Mkt Stocks	12.0%	9.5%
Int'l Emerging Mkt Stocks	3.0%	11.0%
Alternatives	10.0%	10.1%
Real Estate	10.0%	7.5%
Cash Equivalents	<u>3.0%</u>	1.5%
Total	<u>100.0%</u>	

*Includes assumed rate of inflation of 2.50%.

Discount rate. The discount rate used to measure the total pension liability was 7.70 percent. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between actuarially determined contribution rates and the member rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Paragraph 78 (g): This paragraph requires disclosure of the sensitivity of the NPL to changes in the discount rate. The following presents the NPL of the System, calculated using the discount rate of 7.70 percent, as well as what the System's NPL would be if it were calculated using a discount rate that is 1-percentage-point lower (6.70 percent) or 1-percentage-point higher (8.70 percent) than the current rate (\$ thousands):

	1% Decrease (6.70%)	Current Discount Rate (7.70%)	1% Increase (8.70%)
System's Net Pension Liability	\$13,840,181	\$9,942,581	\$6,645,815

Paragraph 80(a): This paragraph requires disclosure of the employer's proportionate share of the collective NPL and if an employer has a special funding situation the portion of the non-employer contributing entities' proportional share of the collective NPL that is associated with the employer. These amounts are shown in Schedule B.

Paragraph 80(b): This paragraph requires disclosure of the employer's proportion (percentage) of the collective NPL and the changes in proportion since the prior measurement date. These amounts are shown for all entities in Schedule A.



Paragraph 80(c): September 30, 2017, is the actuarial valuation date upon which the TPL is based. An expected TPL is determined as of September 30, 2018, using standard roll forward techniques. The procedure used to determine the TPL as of September 30, 2018, is shown on page 7 of the GASB 67 report for TRS submitted on January 4, 2019.

Paragraph 80(g): Please see Section IV of this report for the development of the collective pension expense. The PE for each employer is shown in Schedule B.

Paragraph 80(h): Since certain expense items are amortized over closed periods each year, the deferred portions of these items must be tracked annually. If the amounts serve to reduce pension expense they are labeled deferred inflows. If they will increase pension expense they are labeled deferred outflows. The amortization of these amounts is accomplished on a level dollar basis, with no interest included in the deferred amounts. Experience gains/losses and the impact of changes in actuarial assumptions, if any, are amortized over the average expected remaining service life of the active and inactive Plan members at the beginning of the fiscal year. Investment gains and losses are amortized over a fixed five year period.

The table below provides a summary of the collective deferred inflows and outflows as of the Measurement Date. The allocation of the collective deferred inflows and outflows is provided in Schedule B.

	Collective Deferred Outflows of Resources (\$ thousands)	Collective Deferred Inflows of Resources (\$ thousands)
Differences between expected and actual experience	\$214,559	\$302,875
Changes of actuarial assumptions	552,659	0
Net difference between projected and actual earnings on plan investments	<u>0</u>	<u>750,492</u>
Total	<u>\$ 767,218</u>	<u>\$ 1,053,367</u>

The following tables show the components of the collective deferred outflows of resources and the collective deferred inflows of resources by year.



Collective Deferred Outflows and Inflows for Differences between Expected and Actual Experience (\$ thousands)												
Beginning Balance											Ending Balance	
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Deferred Outflows (a)	Deferred Inflows (b)	Losses / Deferred Outflows (c)	Gains / Deferred Inflows (d)	Amounts Recognized in Pension Expense / Deferred Outflow (e)	Amounts Recognized in Pension Expense / Deferred Inflow (f)	Deferred Outflows (a) + (c) - (e)	Deferred Inflows (b) + (d) - (f)	
2018	\$265,644	\$0	5.2	\$0	\$0	\$265,644	\$0	\$51,085	\$0	\$214,559	\$0	
2017	0	261,067	5.2	0	210,862	0	0	0	50,205	0	160,657	
2016	0	290,388	5.3	0	180,808	0	0	0	54,790	0	126,018	
2015	0	70,200	5.2	0	29,700	0	0	0	13,500	0	16,200	
2014	0	0	5.3	0	0	0	0	0	0	0	0	
Total				\$0	\$421,370	\$265,644	\$0			\$214,559	\$302,875	

Collective Deferred Outflows and Inflows for Differences from Assumption Changes (\$ thousands)												
Beginning Balance											Ending Balance	
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Deferred Outflows (a)	Deferred Inflows (b)	Losses / Deferred Outflows (c)	Gains / Deferred Inflows (d)	Amounts Recognized in Pension Expense / Deferred Outflow (e)	Amounts Recognized in Pension Expense / Deferred Inflow (f)	Deferred Outflows (a) + (c) - (e)	Deferred Inflows (b) + (d) - (f)	
2018	\$178,049	\$0	5.2	\$0	\$0	\$178,049	\$0	\$34,240	\$0	\$143,809	\$0	
2017	0	0	5.2	0	0	0	0	0	0	0	0	
2016	942,133	0	5.3	586,611	0	0	0	177,761	0	408,850	0	
2015	0	0	5.2	0	0	0	0	0	0	0	0	
2014	0	0	5.3	0	0	0	0	0	0	0	0	
Total				\$586,611	\$0	\$178,049	\$0			\$552,659	\$0	

Collective Deferred Outflows and Inflows for Differences in Investment Experience (\$ thousands)												
Beginning Balance											Ending Balance	
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Deferred Outflows (a)	Deferred Inflows (b)	Losses / Deferred Outflows (c)	Gains / Deferred Inflows (d)	Amounts Recognized in Pension Expense / Deferred Outflow (e)	Amounts Recognized in Pension Expense / Deferred Inflow (f)	Deferred Outflows (a) + (c) - (e)	Deferred Inflows (b) + (d) - (f)	
2018	\$0	\$391,210	5.0	\$0	\$0	\$0	\$391,210	\$0	\$78,242	\$0	\$312,968	
2017	0	894,221	5.0	0	715,377	0	0	0	178,844	0	536,533	
2016	0	500,011	5.0	0	300,007	0	0	0	100,002	0	200,005	
2015	1,495,062	0	5.0	598,026	0	0	0	299,012	0	299,014	0	
2014	0	851,417	5.0	0	170,285	0	0	0	170,285	0	0	
Total				\$598,026	\$1,185,669	\$0	\$391,210			\$299,014	\$1,049,506	
Net difference between projected and actual earnings on investments												\$750,492



Summary of Amortization of Deferred Outflows and Inflows of Resources (\$ thousands)										
Amortization Year	Actual and Expected Experience					Assumption Changes				
	2014	2015	2016	2017	2018	2014	2015	2016	2017	2018
2020	\$0	(\$13,500)	(\$54,790)	(\$50,205)	\$51,085	\$0	\$0	\$177,761	\$0	\$34,240
2021	0	(2,700)	(54,790)	(50,205)	51,085	0	0	177,761	0	34,240
2022	0	0	(16,438)	(50,205)	51,085	0	0	53,328	0	34,240
2023	0	0	0	(10,042)	51,085	0	0	0	0	34,240
2024	0	0	0	0	10,219	0	0	0	0	6,849
Thereafter	0	0	0	0	0	0	0	0	0	0
TOTAL	\$0	(\$16,200)	(\$126,018)	(\$160,657)	\$214,559	\$0	\$0	\$408,850	\$0	\$143,809

Summary of Amortization of Deferred Outflows and Inflows of Resources (\$ thousands)						
Amortization Year	Investment Gains/Losses					Total
	2014	2015	2016	2017	2018	
2020	\$0	\$299,014	(\$100,002)	(\$178,844)	(\$78,242)	\$86,517
2021	0	0	(100,003)	(178,844)	(78,242)	(\$201,698)
2022	0	0	0	(178,845)	(78,242)	(\$185,077)
2023	0	0	0	0	(78,242)	(\$2,959)
2024	0	0	0	0	0	\$17,068
Thereafter	0	0	0	0	0	\$0
TOTAL	\$0	\$299,014	(\$200,005)	(\$536,533)	(\$312,968)	(\$286,149)



Paragraph 80(i): Collective amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows (\$ thousands):

Deferred Amounts to be Recognized in Fiscal Years Following the Reporting Date:	
Year 1	\$ 86,517
Year 2	(201,698)
Year 3	(185,077)
Year 4	(2,959)
Year 5	17,068
Thereafter	0

Paragraph 80(j): There are no non-employer contributions recognized for the support provided by non-employer contributing entities in TRS.



SECTION IV – PENSION EXPENSE

As noted earlier, the collective Pension Expense (PE) consists of a number of different items. GASB 68 refers to the first as Service Cost which is the Normal Cost using the Entry Age Normal actuarial funding method. The second item is interest on the beginning Total Pension Liability (TPL) and the cash flow during the year at the 7.75% rate of return in effect as of the previous measurement date.

The next three items refer to any changes that occurred in the TPL due to:

- benefit changes, or
- actual versus expected experience, or
- changes in actuarial assumptions.

Benefit changes, which are reflected immediately in PE, can be positive, if there is a benefit improvement for existing Plan members, or negative if there is a benefit reduction. For the year ended September 30, 2018, there were no benefit changes to be recognized.

The next item to be recognized is the portion of current year changes in TPL due to actual versus expected Plan experience for the year. The portion to recognize in the current year is determined by spreading the total change over the average expected remaining service life of the entire Plan membership determined at the beginning of the year. The average expected remaining service life of active members is the average number of years the active members are expected to remain active. For the year ended September 30, 2018, this number of years for the active members is 10.5. The average expected remaining service life of the inactive members is zero. Therefore, the number of years to use for the amortization is the weighted average for all active and inactive members, or 5.2 years. The amount to be recognized due to actual versus expected experience for the year is \$51,085,000.

The last item under changes in TPL are changes in actuarial assumptions since the last measurement date. Recognition of the change in TPL due to changes in actuarial assumptions, is also spread over the average expected remaining service life of the plan membership. The amount to be recognized due to changes in assumptions for the year is \$34,240,000.

Member contributions for the year and projected earnings on the Fiduciary Net Position (FNP), determined at the discount rate used to calculate the liabilities, are subtracted from the amount determined thus far. One-fifth of current period differences between projected and actual investment earnings on the FNP are recognized in the pension expense. The projected earnings on the FNP, the current difference between projected and actual investment earnings on the FNP, and the amount recognized due to this difference are calculated as shown in the following table.



Investment Earnings (Gain)/Loss Determined as of the Measurement Date (\$ thousands)	
a. Expected asset return rate	7.75%
b. Beginning of year FNP (BOY)	\$ 24,651,457
c. End of year FNP	25,935,433
d. Expected return on BOY for the plan year (a x b)	1,910,488
e. External Cash Flow	
(i) Employer contributions	802,598
(ii) Member contributions	493,466
(iii) Refunds of contributions	(58,552)
(iv) Benefit Payments	(2,208,925)
(v) Administrative expenses	(22,290)
(vi) Other	<u>13,445</u>
(vii) Total net external cash flow	(980,258)
f. Expected return on net cash flow (a x 0.5 x (e(vii) – e(vi))) + (a x e(vi))	(37,464)
g. Projected earnings for plan year (d + f)	1,873,024
h. Net investment income (c – b – e(vii))	2,264,234
i. Investment earnings (gain)/loss (g – h)	<u>\$ (391,210)</u>
j. Amount recognized in Pension Expense (i / 5)	<u>\$ (78,242)</u>

The current year portions of previously determined experience, assumption and earnings amounts, recognized as deferred outflows and inflows (see Section V) are included also. Deferred outflows are added to the PE while deferred inflows are subtracted from the PE. Finally, administrative expenses and other miscellaneous items are included.



The calculation of the Collective Pension Expense determined as of the measurement date is shown in the following table:

Collective Pension Expense Determined as of the Measurement Date (\$ thousands)	
Service Cost at end of year	\$ 637,532
Interest on the TPL and net cash flow	2,584,330
Current-period benefit changes	0
Expensed portion of current-period difference between expected and actual experience in the total pension liability	51,085
Expensed portion of current-period changes of assumptions	34,240
Member contributions	(493,466)
Projected earnings on plan investments	(1,873,024)
Expensed portion of current-period differences between projected and actual earnings on plan investments	(78,242)
Administrative expense	22,290
Other	(13,445)
Recognition of beginning deferred outflows of resources as pension expense	177,761
Recognition of beginning deferred inflows of resources as pension expense	<u>(268,614)</u>
Collective Pension Expense	<u>\$ 780,447</u>



SECTION V – REQUIRED SUPPLEMENTARY INFORMATION

Paragraphs 81(a)-(b): CMC was not required to supply this information.

Paragraph 82:

Changes of benefit terms. The member contribution rates were increased from 5.00% (6.00% for certified law enforcement, correctional officers, and firefighters) of earnable compensation to 7.25% (8.25%) of earnable compensation effective October 1, 2011, and to 7.50% (8.50%) of earnable compensation effective October 1, 2012. Members hired on or after January 1, 2013 (Tier II), are covered under a new benefit structure, as follows:

- (i) A service 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).
- (ii) Upon service or 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 (the 5 highest years in the last 10 years of Creditable Service).
- (iii) Regular members contribute 6% of salary and full-time certified firefighters, police officers and correctional officers contribute 7% of salary.

Changes of assumptions.

In 2018, the discount rate was changed from 7.75% to 7.70%.

In 2016, rates of retirement, disability, withdrawal and mortality were adjusted to more closely reflect actual experience. In 2016, economic assumptions and the assumed rates of salary increase were adjusted to more closely reflect actual and anticipated experience. In 2016 the expectation of retired life mortality as changed to the RP-2000 White Collar Mortality Table projected to 2020 using scale BB and adjusted 115% for all ages for males and 112% for ages 78 and over for females. The rates of disabled mortality were based on the RP-2000 Disabled Mortality Table projected to 2020 using scale BB and adjusted 105% for males and 120% for females.

In 2010 and later, the expectation of retired life mortality was changed to the RP-2000 Mortality Tables rather than the 1994 Group Annuity Mortality Table, which was used prior to 2010. In 2010, rates of withdrawal, retirement, disability and mortality were adjusted to more closely reflect actual experience. In 2010, assumed rates of salary increase were adjusted to more closely reflect actual and anticipated experience.



SCHEDULE A
Teachers' Retirement System of Alabama
Schedule of Employer Allocations
For the Fiscal Year Ended September 30, 2018
(Dollar Amounts Not in Thousands)

Employer	Employer Code	2018 Annualized Employer Contributions	2018 Employer Allocation Percentage
Accel Academy Charter School	TACL	\$ 101,716	0.012671%
Alabama A&M University	TAMI	5,808,836	0.723622%
Alabama Association of School Boards	TAAB	137,777	0.017163%
Alabama Education Association	TAEA	696,330	0.086744%
Alabama Fire College	TAFC	306,251	0.038151%
Alabama High School Athletic Association	TAAA	147,210	0.018338%
Alabama Higher Education Partnership	TAHP	25,496	0.003176%
Alabama Industrial Development Training	TIDT	1,181,834	0.147224%
Alabama Institute for Deaf and Blind	TAID	4,506,046	0.561330%
Alabama Retired State Employees Association	TREA	55,405	0.006902%
Alabama School of Fine Arts	THFA	543,401	0.067693%
Alabama State Employees Association	TASE	89,643	0.011167%
Alabama State University	TMST	5,390,861	0.671554%
Alabama Technology Network	TATN	556,432	0.069316%
Alabama Vocational Association	TAVA	5,866	0.000731%
Alabaster City School System	TALR	4,016,550	0.500352%
Albertville City Board of Education	TALB	3,014,330	0.375503%
Alexander City Board of Education	TALX	1,916,698	0.238768%
Andalusia City Board of Education	TADL	969,685	0.120796%
Anniston Board of Education	TANN	1,153,348	0.143676%
Arab City Board of Education	TARB	1,601,474	0.199500%
Athens City Board of Education	TATH	2,680,039	0.333860%
Athens State University	TATC	2,070,740	0.257958%
Attalla City Schools	TATT	1,015,636	0.126520%
Auburn City Board of Education	TAUB	5,428,325	0.676221%
Auburn University	TAPI	51,979,801	6.475262%
Autauga County Board of Education	TATG	5,141,313	0.640467%



SCHEDULE A (continued)

Employer	Employer Code	2018 Annualized Employer Contributions	2018 Employer Allocation Percentage
Baldwin County Board of Education	TBLD	19,492,297	2.428207%
Barbour County Schools	TBAR	591,403	0.073673%
Bessemer Board of Education	TBSM	2,437,934	0.303700%
Bevill State Community College	TWCT	2,097,226	0.261257%
Bibb County Board of Education	TBIB	2,031,834	0.253111%
Birmingham City Schools	TBMH	16,077,156	2.002774%
Bishop State Community College	TBJC	1,523,583	0.189797%
Blount County Board of Education	TBLT	4,582,339	0.570834%
Boaz City Board of Education	TBOZ	1,448,122	0.180396%
Brewton City Board of Education	TBWT	737,619	0.091887%
Bullock County Board of Education	TBLK	938,823	0.116952%
Butler County Board of Education	TBLR	1,869,036	0.232831%
Calhoun Community College	TDEC	2,787,219	0.347211%
Calhoun County Board of Education	TCAL	5,534,046	0.689391%
CAPNA, Inc.	TNCA	1,452,881	0.180989%
Central Alabama Community College	TACC	911,668	0.113569%
Chambers County Board of Education	TCHB	2,295,225	0.285922%
Chattahoochee Valley Community College	TCVS	706,244	0.087979%
Cherokee County Board of Education	TCHK	2,617,008	0.326008%
Chickasaw City School System	TCKW	641,932	0.079967%
Chilton County Board of Education	TCHT	4,316,696	0.537742%
Choctaw County Board of Education	TCHW	917,587	0.114306%
Clarke County Board of Education	TCLK	1,712,521	0.213333%
Clay County Board of Education	TCLY	1,157,290	0.144167%
Cleburne County Board of Education	TCLB	1,574,592	0.196151%
Coastal Alabama Community College	TBMC	2,921,439	0.363931%
Coffee County Board of Education	TCOF	1,245,410	0.155144%
Colbert County Board of Education	TCOL	2,040,137	0.254145%
Community Svc Programs of West Alabama	TCSP	571,727	0.071222%
Conecuh County Board of Education	TCON	1,194,009	0.148741%
Coosa County Board of Education	TCSA	627,253	0.078139%
Council for Leaders in Alabama Schools	TACA	63,158	0.007868%
Covington County Board of Education	TCOV	1,939,284	0.241582%
Crenshaw County Board of Education	TCRW	1,393,910	0.173643%
Cullman City Board of Education	TCMN	1,954,399	0.243465%



SCHEDULE A (continued)

Employer	Employer Code	2018 Annualized Employer Contributions	2018 Employer Allocation Percentage
Cullman County Commission on Education	TCUL	5,928,570	0.738538%
Dale County Board of Education	TDAL	1,828,193	0.227743%
Daleville City Board of Education	TDLV	646,693	0.080560%
Dallas County Board of Education	TDLS	2,208,715	0.275145%
Dauphin Island Sea Lab	TMES	600,584	0.074816%
Decatur Board of Education	TDTR	6,113,534	0.761579%
Dekalb County Board of Education	TDKB	5,380,173	0.670222%
Demopolis City Schools	TDPL	1,338,492	0.166740%
Developing Alabama Youth Foundation	TDAY	62,088	0.007734%
Dothan Board of Education	TDTN	5,681,446	0.707753%
Elba City Board of Education	TELB	413,996	0.051573%
Elmore County Board of Education	TELM	6,348,710	0.790876%
Enterprise Board of Education	TENP	4,019,687	0.500743%
Enterprise Ozark Community College	TEPC	892,383	0.111167%
Escambia County Board of Education	TESC	2,879,139	0.358662%
Etowah County Board of Ed	TETH	5,167,637	0.643746%
Etowah County Community Service Program, Inc.	TECA	16,801	0.002093%
Eufaula City Board of Education	TEFL	1,741,558	0.216951%
Fairfield Board of Education	TFRF	1,076,945	0.134158%
Fayette County Board of Education	TFAY	1,421,039	0.177023%
Florence City Board of Education	TFLO	3,058,429	0.380997%
Fort Payne City Board of Education	TFTP	1,804,364	0.224774%
Franklin County Board of Education	TFRK	2,286,343	0.284816%
Gadsden City Board of Education	TGDS	3,387,737	0.422019%
Gadsden State Community College	TGDC	2,640,935	0.328988%
Gardendale Board of Education	TGBE	46,500	0.005793%
Geneva City Board of Education	TGCB	826,448	0.102953%
Geneva County Board of Education	TGEN	1,625,301	0.202468%
George Corley Wallace State Community College	TGWS	998,665	0.124406%
Greene County Board of Education	TGRN	852,755	0.106230%
Gulf Shores	TGSC	21,198	0.002641%
Guntersville City Board of Education	TGUN	1,234,368	0.153768%
H. Councill Trenholm State Technical College	TMGT	1,035,731	0.129024%
Hale County Board of Education	THAL	1,553,692	0.193548%
Haleyville City Board of Education	THAV	1,091,004	0.135909%



SCHEDULE A (continued)

Employer	Employer Code	2018 Annualized Employer Contributions	2018 Employer Allocation Percentage
Hartselle City Board of Education	THCS	2,009,934	0.250383%
Henry County Board of Education	THNY	1,483,191	0.184765%
Homewood City Board of Education	THOM	3,414,182	0.425314%
Hoover City Board of Education	THOV	10,556,807	1.315089%
Houston County Board of Education	THST	3,593,562	0.447660%
Huntsville City Schools	THTS	14,498,375	1.806101%
J. F. Drake State Technical College	THVS	503,931	0.062776%
J. F. Ingram State Technical College	TDRT	808,564	0.100725%
Jackson County Board of Education	TJKS	3,677,165	0.458074%
Jacksonville City Board of Education	TJCS	949,629	0.118298%
Jacksonville State University	TJST	6,264,127	0.780339%
Jasper City Board of Education	TJSP	1,781,877	0.221973%
Jefferson County American Federation of Teachers	TJFT	24,316	0.003029%
Jefferson County Board of Education	TJEF	23,077,175	2.874785%
Jefferson State Community College	TJJC	2,651,371	0.330288%
Lamar County Schools	TLAM	1,368,791	0.170514%
Lanett City Schools	TLNT	587,883	0.073234%
Lauderdale County Board of Ed	TLAU	5,049,258	0.628999%
Law Enforcement Academy--Baldwin County	TSWP	12,203	0.001520%
Law Enforcement Academy--Tuscaloosa	TLET	14,187	0.001767%
Lawrence County Board of Education	TLAW	2,960,829	0.368838%
Lawson State College	TLSC	1,745,730	0.217470%
Lee County Board of Education	TLEE	6,173,988	0.769110%
Leeds Board of Education, City of	TLDS	1,220,379	0.152026%
Limestone County Board of Education	TLST	5,561,639	0.692828%
Linden City Board of Education	TLND	350,585	0.043673%
Lowndes County Board of Education	TLDN	1,209,718	0.150698%
Lurleen B. Wallace Community College	TLUR	959,285	0.119501%
Macon County Board of Education	TMAC	1,437,140	0.179028%
Madison City Board of Education	TMDC	6,447,891	0.803231%
Madison County Board of Education	TMAD	11,946,730	1.488236%
Marengo County Board of Education	TMNG	719,650	0.089649%
Marion County Board of Education	TMAR	2,025,069	0.252268%
Marion Military Institute	TMMI	670,640	0.083543%
Marshall County Board of Education	TMSH	3,633,207	0.452598%



SCHEDULE A (continued)

Employer	Employer Code	2018 Annualized Employer Contributions	2018 Employer Allocation Percentage
Midfield City Board of Education	TMID	659,901	0.082206%
Mobile School Commissioners	TMOB	33,913,563	4.224703%
Monroe County Board of Education	TMON	2,152,111	0.268094%
Montgomery City and County Board of Education	TMTG	18,491,436	2.303527%
Morgan County Board of Education	TMOR	4,907,826	0.611381%
Mountain Brook City Board of Education	TMTB	3,650,991	0.454814%
Muscle Shoals City Schools	TMSC	2,008,097	0.250154%
Northeast Alabama Community College	TNEC	1,058,719	0.131887%
Northwest Shoals Community College	TNWC	1,474,920	0.183735%
Oneonta City Board of Education	TONE	827,585	0.103094%
Opelika City Board of Education	TOPK	3,076,933	0.383302%
Opp City Board of Education	TOPP	838,700	0.104479%
Organized Community Action Program Inc	TOCA	416,986	0.051945%
Oxford City Schools	TOXF	2,771,513	0.345255%
Ozark City Board of Education	TOZK	1,320,610	0.164512%
Pelham City Board of Education	TPLS	1,969,069	0.245292%
Pell City School System	TPEL	2,368,938	0.295105%
Perry County Board of Education	TPRY	948,622	0.118172%
Phenix City Board of Education	TPHC	4,040,663	0.503356%
Pickens County Board of Education	TPKS	1,674,789	0.208633%
Piedmont City Schools	TPMT	736,454	0.091742%
Pike County Board of Education	TPIK	1,460,446	0.181932%
Pike Road City Schools	TPRB	721,602	0.089892%
Randolph County Board of Education	TRAN	1,447,200	0.180282%
Reid State Technical College	TEVN	379,051	0.047219%
Roanoke City Schools	TROK	853,498	0.106323%
Russell County Board of Education	TRUS	2,146,188	0.267356%
Russellville City Board of Education	TRSV	1,673,735	0.208502%
Saraland Board of Education	TSAR	1,636,983	0.203923%
Satsuma City Schools	TSTM	759,707	0.094639%
School Superintendents of Alabama	TSAL	61,694	0.007685%
Scottsboro Board of Education	TSCO	1,677,101	0.208921%
Selma Public Schools	TSMA	2,049,456	0.255306%
Sheffield City Board of Education	TSHF	794,208	0.098937%
Shelby County Board of Education	TSBY	13,635,229	1.698577%



SCHEDULE A (continued)

Employer	Employer Code	2018 Annualized Employer Contributions	2018 Employer Allocation Percentage
Shelton State Community College	TTVS	2,108,409	0.262650%
Snead State Community College	TSJC	845,351	0.105308%
Southern Union State Community College	TSUC	1,568,665	0.195413%
Special Programming for Achievement Network	TBSC	273,002	0.034009%
St. Clair County Board of Education	TSTC	5,209,648	0.648980%
State of Alabama--Commission on Higher Education	TCHE	273,588	0.034082%
State of Alabama--Department of Rehab Services	TDRS	4,648,281	0.579049%
State of Alabama--Department of Post-Secondary Ed	TPSE	797,712	0.099373%
State of Alabama--Department of Youth Services	TDYS	2,100,676	0.261687%
State of Alabama--High School of Math & Science	THMS	332,496	0.041420%
State of Alabama--PEEHIP	TPHP	276,265	0.034408%
State of Alabama--State Board of Education	TSBE	5,406,498	0.673502%
State of Alabama--Teachers Retirement System	TTRS	1,687,216	0.210181%
Sumter County Board of Education	TSUM	1,080,301	0.134576%
Sylacauga City Board of Education	TSYL	1,449,159	0.180526%
Talladega City Board of Education	TTAL	1,311,963	0.163435%
Talladega County Board of Education	TTDG	4,640,710	0.578106%
Tallapoosa County Board of Education	TTPS	1,753,832	0.218480%
Tallassee City Board of Education	TTAS	1,088,506	0.135598%
Tarrant Board of Education	TTAR	803,271	0.100066%
Thomasville City Schools	TTOM	816,762	0.101746%
Troy City Board of Education	TTRY	1,242,864	0.154827%
Troy University	TTST	10,958,009	1.365068%
Trussville City Board of Education	TTCB	3,153,379	0.392825%
Tuscaloosa City Schools	TTUS	7,783,881	0.969659%
Tuscaloosa County Schools	TTLS	10,836,773	1.349966%
Tuscumbia City Board of Education	TTSC	960,052	0.119596%
University Chancellor's Office	TUCO	1,295,542	0.161389%
University Charter School	TUWC	163,307	0.020344%
University of Alabama	TUVA	47,991,508	5.978430%
University of Alabama--Birmingham	TUMC	94,326,627	11.750518%
University of Alabama--Huntsville	TUAH	12,187,472	1.518226%
University of Montevallo	TALC	3,338,227	0.415852%
University of North Alabama	TFST	5,304,001	0.660733%
University of South Alabama	TUSA	22,827,800	2.843720%



SCHEDULE A (continued)

Employer	Employer Code	2018 Annualized Employer Contributions	2018 Employer Allocation Percentage
University of West Alabama	TLVC	2,915,608	0.363205%
Vestavia Hills Board of Education	TVES	5,510,332	0.686437%
Walker County Board of Education	TWLK	4,960,913	0.617994%
Wallace Community College--Dothan	TGWD	2,058,205	0.256396%
Wallace State College--Hanceville	TCUT	2,075,199	0.258513%
Washington County Board of Education	TWSH	1,632,860	0.203410%
Wilcox County Board of Education	TWIL	1,160,632	0.144583%
Winfield City Board of Education	TWFD	797,692	0.099371%
Winston Education Board	TWIN	<u>1,623,762</u>	<u>0.202276%</u>
	Total	\$ <u>802,744,391</u>	<u>100.000000%</u>



SCHEDULE B

**Teachers' Retirement System of Alabama
Schedule of Pension Amounts by Employer**

**As of and for the Fiscal Year Ended September 30, 2019 with Net Pension Liability as of September 30, 2018
(Dollar Amounts in Thousands)**

Employer	Employer Code	2018 Net Pension Liability	Deferred Outflows of Resources				Deferred Inflows of Resources					Pension Expense		
			Differences Between Expected and Actual Experience	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Pension Expense	Proportionate and Proportionate Share of Contributions	Total Employer Pension Expense
Accel Academy Charter School	TACL	\$ 1,260	\$ 27	\$ 70	\$ 821	\$ 918	\$ 38	\$ 95	\$ -	\$ 115	\$ 248	\$ 99	\$ 229	\$ 328
Alabama A&M University	TAMI	71,947	1,553	3,999	495	6,047	2,192	5,431	-	204	7,827	5,649	10	5,659
Alabama Association of School Boards	TAAB	1,706	37	95	102	234	52	129	-	4	185	134	53	187
Alabama Education Association	TAEA	8,625	186	479	25	690	263	651	-	990	1,904	678	(315)	363
Alabama Fire College	TAFC	3,793	82	211	303	596	116	286	-	334	736	297	(33)	264
Alabama High School Athletic Association	TAAA	1,823	39	101	128	268	56	138	-	-	194	145	69	214
Alabama Higher Education Partnership	TAHP	316	7	18	14	39	10	24	-	39	73	25	(12)	13
Alabama Industrial Development Training	TIDT	14,638	316	814	321	1,451	446	1,105	-	297	1,848	1,149	155	1,304
Alabama Institute for Deaf and Blind	TAID	55,811	1,204	3,102	1,248	5,554	1,700	4,213	-	112	6,025	4,382	522	4,904
Alabama Retired State Employees Association	TREA	686	15	38	70	123	21	52	-	28	101	53	14	67
Alabama School of Fine Arts	THFA	6,730	145	374	357	876	205	508	-	49	762	528	127	655
Alabama State Employees Association	TASE	1,110	24	62	29	115	34	84	-	268	386	87	(61)	26
Alabama State University	TMST	66,770	1,441	3,711	158	5,310	2,034	5,040	-	5,960	13,034	5,241	(2,102)	3,139
Alabama Technology Network	TATN	6,892	149	383	127	659	210	520	-	354	1,084	541	(205)	336
Alabama Vocational Association	TAVA	73	2	4	9	15	2	5	-	5	12	5	(1)	4
Alabaster City School System	TALR	49,748	1,074	2,765	2,276	6,115	1,515	3,755	-	894	6,164	3,904	(586)	3,318
Albertville City Board of Education	TALB	37,335	806	2,075	2,419	5,300	1,137	2,818	-	-	3,955	2,931	1,206	4,137
Alexander City Board of Education	TALX	23,740	512	1,320	280	2,112	723	1,792	-	77	2,592	1,864	111	1,975
Andalusia City Board of Education	TADL	12,010	259	668	6	933	366	907	-	184	1,457	944	(58)	886
Anniston Board of Education	TANN	14,285	308	794	57	1,159	435	1,078	-	3,474	4,987	1,121	(827)	294
Arab City Board of Education	TARB	19,835	428	1,103	337	1,868	604	1,497	-	278	2,379	1,555	233	1,788
Athens City Board of Education	TATH	33,194	716	1,845	2,255	4,816	1,011	2,506	-	-	3,517	2,606	946	3,552
Athens State University	TATC	25,648	553	1,426	779	2,758	781	1,936	-	198	2,915	2,013	(13)	2,000
Attalla City Schools	TATT	12,579	271	699	90	1,060	383	950	-	553	1,886	987	(21)	966
Auburn City Board of Education	TAUB	67,234	1,451	3,737	3,354	8,542	2,048	5,075	-	-	7,123	5,278	1,691	6,969
Auburn University	TAPI	643,808	13,893	35,786	36,868	86,547	19,612	48,596	-	-	68,208	50,536	15,247	65,783
Autauga County Board of Education	TATG	63,679	1,374	3,540	394	5,308	1,940	4,807	-	1,213	7,960	4,999	(154)	4,845
Baldwin County Board of Education	TBLD	241,426	5,210	13,420	8,892	27,522	7,354	18,223	-	-	25,577	18,949	5,361	24,310
Barbour County Schools	TBAR	7,325	158	407	-	565	223	553	-	432	1,208	575	(260)	315
Bessemer Board of Education	TBSM	30,196	652	1,678	-	2,330	920	2,279	-	935	4,134	2,371	(459)	1,912
Bevill State Community College	TWCT	25,976	561	1,444	1,232	3,237	791	1,961	-	1,249	4,001	2,039	(121)	1,918
Bibb County Board of Education	TBIB	25,166	543	1,399	189	2,131	767	1,900	-	587	3,254	1,976	(106)	1,870
Birmingham City Schools	TBMH	199,127	4,297	11,069	603	15,969	6,066	15,031	-	3,944	25,041	15,630	(2,088)	13,542
Bishop State Community College	TMJC	18,871	407	1,049	698	2,154	575	1,424	-	2,661	4,660	1,481	(978)	503
Blount County Board of Education	TBLT	56,756	1,225	3,155	50	4,430	1,729	4,284	-	338	6,351	4,456	(99)	4,357
Boaz City Board of Education	TBOZ	17,936	387	997	400	1,784	546	1,354	-	-	1,900	1,408	158	1,566
Brewton City Board of Education	TBWT	9,136	197	508	90	795	278	690	-	96	1,064	717	(37)	680
Bullock County Board of Education	TBLK	11,628	251	646	-	897	354	878	-	744	1,976	913	(247)	666



SCHEDULE B (continued)

Employer	Employer Code	2018 Net Pension Liability	Deferred Outflows of Resources				Deferred Inflows of Resources					Pension Expense		
			Differences Between Expected and Actual Experience	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
Butler County Board of Education	TBLR	23,149	500	1,287	165	1,952	705	1,747	-	1,293	3,745	1,816	(411)	1,405
Calhoun Community College	TDEC	34,522	745	1,919	1,163	3,827	1,052	2,606	-	445	4,103	2,711	363	3,074
Calhoun County Board of Education	TCAL	68,543	1,479	3,810	429	5,718	2,088	5,174	-	1,680	8,942	5,380	(203)	5,177
CAPNA, Inc.	TNCA	17,995	388	1,000	989	2,377	548	1,358	-	6	1,912	1,414	1,303	2,717
Central Alabama Community College	TACC	11,292	244	628	129	1,001	344	852	-	765	1,961	886	(318)	568
Chambers County Board of Education	TCHB	28,428	613	1,580	108	2,301	866	2,146	-	602	3,614	2,232	(53)	2,179
Chattahoochee Valley Community College	TCVS	8,747	189	486	448	1,123	266	660	-	186	1,112	685	37	722
Cherokee County Board of Education	TCHK	32,414	699	1,802	538	3,039	987	2,447	-	34	3,468	2,545	149	2,694
Chickasaw City School System	TCKW	7,951	172	442	966	1,580	242	600	-	-	842	623	477	1,100
Chilton County Board of Education	TCHT	53,465	1,154	2,972	1,033	5,159	1,629	4,036	-	426	6,091	4,196	265	4,461
Choctaw County Board of Education	TCHW	11,365	245	632	-	877	346	858	-	884	2,088	892	(333)	559
Clarke County Board of Education	TCLK	21,211	458	1,179	-	1,637	646	1,601	-	1,697	3,944	1,664	(699)	965
Clay County Board of Education	TCLY	14,334	309	797	15	1,121	437	1,082	-	422	1,941	1,126	(104)	1,022
Cleburne County Board of Education	TCLB	19,502	421	1,084	91	1,596	594	1,472	-	763	2,829	1,530	(38)	1,492
Coastal Alabama Community College	TBMC	36,184	781	2,011	608	3,400	1,102	2,731	-	649	4,482	2,840	(129)	2,711
Coffee County Board of Education	TCOF	15,425	333	857	696	1,886	470	1,164	-	-	1,634	1,211	304	1,515
Colbert County Board of Education	TCOL	25,269	545	1,405	261	2,211	770	1,907	-	191	2,868	1,984	(106)	1,878
Community Svc Programs of West Alabama	TCSP	7,081	153	394	40	587	216	535	-	530	1,281	556	(273)	283
Conecuh County Board of Education	TCON	14,789	319	822	340	1,481	450	1,116	-	334	1,900	1,161	(109)	1,052
Coosa County Board of Education	TCSA	7,769	168	432	-	600	237	586	-	704	1,527	609	(374)	235
Council for Leaders in Alabama Schools	TACA	782	17	43	10	70	24	59	-	65	148	62	(10)	52
Covington County Board of Education	TCOV	24,019	518	1,335	164	2,017	732	1,813	-	114	2,659	1,885	61	1,946
Crenshaw County Board of Education	TCRW	17,265	373	960	410	1,743	526	1,303	-	235	2,064	1,356	81	1,437
Cullman City Board of Education	TCMN	24,207	522	1,346	280	2,148	737	1,827	-	63	2,627	1,899	144	2,043
Cullman County Commission on Education	TCUL	73,430	1,585	4,082	255	5,922	2,237	5,543	-	651	8,431	5,763	173	5,936
Dale County Board of Education	TDAL	22,644	489	1,259	507	2,255	690	1,709	-	-	2,399	1,777	238	2,015
Daleville City Board of Education	TDLV	8,010	173	445	81	699	244	605	-	527	1,376	630	(189)	441
Dallas County Board of Education	TDLS	27,357	590	1,521	-	2,111	833	2,065	-	1,422	4,320	2,147	(592)	1,555
Dauphin Island Sea Lab	TMES	7,439	161	413	641	1,215	227	561	-	69	857	584	176	760
Decatur Board of Education	TDTR	75,721	1,634	4,209	320	6,163	2,307	5,716	-	755	8,778	5,945	(586)	5,359
Dekalb County Board of Education	TDKB	66,637	1,438	3,704	898	6,040	2,030	5,030	-	376	7,436	5,230	446	5,676
Demopolis City Schools	TDPL	16,578	358	922	213	1,493	505	1,251	-	102	1,858	1,300	59	1,359
Developing Alabama Youth Foundation	TDAY	769	17	43	13	73	23	58	-	22	103	59	30	89
Dothan Board of Education	TDTN	70,369	1,519	3,911	430	5,860	2,144	5,312	-	1,089	8,545	5,525	193	5,718
Elba City Board of Education	TELB	5,128	111	285	-	396	156	387	-	600	1,143	403	(219)	184
Elmore County Board of Education	TELM	78,633	1,697	4,371	1,308	7,376	2,395	5,935	-	106	8,436	6,171	337	6,508
Enterprise Board of Education	TENP	49,787	1,074	2,767	1,236	5,077	1,517	3,758	-	591	5,866	3,909	476	4,385
Enterprise Ozark Community College	TEPC	11,053	239	614	395	1,248	337	834	-	1,590	2,761	867	(888)	(21)
Escambia County Board of Education	TESC	35,660	770	1,982	40	2,792	1,086	2,692	-	323	4,101	2,799	(116)	2,683
Etowah County Board of Ed	TETH	64,005	1,381	3,558	4	4,943	1,950	4,831	-	631	7,412	5,025	(256)	4,769
Etowah County Community Service Program, Inc.	TECA	208	4	12	4	20	6	16	-	31	53	16	(25)	(9)
Eufaula City Board of Education	TEFL	21,571	465	1,199	210	1,874	657	1,628	-	129	2,414	1,694	63	1,757
Fairfield Board of Education	TFRF	13,339	288	741	103	1,132	406	1,007	-	787	2,200	1,047	(145)	902
Fayette County Board of Education	TFAY	17,601	380	978	9	1,367	536	1,329	-	576	2,441	1,382	(258)	1,124
Florence City Board of Education	TFLO	37,881	817	2,106	198	3,121	1,154	2,859	-	566	4,579	2,974	(211)	2,763
Fort Payne City Board of Education	TFTP	22,348	482	1,242	298	2,022	681	1,687	-	15	2,383	1,755	204	1,959
Franklin County Board of Education	TFRK	28,318	611	1,574	986	3,171	863	2,138	-	-	3,001	2,224	459	2,683



SCHEDULE B (continued)

Employer	Employer Code	2018 Net Pension Liability	Deferred Outflows of Resources				Deferred Inflows of Resources					Pension Expense		
			Differences Between Expected and Actual Experience	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Proportionate Share of Contributions	Total Employer Pension Expense
Gadsden City Board of Education	TGDS	41,960	905	2,332	242	3,479	1,278	3,167	-	930	5,375	3,295	(9)	3,286
Gadsden State Community College	TGDC	32,710	706	1,818	-	2,524	996	2,469	-	1,915	5,380	2,566	(1,085)	1,481
Gardendale Board of Education	TGBE	576	12	32	35	79	18	43	-	64	125	46	98	144
Geneva City Board of Education	TGCB	10,236	221	569	317	1,107	312	773	-	-	1,085	803	139	942
Geneva County Board of Education	TGEN	20,131	434	1,119	533	2,086	613	1,520	-	9	2,142	1,581	318	1,899
George Corley Wallace State Community College	TGWS	12,369	267	688	94	1,049	377	934	-	586	1,897	971	(206)	765
Greene County Board of Education	TGRN	10,562	228	587	78	893	322	797	-	236	1,355	829	(134)	695
Gulf Shores	TGSC	263	6	15	208	229	8	20	-	-	28	19	50	69
Guntersville City Board of Education	TGUN	15,289	330	850	177	1,357	466	1,154	-	381	2,001	1,200	(4)	1,196
H. Councill Trenholm State Technical College	TMGT	12,828	277	713	932	1,922	391	968	-	659	2,018	1,007	(209)	798
Hale County Board of Education	THAL	19,244	415	1,070	-	1,485	586	1,453	-	1,084	3,123	1,510	(368)	1,142
Haleyville City Board of Education	THAV	13,513	292	751	271	1,314	412	1,020	-	24	1,456	1,061	50	1,111
Hartselle City Board of Education	THCS	24,895	537	1,384	570	2,491	758	1,879	-	313	2,950	1,955	159	2,114
Henry County Board of Education	THNY	18,370	396	1,021	5	1,422	560	1,387	-	202	2,149	1,443	(72)	1,371
Homewood City Board of Education	THOM	42,287	913	2,351	1,630	4,894	1,288	3,192	-	816	5,296	3,319	90	3,409
Hoover City Board of Education	THOV	130,754	2,822	7,268	1,360	11,450	3,983	9,870	-	1,880	15,733	10,264	52	10,316
Houston County Board of Education	THST	44,509	960	2,474	348	3,782	1,356	3,360	-	195	4,911	3,495	190	3,685
Huntsville City Schools	HTHS	179,573	3,875	9,982	1,038	14,895	5,470	13,555	-	4,378	23,403	14,096	(1,223)	12,873
J. F. Drake State Technical College	THVS	6,242	135	347	46	528	190	471	-	998	1,659	490	(230)	260
J. F. Ingram State Technical College	TDRT	10,015	216	557	37	810	305	756	-	1,647	2,708	786	(425)	361
Jackson County Board of Education	TJKS	45,544	983	2,532	47	3,562	1,387	3,438	-	1,112	5,937	3,573	(291)	3,282
Jacksonville City Board of Education	TJCS	11,762	254	654	259	1,167	358	888	-	74	1,320	922	59	981
Jacksonville State University	TJST	77,586	1,674	4,313	3,535	9,522	2,363	5,856	-	209	8,428	6,090	921	7,011
Jasper City Board of Education	TJSP	22,070	476	1,227	37	1,740	672	1,666	-	812	3,150	1,732	(274)	1,458
Jefferson County American Federation of Teachers	TJFT	301	6	17	31	54	9	23	-	33	65	23	6	29
Jefferson County Board of Education	TJEF	285,828	6,168	15,888	425	22,481	8,707	21,575	-	1,830	32,112	22,436	(542)	21,894
Jefferson State Community College	TJJC	32,839	709	1,825	415	2,949	1,000	2,479	-	292	3,771	2,578	(25)	2,553
Lamar County Schools	TLAM	16,953	366	942	32	1,340	516	1,280	-	110	1,906	1,330	5	1,335
Lanett City Schools	TLNT	7,281	157	405	194	756	222	550	-	92	864	572	108	680
Lauderdale County Board of Ed	TLAU	62,539	1,350	3,476	1,016	5,842	1,905	4,721	-	287	6,913	4,909	211	5,120
Law Enforcement Academy--Baldwin County	TSWP	151	3	8	25	36	5	11	-	54	70	13	14	27
Law Enforcement Academy--Tuscaloosa	TLET	176	4	10	13	27	5	13	-	19	37	12	(37)	(25)
Lawrence County Board of Education	TLAW	36,672	791	2,038	12	2,841	1,117	2,768	-	1,477	5,362	2,879	(605)	2,274
Lawson State College	TLSC	21,622	467	1,202	479	2,148	659	1,632	-	81	2,372	1,697	(92)	1,605
Lee County Board of Education	TLEE	76,469	1,650	4,251	661	6,562	2,329	5,772	-	918	9,019	6,002	542	6,544
Leeds Board of Education, City of	TLDS	15,115	326	840	923	2,089	460	1,141	-	-	1,601	1,186	456	1,642
Limestone County Board of Education	TLST	68,885	1,487	3,829	955	6,271	2,098	5,200	-	927	8,225	5,407	714	6,121
Linden City Board of Education	TLND	4,342	94	241	133	468	132	328	-	89	549	341	24	365
Lowndes County Board of Education	TLDN	14,983	323	833	-	1,156	456	1,131	-	1,743	3,330	1,175	(884)	291
Lurleen B. Wallace Community College	TLUR	11,881	256	660	230	1,146	362	897	-	249	1,508	933	(55)	878
Macon County Board of Education	TMAC	17,800	384	989	33	1,406	542	1,344	-	1,093	2,979	1,398	(512)	886
Madison City Board of Education	TMDC	79,862	1,723	4,439	3,661	9,823	2,433	6,028	-	-	8,461	6,270	1,639	7,909
Madison County Board of Education	TMAD	147,969	3,193	8,225	109	11,527	4,507	11,169	-	1,895	17,571	11,615	(387)	11,228
Marengo County Board of Education	TMNG	8,913	192	495	-	687	272	673	-	603	1,548	701	(462)	239
Marion County Board of Education	TMAR	25,082	541	1,394	191	2,126	764	1,893	-	536	3,193	1,970	(212)	1,758
Marion Military Institute	TMMI	8,306	179	462	498	1,139	253	627	-	98	978	652	254	906
Marshall County Board of Education	TMSH	45,000	971	2,501	955	4,427	1,371	3,397	-	350	5,118	3,534	(4)	3,530



SCHEDULE B (continued)

Employer	Employer Code	2018 Net Pension Liability	Deferred Outflows of Resources				Deferred Inflows of Resources					Pension Expense		
			Differences Between Expected and Actual Experience	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Investment Earnings on Pension Plan	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Proportionate Share of Contributions	Total Employer Pension Expense
Midfield City Board of Education	TMD	8,173	176	454	-	630	249	617	-	697	1,563	642	(255)	387
Mobile School Commissioners	TMOB	420,045	9,064	23,348	-	32,412	12,796	31,706	-	12,617	57,119	32,973	(4,360)	28,613
Monroe County Board of Education	TMON	26,655	575	1,482	1	2,058	812	2,012	-	525	3,349	2,092	(227)	1,865
Montgomery City and County Board of Education	TMTG	229,030	4,942	12,731	491	18,164	6,977	17,288	-	3,127	27,392	17,978	(746)	17,232
Morgan County Board of Education	TMOR	60,787	1,312	3,379	290	4,981	1,852	4,588	-	856	7,296	4,771	(31)	4,740
Mountain Brook City Board of Education	TMTB	45,220	976	2,514	241	3,731	1,378	3,413	-	4,001	8,792	3,549	(721)	2,828
Muscle Shoals City Schools	TMSC	24,872	537	1,382	1,204	3,123	758	1,877	-	-	2,635	1,953	547	2,500
Northeast Alabama Community College	TNEC	13,113	283	729	166	1,178	399	990	-	66	1,455	1,030	49	1,079
Northwest Shoals Community College	TNWC	18,268	394	1,015	3	1,412	556	1,379	-	1,000	2,935	1,435	(375)	1,060
Oneonta City Board of Education	TONE	10,250	221	570	252	1,043	312	774	-	21	1,107	804	48	852
Opelika City Board of Education	TOPK	38,110	822	2,118	630	3,570	1,161	2,877	-	5	4,043	2,991	223	3,214
Opp City Board of Education	TOPP	10,388	224	577	280	1,081	316	784	-	-	1,100	816	107	923
Organized Community Action Program Inc	TOCA	5,165	111	287	122	520	157	390	-	532	1,079	407	(11)	396
Oxford City Schools	TOXF	34,327	741	1,908	764	3,413	1,046	2,591	-	-	3,637	2,694	271	2,965
Ozark City Board of Education	TOZK	16,357	353	909	61	1,323	498	1,235	-	980	2,713	1,284	(395)	889
Pelham City Board of Education	TPLS	24,388	526	1,356	1,690	3,572	743	1,841	-	353	2,937	1,915	4,238	6,153
Pell City School System	TPEL	29,341	633	1,631	22	2,286	894	2,215	-	544	3,653	2,304	(164)	2,140
Perry County Board of Education	TPRY	11,749	254	653	-	907	358	887	-	921	2,166	921	(505)	416
Phenix City Board of Education	TPHC	50,047	1,080	2,782	714	4,576	1,525	3,778	-	890	6,193	3,930	188	4,118
Pickens County Board of Education	TPKS	20,744	448	1,153	132	1,733	632	1,566	-	253	2,451	1,629	(223)	1,406
Piedmont City Schools	TPMT	9,122	197	507	103	807	278	689	-	90	1,057	716	103	819
Pike County Board of Education	TPIK	18,089	390	1,005	122	1,517	551	1,365	-	415	2,331	1,420	(71)	1,349
Pike Road City Schools	TPRB	8,938	193	497	3,867	4,557	272	675	-	-	947	701	1,661	2,362
Randolph County Board of Education	TRAN	17,925	387	996	676	2,059	546	1,353	-	171	2,070	1,408	125	1,533
Reid State Technical College	TEVN	4,695	101	261	83	445	143	354	-	824	1,321	369	(301)	68
Roanoke City Schools	TROK	10,571	228	588	41	857	322	798	-	66	1,186	829	30	859
Russell County Board of Education	TRUS	26,582	574	1,478	406	2,458	810	2,006	-	-	2,816	2,085	313	2,398
Russellville City Board of Education	TRSV	20,730	447	1,152	545	2,144	632	1,565	-	324	2,521	1,627	232	1,859
Saraland Board of Education	TSAR	20,275	438	1,127	1,706	3,271	618	1,530	-	-	2,148	1,590	963	2,553
Satsuma City Schools	TSTM	9,410	203	523	674	1,400	287	710	-	32	1,029	739	270	1,009
School Superintendents of Alabama	TSAL	764	16	42	177	235	23	58	-	-	81	61	77	138
Scottsboro Board of Education	TSCO	20,772	448	1,155	90	1,693	633	1,568	-	615	2,816	1,631	(131)	1,500
Selma Public Schools	TSMA	25,384	548	1,411	274	2,233	773	1,916	-	2,885	5,574	1,992	(658)	1,334
Sheffield City Board of Education	TSHF	9,837	212	547	41	800	300	743	-	345	1,388	773	(89)	684
Shelby County Board of Education	TSBY	168,882	3,644	9,387	2,435	15,466	5,145	12,748	-	7,130	25,023	13,258	(9,466)	3,792
Shelton State Community College	TTVS	26,114	564	1,452	361	2,377	796	1,971	-	858	3,625	2,049	(313)	1,736
Snead State Community College	TSJC	10,470	226	582	281	1,089	319	790	-	1	1,110	821	103	924
Southern Union State Community College	TSUC	19,429	419	1,080	600	2,099	592	1,467	-	436	2,495	1,525	(102)	1,423
Special Programming for Achievement Network	TBSC	3,381	73	188	112	373	103	255	-	36	394	265	2	267
St. Clair County Board of Education	TSTC	64,525	1,392	3,587	1,070	6,049	1,966	4,871	-	-	6,837	5,066	673	5,739
State of Alabama--Commission on Higher Education	TCHE	3,389	73	188	122	383	103	256	-	2	361	267	104	371
State of Alabama--Department of Rehab Services	TDRS	57,572	1,242	3,200	910	5,352	1,754	4,346	-	1,265	7,365	4,519	174	4,693
State of Alabama--Department of Post-Secondary Ed	TPSE	9,880	213	549	1,973	2,735	301	746	-	46	1,093	776	516	1,292
State of Alabama--Department of Youth Services	TDYS	26,018	561	1,446	-	2,007	793	1,964	-	1,615	4,372	2,043	(1,117)	926
State of Alabama--High School of Math & Science	THMS	4,118	89	229	199	517	125	311	-	66	502	322	96	418
State of Alabama--PEEHIP	TPHP	3,421	74	190	357	621	104	258	-	13	375	268	150	418
State of Alabama--State Board of Education	TSBE	66,963	1,445	3,722	567	5,734	2,040	5,055	-	5,816	12,911	5,257	(505)	4,752



SCHEDULE B (continued)

Employer	Employer Code	2018 Net Pension Liability	Deferred Outflows of Resources				Deferred Inflows of Resources					Pension Expense		
			Differences Between Expected and Actual Experience	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Outflows of Resources	Differences Between Expected and Actual Experience	Net Difference Between Projected and Actual Earnings on Pension Plan Investments	Change of Assumptions	Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Deferred Inflows of Resources	Proportionate Share of Plan Pension Expense	Deferred Amounts from Changes in Proportion and Differences Between Employer Contributions and Proportionate Share of Contributions	Total Employer Pension Expense
State of Alabama--Teachers Retirement System	TTRS	20,897	451	1,162	1,916	3,529	637	1,577	-	57	2,271	1,639	919	2,558
Sumter County Board of Education	TSUM	13,380	289	744	126	1,159	408	1,010	-	1,341	2,759	1,049	(525)	524
Sylacauga City Board of Education	TSYL	17,949	387	998	122	1,507	547	1,355	-	507	2,409	1,409	(104)	1,305
Talladega City Board of Education	TTAL	16,250	351	903	797	2,051	495	1,227	-	1,525	3,247	1,277	(377)	900
Talladega County Board of Education	TTDG	57,479	1,240	3,195	85	4,520	1,751	4,339	-	600	6,690	4,513	(166)	4,347
Tallapoosa County Board of Education	TTPS	21,723	469	1,207	276	1,952	662	1,640	-	524	2,826	1,708	(138)	1,570
Tallassee City Board of Education	TTAS	13,482	291	749	70	1,110	411	1,018	-	392	1,821	1,059	(10)	1,049
Tarrant Board of Education	TTAR	9,949	215	553	173	941	303	751	-	70	1,124	780	9	789
Thomasville City Schools	TTOM	10,116	218	562	6	786	308	764	-	667	1,739	795	(144)	651
Troy City Board of Education	TTRY	15,394	332	856	-	1,188	469	1,162	-	615	2,246	1,209	(363)	846
Troy University	TTST	135,723	2,929	7,544	3,040	13,513	4,134	10,245	-	7,532	21,911	10,654	(2,053)	8,601
Trussville City Board of Education	TTCB	39,057	843	2,171	2,892	5,906	1,190	2,948	-	-	4,138	3,065	1,007	4,072
Tuscaloosa City Schools	TTUS	96,409	2,080	5,359	4,845	12,284	2,937	7,277	-	408	10,622	7,567	1,379	8,946
Tuscaloosa County Schools	TTLS	134,221	2,896	7,461	5,056	15,413	4,089	10,131	-	-	14,220	10,536	2,328	12,864
Tuscumbia City Board of Education	TTSC	11,891	257	661	270	1,188	362	898	-	51	1,311	934	83	1,017
University Chancellor's Office	TUCO	16,046	346	892	1,180	2,418	489	1,211	-	712	2,412	1,260	267	1,527
University Charter School	TUWC	2,023	44	112	1,578	1,734	62	153	-	-	215	159	376	535
University of Alabama	TUVA	594,410	12,827	33,040	38,154	84,021	18,107	44,868	-	459	63,434	46,659	17,844	64,503
University of Alabama--Birmingham	TUMC	1,168,306	25,219	64,938	-	90,157	35,587	88,176	-	18,919	142,682	91,688	(15,450)	76,238
University of Alabama--Huntsville	TUAH	150,951	3,257	8,391	1,955	13,603	4,598	11,394	-	3,634	19,626	11,848	(246)	11,602
University of Montevallo	TALC	41,346	892	2,298	1,453	4,643	1,260	3,121	-	213	4,594	3,246	878	4,124
University of North Alabama	TFST	65,694	1,418	3,652	2,656	7,726	2,001	4,959	-	327	7,287	5,156	974	6,130
University of South Alabama	TUSA	282,739	6,101	15,716	-	21,817	8,613	21,342	-	27,369	57,324	22,195	(12,293)	9,902
University of West Alabama	TLVC	36,112	779	2,007	1,075	3,861	1,100	2,726	-	-	3,826	2,835	814	3,649
Vestavia Hills Board of Education	TVES	68,250	1,473	3,794	3,069	8,336	2,079	5,152	-	-	7,231	5,358	1,274	6,632
Walker County Board of Education	TWLK	61,445	1,326	3,415	463	5,204	1,872	4,638	-	718	7,228	4,824	(286)	4,538
Wallace Community College--Dothan	TGWD	25,492	550	1,417	290	2,257	777	1,924	-	33	2,734	2,001	242	2,243
Wallace State College--Hanceville	TCUT	25,703	555	1,429	374	2,358	783	1,940	-	627	3,350	2,017	(32)	1,985
Washington County Board of Education	TWSH	20,224	436	1,124	-	1,560	616	1,527	-	1,746	3,889	1,589	(710)	879
Wilcox County Board of Education	TWIL	14,375	310	799	-	1,109	438	1,085	-	853	2,376	1,128	(312)	816
Winfield City Board of Education	TWFD	9,880	213	549	232	994	301	746	-	93	1,140	776	104	880
Winston Education Board	TWIN	20,111	434	1,118	20	1,572	613	1,518	-	933	3,064	1,578	(280)	1,298
Total for All Entities		\$ 9,942,581	\$ 214,559	\$ 552,659	\$ 202,326	\$ 969,544	\$ 302,875	\$ 750,492	\$ -	\$ 202,326	\$ 1,255,693	\$ 780,447	\$ -	\$ 780,447



SCHEDULE C

**Teachers' Retirement System of Alabama
 Schedule of Discount Rate Sensitivity, Amortization of Deferred Outflows/(Inflows) and Employer Contribution
 As of and for the Fiscal Year Ending September 30, 2019
 (Dollar Amounts in Thousands)**

Employer	Employer Code	NPL @ Minus 1% (6.70%)	NPL @ Plus 1% (8.70%)	Projected Deferred Outflows/(Inflows) To Be Recognized in Pension Expense for the Fiscal Year Ended September 30						2018 Actual Employer Contributions
				2020	2021	2022	2023	2024	Thereafter	
Accel Academy Charter School	TACL	\$ 1,754	\$ 842	\$ 240	\$ 203	\$ 206	\$ 26	\$ (5)	\$ 0	\$ 102
Alabama A&M University	TAMI	100,151	48,091	664	(1,359)	(1,275)	52	138	0	5,809
Alabama Association of School Boards	TAAB	2,375	1,141	65	(13)	(21)	11	7	0	138
Alabama Education Association	TAEA	12,006	5,765	(307)	(507)	(354)	(56)	10	0	696
Alabama Fire College	TAFC	5,280	2,535	25	(70)	(48)	(42)	(5)	0	306
Alabama High School Athletic Association	TAAA	2,538	1,219	72	(1)	(13)	12	4	0	147
Alabama Higher Education Partnership	TAHP	440	211	(3)	(13)	(18)	0	0	0	25
Alabama Industrial Development Training	TIDT	20,376	9,784	226	(250)	(310)	(75)	12	0	1,182
Alabama Institute for Deaf and Blind	TAID	77,689	37,305	889	(840)	(724)	95	109	0	4,506
Alabama Retired State Employees Association	TREA	955	459	21	(8)	(7)	13	3	0	55
Alabama School of Fine Arts	THFA	9,369	4,499	189	(50)	(81)	39	17	0	543
Alabama State Employees Association	TASE	1,546	742	(50)	(88)	(92)	(37)	(4)	0	90
Alabama State University	TMST	92,944	44,630	(1,883)	(3,392)	(2,369)	(191)	111	0	5,391
Alabama Technology Network	TATN	9,593	4,607	(90)	(215)	(159)	20	19	0	556
Alabama Vocational Association	TAVA	101	49	0	(1)	0	3	1	0	6
Alabaster City School System	TALR	69,250	33,252	943	(471)	(560)	(29)	68	0	4,017
Albertville City Board of Education	TALB	51,970	24,955	1,330	(94)	(196)	210	95	0	3,014
Alexander City Board of Education	TALX	33,046	15,868	298	(399)	(403)	(15)	39	0	1,917
Andalusia City Board of Education	TADL	16,718	8,028	30	(297)	(258)	(17)	18	0	970
Anniston Board of Education	TANN	19,885	9,548	(725)	(1,178)	(1,077)	(728)	(120)	0	1,153
Arab City Board of Education	TARB	27,611	13,258	299	(441)	(420)	9	42	0	1,601
Athens City Board of Education	TATH	46,207	22,188	1,147	59	(155)	166	82	0	2,680
Athens State University	TATC	35,702	17,143	356	(273)	(293)	13	40	0	2,071
Attalla City Schools	TATT	17,511	8,408	35	(382)	(378)	(104)	3	0	1,016
Auburn City Board of Education	TAUB	93,590	44,940	1,941	(440)	(619)	355	182	0	5,428
Auburn University	TAPI	896,188	430,334	19,782	(2,464)	(4,508)	3,760	1,769	0	51,980
Autauga County Board of Education	TATG	88,642	42,564	391	(1,429)	(1,433)	(246)	65	0	5,141
Baldwin County Board of Education	TBLD	336,068	161,374	6,214	(2,739)	(3,005)	885	590	0	19,492
Barbour County Schools	TBAR	10,196	4,896	(167)	(278)	(189)	(16)	7	0	591
Bessemer Board of Education	TBSM	42,033	20,183	(137)	(916)	(734)	(63)	46	0	2,438
Bevill State Community College	TWCT	36,158	17,363	189	(434)	(348)	(169)	(2)	0	2,097
Bibb County Board of Education	TBIB	35,031	16,821	186	(610)	(607)	(114)	22	0	2,032
Birmingham City Schools	TBMH	277,188	133,101	446	(5,052)	(4,229)	(489)	252	0	16,077
Bishop State Community College	TMJC	26,268	12,614	(740)	(1,116)	(781)	64	67	0	1,524
Blount County Board of Education	TBLT	79,004	37,937	368	(1,283)	(1,096)	(10)	100	0	4,582
Boaz City Board of Education	TBOZ	24,967	11,989	296	(238)	(251)	38	39	0	1,448
Brewton City Board of Education	TBWT	12,717	6,107	62	(173)	(156)	(13)	11	0	738
Bullock County Board of Education	TBLK	16,186	7,772	(132)	(450)	(376)	(120)	(1)	0	939
Butler County Board of Education	TBLR	32,224	15,474	(95)	(829)	(744)	(145)	20	0	1,869
Calhoun Community College	TDEC	48,055	23,075	720	(432)	(523)	(78)	37	0	2,787
Calhoun County Board of Education	TCAL	95,413	45,816	443	(1,703)	(1,681)	(341)	58	0	5,534
CAPNA, Inc.	TNCA	25,049	12,028	896	(183)	(282)	2	32	0	1,453
Central Alabama Community College	TACC	15,718	7,548	(89)	(410)	(342)	(118)	(1)	0	912
Chambers County Board of Education	TCHB	39,572	19,002	119	(689)	(650)	(120)	27	0	2,295
Chattahoochee Valley Community College	TCVS	12,176	5,847	123	(126)	(111)	90	35	0	706
Cherokee County Board of Education	TCHK	45,120	21,666	421	(494)	(485)	62	67	0	2,617
Chickasaw City School System	TCKW	11,068	5,314	438	152	52	73	23	0	642
Chilton County Board of Education	TCHT	74,424	35,737	728	(856)	(812)	(62)	70	0	4,317
Choctaw County Board of Education	TCHW	15,820	7,597	(185)	(463)	(412)	(146)	(5)	0	918
Clarke County Board of Education	TCLK	29,526	14,178	(491)	(926)	(728)	(170)	8	0	1,713



SCHEDULE C (continued)

Employer	Employer Code	NPL @ Minus 1% (6.70%)	NPL @ Plus 1% (8.70%)	Projected Deferred Outflows/(Inflows) To Be Recognized in Pension Expense for the Fiscal Year Ended September 30						2018 Actual Employer Contributions
				2020	2021	2022	2023	2024	Thereafter	
Clay County Board of Education	TCLY	19,953	9,581	(1)	(430)	(355)	(50)	16	0	1,157
Cleburne County Board of Education	TCLB	27,148	13,036	19	(626)	(570)	(81)	25	0	1,575
Coastal Alabama Community College	TBMC	50,369	24,186	291	(690)	(616)	(106)	39	0	2,921
Coffee County Board of Education	TCOF	21,472	10,311	417	(108)	(162)	67	38	0	1,245
Colbert County Board of Education	TCOL	35,174	16,890	158	(486)	(401)	25	47	0	2,040
Community Svc Programs of West Alabama	TCSP	9,857	4,733	(141)	(298)	(254)	(17)	16	0	572
Conecuh County Board of Education	TCON	20,586	9,885	43	(328)	(213)	48	31	0	1,194
Coosa County Board of Education	TCSA	10,815	5,193	(218)	(354)	(281)	(75)	1	0	627
Council for Leaders in Alabama Schools	TACA	1,089	523	(5)	(27)	(29)	(15)	(2)	0	63
Covington County Board of Education	TCOV	33,435	16,055	274	(462)	(460)	(31)	37	0	1,939
Crenshaw County Board of Education	TCRW	24,033	11,540	237	(246)	(286)	(48)	22	0	1,394
Cullman City Board of Education	TCMN	33,696	16,180	321	(456)	(409)	20	45	0	1,954
Cullman County Commission on Education	TCUL	102,215	49,082	658	(1,662)	(1,498)	(118)	111	0	5,929
Dale County Board of Education	TDAL	31,520	15,135	383	(318)	(287)	36	42	0	1,828
Daleville City Board of Education	TDLV	11,150	5,354	(128)	(325)	(241)	2	15	0	647
Dallas County Board of Education	TDLS	38,081	18,286	(291)	(968)	(779)	(185)	14	0	2,209
Dauphin Island Sea Lab	TMES	10,355	4,972	223	48	9	59	19	0	601
Decatur Board of Education	TDTR	105,404	50,613	168	(1,616)	(1,348)	41	140	0	6,114
Dekalb County Board of Education	TDKB	92,760	44,542	920	(1,173)	(1,158)	(79)	94	0	5,380
Demopolis City Schools	TDPL	23,077	11,081	171	(327)	(285)	39	37	0	1,338
Developing Alabama Youth Foundation	TDAY	1,070	514	12	(26)	(16)	0	0	0	62
Dothan Board of Education	TDTN	97,954	47,036	637	(1,715)	(1,596)	(119)	108	0	5,681
Elba City Board of Education	TELB	7,138	3,427	(138)	(253)	(223)	(118)	(15)	0	414
Elmore County Board of Education	TELM	109,459	52,560	957	(1,277)	(1,139)	219	180	0	6,349
Enterprise Board of Education	TENP	69,304	33,278	749	(815)	(715)	(68)	60	0	4,020
Enterprise Ozark Community College	TEPC	15,386	7,388	(590)	(482)	(287)	(143)	(11)	0	892
Escambia County Board of Education	TESC	49,639	23,836	199	(797)	(708)	(57)	54	0	2,879
Etowah County Board of Ed	TETH	89,096	42,782	293	(1,494)	(1,314)	(57)	103	0	5,168
Etowah County Community Service Program, Inc.	TECA	290	139	(19)	(9)	(4)	0	(1)	0	17
Eufaula City Board of Education	TEFL	30,026	14,418	215	(390)	(379)	(21)	35	0	1,742
Fairfield Board of Education	TFRF	18,568	8,916	(14)	(463)	(453)	(137)	(1)	0	1,077
Fayette County Board of Education	TFAY	24,500	11,765	(122)	(547)	(406)	(24)	25	0	1,421
Florence City Board of Education	TFLO	52,731	25,320	243	(861)	(845)	(55)	60	0	3,058
Fort Payne City Board of Education	TFTP	31,109	14,938	354	(359)	(390)	(4)	38	0	1,804
Franklin County Board of Education	TFRK	39,419	18,928	642	(269)	(290)	38	49	0	2,286
Gadsden City Board of Education	TGDS	58,408	28,047	254	(1,046)	(1,025)	(131)	52	0	3,388
Gadsden State Community College	TGDC	45,533	21,864	(594)	(1,196)	(919)	(174)	27	0	2,641
Gardendale Board of Education	TGBE	802	385	21	(27)	(28)	(11)	(1)	0	47
Geneva City Board of Education	TGCB	14,249	6,842	203	(105)	(127)	26	25	0	826
Geneva County Board of Education	TGEN	28,022	13,456	406	(290)	(270)	56	42	0	1,625
George Corley Wallace State Community College	TGWS	17,218	8,268	(140)	(389)	(280)	(52)	13	0	999
Greene County Board of Education	TGRN	14,702	7,060	(9)	(225)	(210)	(30)	12	0	853
Gulf Shores	TGSC	366	176	52	45	45	50	9	0	7
Guntersville City Board of Education	TGUN	21,282	10,219	111	(396)	(381)	(10)	32	0	1,234
H. Council Trenholm State Technical College	TMGT	17,857	8,575	(5)	(239)	(52)	153	47	0	1,036
Hale County Board of Education	THAL	26,787	12,863	(207)	(740)	(594)	(114)	17	0	1,554
Haleyville City Board of Education	THAV	18,810	9,032	176	(213)	(190)	49	36	0	1,091
Hartselle City Board of Education	THCS	34,653	16,640	283	(491)	(417)	102	64	0	2,010
Henry County Board of Education	THNY	25,572	12,279	85	(435)	(379)	(24)	26	0	1,483
Homewood City Board of Education	THOM	58,864	28,266	364	(718)	(438)	267	123	0	3,414
Hoover City Board of Education	THOV	182,011	87,398	965	(2,853)	(2,727)	63	269	0	10,557
Houston County Board of Education	THST	61,957	29,751	522	(849)	(818)	(53)	69	0	3,594
Huntsville City Schools	THTS	249,968	120,030	417	(4,459)	(3,871)	(750)	155	0	14,498
J. F. Drake State Technical College	THVS	8,688	4,172	(204)	(415)	(351)	(146)	(15)	0	504
J. F. Ingram State Technical College	TDRT	13,941	6,694	(426)	(611)	(540)	(286)	(35)	0	809
Jackson County Board of Education	TJKS	63,398	30,443	86	(1,200)	(1,072)	(226)	37	0	3,677
Jacksonville City Board of Education	TJCS	16,373	7,862	147	(210)	(171)	47	34	0	950
Jacksonville State University	TJST	108,000	51,860	1,600	(704)	(741)	667	272	0	6,264
Jasper City Board of Education	TJSP	30,721	14,752	(56)	(710)	(585)	(86)	27	0	1,782
Jefferson County American Federation of Teachers	TJFT	419	201	(2)	(15)	(2)	7	1	0	24
Jefferson County Board of Education	TJEF	397,875	191,053	1,930	(6,501)	(5,506)	(50)	496	0	23,077



SCHEDULE C (continued)

Employer	Employer Code	NPL @ Minus 1% (6.70%)	NPL @ Plus 1% (8.70%)	Projected Deferred Outflows/(Inflows) To Be Recognized in Pension Expense for the Fiscal Year Ended September 30						2018 Actual Employer Contributions
				2020	2021	2022	2023	2024	Thereafter	
Jefferson State Community College	TJJC	45,712	21,950	341	(582)	(569)	(56)	44	0	2,651
Lamar County Schools	TLAM	23,599	11,332	140	(378)	(341)	(15)	28	0	1,369
Lanett City Schools	TLNT	10,136	4,867	133	(125)	(140)	7	17	0	588
Lauderdale County Board of Ed	TLAU	87,055	41,802	718	(1,146)	(996)	202	151	0	5,049
Law Enforcement Academy--Baldwin County	TSWP	210	101	1	(10)	(14)	(9)	(2)	0	12
Law Enforcement Academy--Tuscaloosa	TLET	245	117	(12)	(2)	(1)	4	1	0	14
Lawrence County Board of Education	TLAW	51,048	24,512	(316)	(1,178)	(916)	(147)	36	0	2,961
Lawson State College	TLSC	30,098	14,453	282	(262)	(298)	16	38	0	1,746
Lee County Board of Education	TLLE	106,446	51,114	953	(1,688)	(1,605)	(209)	92	0	6,174
Leeds Board of Education, City of	TLDS	21,041	10,103	479	(54)	(56)	84	35	0	1,220
Limestone County Board of Education	TLST	95,889	46,044	1,125	(1,467)	(1,512)	(188)	88	0	5,562
Linden City Board of Education	TLND	6,044	2,902	52	(61)	(82)	3	7	0	351
Lowndes County Board of Education	TLDN	20,857	10,015	(535)	(873)	(644)	(130)	8	0	1,210
Lurleen B. Wallace Community College	TLUR	16,539	7,942	84	(277)	(196)	8	19	0	959
Macon County Board of Education	TMAC	24,778	11,898	(283)	(736)	(488)	(78)	12	0	1,437
Madison City Board of Education	TMDC	111,169	53,381	2,204	(521)	(824)	308	195	0	6,448
Madison County Board of Education	TMAD	205,975	98,905	892	(3,471)	(3,238)	(412)	185	0	11,947
Marengo County Board of Education	TMNG	12,408	5,958	(250)	(316)	(250)	(53)	8	0	720
Marion County Board of Education	TMAR	34,914	16,765	98	(592)	(515)	(84)	26	0	2,025
Marion Military Institute	TMMI	11,563	5,552	292	(51)	(83)	(6)	9	0	671
Marshall County Board of Education	TMSH	62,640	30,079	441	(797)	(630)	183	112	0	3,633
Midfield City Board of Education	TMD	11,377	5,463	(135)	(351)	(312)	(126)	(9)	0	660
Mobile School Commissioners	TMOB	584,707	280,766	(454)	(12,216)	(10,445)	(1,964)	372	0	33,914
Monroe County Board of Education	TMON	37,105	17,817	53	(703)	(602)	(73)	34	0	2,152
Montgomery City and County Board of Education	TMTG	318,812	153,088	1,421	(5,425)	(4,890)	(615)	281	0	18,491
Morgan County Board of Education	TMOR	84,616	40,631	413	(1,434)	(1,245)	(128)	79	0	4,908
Mountain Brook City Board of Education	MTB	62,947	30,226	(383)	(1,862)	(1,780)	(931)	(105)	0	3,651
Muscle Shoals City Schools	TMSC	34,622	16,625	673	(176)	(165)	101	55	0	2,008
Northeast Alabama Community College	TNEC	18,253	8,765	131	(223)	(210)	0	25	0	1,059
Northwest Shoals Community College	TNWC	25,429	12,211	(231)	(679)	(526)	(101)	14	0	1,475
Oneonta City Board of Education	TONE	14,268	6,851	151	(154)	(133)	47	25	0	828
Opelika City Board of Education	TOPK	53,050	25,474	562	(558)	(557)	16	64	0	3,077
Opp City Board of Education	TOPP	14,460	6,943	173	(139)	(123)	44	26	0	839
Organized Community Action Program Inc	TOCA	7,189	3,452	15	(221)	(231)	(113)	(9)	0	417
Oxford City Schools	TOXF	47,784	22,945	531	(490)	(450)	105	80	0	2,772
Ozark City Board of Education	TOZK	22,769	10,933	(292)	(621)	(482)	(25)	30	0	1,321
Pelham City Board of Education	TPLS	33,949	16,302	1,467	(507)	(458)	70	63	0	1,969
Pell City School System	TPEL	40,843	19,612	72	(765)	(635)	(74)	35	0	2,369
Perry County Board of Education	TPRY	16,355	7,853	(343)	(536)	(372)	(26)	18	0	949
Phenix City Board of Education	TPHC	69,665	33,452	492	(1,177)	(948)	(57)	73	0	4,041
Pickens County Board of Education	TPKS	28,875	13,865	67	(447)	(396)	15	43	0	1,675
Piedmont City Schools	TPMT	12,697	6,097	138	(195)	(194)	(16)	17	0	736
Pike County Board of Education	TPIK	25,180	12,091	100	(416)	(412)	(98)	12	0	1,460
Pike Road City Schools	TPRB	12,441	5,974	1,704	782	571	457	96	0	722
Randolph County Board of Education	TRAN	24,951	11,981	314	(203)	(253)	80	51	0	1,447
Reid State Technical College	TEVN	6,535	3,138	(285)	(367)	(226)	(6)	8	0	379
Roanoke City Schools	TROK	14,715	7,066	102	(220)	(214)	(12)	15	0	853
Russell County Board of Education	TRUS	37,003	17,788	462	(437)	(449)	13	53	0	2,146
Russellville City Board of Education	TRSV	28,857	13,857	353	(335)	(349)	(65)	19	0	1,674
Saraland Board of Education	TSAR	28,223	13,552	869	36	(35)	186	67	0	1,637
Satsuma City Schools	TSTM	13,098	6,290	260	(29)	(17)	120	37	0	760
School Superintendents of Alabama	TSAL	1,064	511	82	42	12	15	3	0	62
Scottsboro Board of Education	TSCO	28,915	13,885	31	(635)	(526)	(26)	33	0	1,677
Selma Public Schools	TSMA	35,335	16,967	(405)	(1,310)	(1,155)	(440)	(31)	0	2,049
Sheffield City Board of Education	TSHF	13,693	6,575	7	(298)	(279)	(33)	15	0	794
Shelby County Board of Education	TSBY	235,086	112,884	(3,545)	(4,047)	(2,688)	363	360	0	13,635
Shelton State Community College	TTVS	36,351	17,455	(16)	(737)	(604)	46	63	0	2,108
Snead State Community College	TSJC	14,575	6,999	197	(120)	(132)	13	21	0	845
Southern Union State Community College	TSUC	27,046	12,987	126	(413)	(254)	94	51	0	1,569
Special Programming for Achievement Network	TBSC	4,707	2,260	58	(57)	(49)	15	12	0	273
St. Clair County Board of Education	TSTC	89,820	43,130	1,007	(1,001)	(973)	59	120	0	5,210



SCHEDULE C (continued)

Employer	Employer Code	NPL @ Minus 1% (6.70%)	NPL @ Plus 1% (8.70%)	Projected Deferred Outflows/(Inflows) To Be Recognized in Pension Expense for the Fiscal Year Ended September 30						2018 Actual Employer Contributions
				2020	2021	2022	2023	2024	Thereafter	
State of Alabama--Commission on Higher Education	TCHE	4,717	2,265	85	(36)	(42)	7	8	0	274
State of Alabama--Department of Rehab Services	TDRS	80,141	38,483	117	(1,325)	(1,055)	120	130	0	4,648
State of Alabama--Department of Post-Secondary Ed	TPSE	13,753	6,604	701	393	282	214	52	0	798
State of Alabama--Department of Youth Services	TDYS	36,218	17,391	(730)	(915)	(667)	(84)	31	0	2,101
State of Alabama--High School of Math & Science	THMS	5,733	2,753	69	(39)	(39)	15	9	0	332
State of Alabama--PEEHIP	TPHP	4,762	2,287	172	12	(8)	52	18	0	276
State of Alabama--State Board of Education	TSBE	93,214	44,760	(836)	(2,835)	(2,696)	(802)	(8)	0	5,406
State of Alabama--Teachers Retirement System	TTRS	29,089	13,968	821	134	(14)	237	80	0	1,687
Sumter County Board of Education	TSUM	18,626	8,944	(287)	(537)	(528)	(230)	(18)	0	1,080
Sylacauga City Board of Education	TSYL	24,985	11,997	33	(537)	(426)	(6)	34	0	1,449
Talladega City Board of Education	TTAL	22,620	10,862	(209)	(321)	(414)	(234)	(18)	0	1,312
Talladega County Board of Education	TTDG	80,011	38,420	354	(1,302)	(1,230)	(80)	88	0	4,641
Tallapoosa County Board of Education	TTPS	30,238	14,520	7	(555)	(378)	15	37	0	1,754
Tallassee City Board of Education	TTAS	18,767	9,012	71	(373)	(349)	(71)	11	0	1,089
Tarrant Board of Education	TTAR	13,849	6,650	143	(183)	(180)	18	19	0	803
Thomasville City Schools	TTOM	14,082	6,762	(69)	(364)	(350)	(154)	(16)	0	817
Troy City Board of Education	TTRY	21,428	10,290	(169)	(450)	(385)	(72)	18	0	1,243
Troy University	TTST	188,928	90,720	(534)	(4,453)	(4,004)	227	366	0	10,958
Trussville City Board of Education	TTCB	54,368	26,106	1,272	39	(37)	364	130	0	3,153
Tuscaloosa City Schools	TTUS	134,203	64,442	2,033	(570)	(563)	515	247	0	7,784
Tuscaloosa County Schools	TTLS	186,838	89,716	3,079	(1,373)	(1,392)	552	327	0	10,837
Tuscumbia City Board of Education	TTSC	16,552	7,948	174	(202)	(173)	46	32	0	960
University Chancellor's Office	TUCO	22,337	10,726	466	(141)	(365)	8	38	0	1,296
University Charter School	TUWC	2,816	1,352	394	335	338	375	77	0	31
University of Alabama	TUVA	827,426	397,315	20,911	(1,382)	(5,137)	4,279	1,916	0	47,992
University of Alabama--Birmingham	TUMC	1,626,293	780,918	(269)	(27,914)	(24,283)	(1,831)	1,772	0	94,324
University of Alabama--Huntsville	TUAH	210,125	100,898	37	(3,623)	(2,987)	217	333	0	12,187
University of Montevallo	TALC	57,555	27,637	1,085	(425)	(631)	(41)	61	0	3,338
University of North Alabama	TFST	91,447	43,911	1,431	(836)	(704)	366	182	0	5,304
University of South Alabama	TUSA	393,576	188,988	(7,674)	(12,860)	(10,894)	(3,876)	(203)	0	22,828
University of West Alabama	TLVC	50,268	24,138	799	(407)	(463)	39	67	0	2,916
Vestavia Hills Board of Education	TVES	95,004	45,619	1,582	(591)	(564)	471	207	0	5,510
Walker County Board of Education	TWLK	85,531	41,071	266	(1,308)	(1,168)	60	126	0	4,961
Wallace Community College--Dothan	TGWD	35,486	17,040	419	(469)	(459)	(11)	43	0	2,058
Wallace State College--Hanceville	TCUT	35,779	17,180	209	(545)	(532)	(139)	15	0	2,075
Washington County Board of Education	TWSH	28,152	13,518	(437)	(850)	(723)	(297)	(22)	0	1,633
Wilcox County Board of Education	TWIL	20,011	9,609	(183)	(529)	(446)	(116)	7	0	1,161
Winfield City Board of Education	TWFD	13,753	6,604	161	(145)	(158)	(15)	11	0	798
Winston Education Board	TWIN	27,995	13,443	(152)	(723)	(577)	(69)	29	0	1,624
Total for All Entities		\$ 13,840,181	\$ 6,645,815	\$ 86,517	\$ (201,698)	\$ (185,077)	\$ (2,959)	\$ 17,068	\$ 0	\$ 802,598



SCHEDULE D

SUMMARY OF MAIN PLAN PROVISIONS AS INTERPRETED FOR ACCOUNTING AND REPORTING 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



SCHEDULE D (continued)

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).*



SCHEDULE D (continued)

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



SCHEDULE D (continued)

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 E

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

INVESTMENT RATE OF RETURN: 7.70% per annum, compounded annually, including price inflation at 2.75%.

SALARY INCREASES: Representative values of the assumed annual rates of future salary increases are as follows and include wage inflation at 3.00% per annum:

Service	Annual Rate
0	5.00 %
1-5	4.00
6-10	3.75
11-15	3.50
16 & Over	3.25



SCHEDULE E (continued)

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

Age	Annual Rate of						
	Death*	Disability**		Withdrawal***			
		Tier I	Tier II	Years of Service			
		Years of Service		0-4	5-9	10-19	20+
	10-24	25+	10+	0-4	5-9	10-19	20+
Male							
20	0.0293%	0.0008%		0.0008%	25.00%		
25	0.0319	0.0250		0.0250	14.80	11.00%	
30	0.0376	0.0425		0.0425	13.80	5.40	3.50%
35	0.0655	0.1300		0.1300	13.50	5.40	2.50
40	0.0914	0.1700		0.1700	13.00	5.40	2.25
45	0.1278	0.2700	0.2000%	0.2700	13.00	5.40	2.25
50	0.1812	0.6000	0.2000	0.6000	12.00	5.00	2.50
55	0.2567	0.9000	0.2000	0.9000	11.50	5.00	2.50
60	0.3815	0.5000	0.5000	1.3000	12.00	4.50	2.50
65	0.5353	0.5000	0.5000	0.5000	12.00	6.00	
69	0.6326	0.5000	0.5000	0.5000	12.00	6.25	
Female							
20	0.0108%	0.0100%		0.0100%	25.00%		
25	0.0117	0.0275		0.0275	12.75	9.00%	
30	0.0149	0.0425		0.0425	13.50	5.80	4.30%
35	0.0268	0.1000		0.1000	13.50	5.00	2.60
40	0.0399	0.2000		0.2000	11.50	4.75	2.00
45	0.0635	0.3500	0.2000%	0.3500	10.75	4.10	2.00
50	0.0947	0.6500	0.2000	0.6500	10.75	3.90	2.20
55	0.1371	1.0500	0.2000	1.0500	11.00	4.20	2.40
60	0.1929	0.5000	0.5000	1.4000	12.00	4.50	2.70
65	0.2743	0.5000	0.5000	0.5000	15.00	6.75	
69	0.3435	0.5000	0.5000	0.5000	15.00	7.25	

*Rates of pre-retirement mortality are according to the sex distinct RP-2000 Employee Mortality Table (with the sex distinct RP-2000 Combined Mortality Table used for ages over 70) projected with Scale BB to 2020 with an adjustment factor of 90% for males and 60% for females.

**No rates of disability are assumed for members with less than 10 years of service.

***No rates of withdrawal are assumed after eligibility for service retirement.



SCHEDULE E (continued)

SERVICE RETIREMENT:

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

For members upon attaining 25 years of service, rates are as follows:

<u>Age Group</u>	<u>Annual Rate</u>	
	<u>Male*</u>	<u>Female**</u>
47 & Under	25.0%	28.0%
48	25.0	20.0
49	20.0	17.0
50	16.5	13.0
51 to 53	16.0	15.0
54	16.0	17.0
55	16.0	18.0
56-57	16.0	19.0
58	16.0	21.0
59	20.0	22.0
60	20.0	30.0
61	20.0	27.5
62	35.0	45.0
63	30.0	35.0
64	23.0	32.0
65	28.0	38.0
66	27.0	40.0
67	22.0	35.0
68	22.0	37.0
69 to 70	22.0	30.0
71-74	20.0	30.0
75	100.0	100.0

**For males, retirement rates are increased by 5% in the year first attaining 25 years of service from age 51 through age 60.*

***For females, retirement rates are increased by 9% in the year first attaining 25 years of service from age 50 through age 59.*



SCHEDULE E (continued)

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

<u>Age Group</u>	<u>Annual Rate</u>	
	<u>Male</u>	<u>Female</u>
60	12.5%	17.0%
61	11.0	13.5
62	25.0	23.5
63	18.5	18.0
64	15.0	17.0
65	28.0	28.0
66	27.0	28.0
67	22.0	23.0
68	22.0	27.0
69	22.0	22.0
70	22.0	26.0
71 to 74	20.0	24.0
75 & Above	100.0	100.0

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

<u>Age Group</u>	<u>Annual Rate</u>			
	<u>Male*</u>		<u>Female**</u>	
	<u>Less than 25 years of service</u>	<u>25 or more years of service</u>	<u>Less than 25 years of service</u>	<u>25 or more years of service</u>
62	50.0%	60.0%	50.0%	70.0%
63	18.5	30.0	18.0	35.0
64	15.0	23.0	17.0	32.0
65	28.0	28.0	28.0	38.0
66	27.0	27.0	28.0	40.0
67	22.0	22.0	23.0	35.0
68	22.0	22.0	27.0	37.0
69	22.0	22.0	22.0	30.0
70	22.0	22.0	26.0	30.0
71 to 74	20.0	20.0	24.0	30.0
75 & above	100.0	100.0	100.0	100.0

* For FLC Tier II members, rates on or after age 60 are the same as those for Tier I, while rates from ages 56 to 59 are equal to 0.20 for service less than 25 years and 0.30 for service greater than or equal to 25 years.

** For FLC Tier II members, rates on or after age 60 are the same as those for Tier I, while rates from ages 56 to 59 are equal to 0.20 for service less than 25 years and 0.40 for service greater than or equal to 25 years.



SCHEDULE E (continued)

DEATHS AFTER RETIREMENT: Rates of mortality for the period after service retirement are according to the RP-2000 White Collar Mortality Table projected to 2020 using scale BB and adjusted 115% for all ages for males and 112% for ages 78 and over for females. The rates of disabled mortality were based on the RP-2000 Disabled Mortality Table projected to 2020 using scale BB and adjusted 105% for males and 120% for females. Representative values of assumed mortality are as follows:

<u>Age</u>	<u>Service Retirement</u>		<u>Disability Retirement</u>	
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>
55	0.3575%	0.2339%	3.5044%	1.7959%
60	0.5579	0.3825	3.8359	2.1434
65	0.9991	0.6795	4.1382	2.6417
70	1.6384	1.1928	4.8570	3.5474
75	2.8589	2.0200	6.3692	4.9231
80	5.0501	3.7900	8.4883	6.8160
85	8.8966	6.5271	10.9897	9.4450
90	16.4327	11.3249	15.4359	13.4706

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.

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 or the value of the deferred annuity.

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.

ASSET METHOD: Market Value

LIABILITY FOR CURRENT INACTIVE MEMBERS: Member Contribution Balance is multiplied by a factor of 2.0. for vested members with incomplete data and 1.0 for other inactive members.

LIABILITY FOR POST-DROP ACTIVE MEMBERS: Members are assumed to retire immediately and receive their accrued benefit.

COLA: No future ad hoc cost of living adjustments (COLAs) are assumed.

FUTURE SERVICE CREDIT: One year of creditable service per year of employment.



SCHEDULE F

FUNDING POLICY OF THE TEACHERS' RETIREMENT SYSTEM BOARD OF CONTROL

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.

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.



SCHEDULE F (continued)

- 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. 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.

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.