



Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve



Retirement Systems
of Alabama

GASB STATEMENT NO. 68 REPORT
FOR THE
EMPLOYEES' RETIREMENT SYSTEM OF ALABAMA
PREPARED AS OF SEPTEMBER 30, 2019





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

July 24, 2020

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

Members of the Board:

Presented in this report is information to assist the Employees' Retirement System of Alabama (ERS) 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 is presented for the period ending September 30, 2019 (the Measurement Date).

GASB Statement No. 68 establishes accounting and financial reporting requirements for governmental employers who 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, including the Net Pension Liability, was performed as of September 30, 2018. The valuation was based on 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 and Ed Koebel are members of the American Academy of Actuaries and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.



Pension Board

July 24, 2020

Page 2

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 the 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 horizontal line underneath.

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

A handwritten signature in blue ink that reads 'Edward J. Koebel'.

Edward J. Koebel, EA, FCA, MAAA
Chief Executive Officer



TABLE OF CONTENTS

<u>Section</u>	<u>Item</u>	<u>Page No.</u>
I	Introduction	1
II	Summary of Principal Results	3
III	Notes to Financial Statements	4
IV	Pension Expense	19
 <u>Schedule</u>		
A	Required Supplementary Information Tables	21
B	Summary of Benefit Provisions Evaluated	25
C	Statement of Actuarial Assumptions and Methods	33



**REPORT OF THE ANNUAL GASB STATEMENT NO. 68
REQUIRED INFORMATION FOR THE
EMPLOYEES' RETIREMENT SYSTEM OF ALABAMA**

PREPARED AS OF SEPTEMBER 30, 2019

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 Employees’ Retirement System of Alabama is an agent multiple-employer defined benefit pension plan.

This report, prepared as of September 30, 2019 (the Measurement Date), presents information to assist the Employees’ Retirement System of Alabama (System) in meeting the requirements of GASB 68 for the fiscal year ending September 30, 2020 (Reporting Date). Much of the material provided in this report is based on the data, assumptions and results of the annual actuarial valuation of the System as of September 30, 2018. The results of the valuation were detailed in a report dated June 7, 2019.

The NPL shown in the GASB Statement No. 67 Schedules for the Employees' Retirement System of Alabama Prepared as of September 30, 2019 and submitted February 28, 2020 is the total NPL used for purposes of GASB 68. The NPL for each local employer was submitted in separate individual reports.

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, recognition of increases/decreases in liability due to actuarial experience and actuarial assumption changes, and recognition of investment gains/losses. The actuarial experience and assumption change impacts are recognized over the average expected remaining service life of the employer’s membership as of the beginning of the measurement period, and investment gains/losses are recognized over five years. The development of the PE is shown in Section IV.

The unrecognized 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 on each employer’s balance sheet. The development of the deferred inflows and outflows is shown in Section III.



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

The required GASB 68 information has been prepared separately for each employer participating in ERS. This report shows all required tables for state employees, state policemen and in the aggregate for the participating local employers. The required information for the participating local employers has been reported on an individual basis and submitted under separate cover.



SECTION II – SUMMARY OF PRINCIPAL RESULTS
AS OF THE MEASUREMENT DATE
(\$ IN THOUSANDS)

Valuation Date (VD):	September 30, 2018			
Measurement Date (MD):	September 30, 2019			
Reporting Date (RD):	September 30, 2020			
	State Employees	State Police	Local Employees	Total
Membership Data:				
Retirees and Survivors	24,303	938	25,871	51,112
Terminated Vested Employees	1,069	22	1,794	2,885
Terminated Non-vested Employees	22,696	12	11,001	33,709
Active Members	28,292	681	55,222	84,195
Post-DROP Retired Members Still in Active Service	<u>241</u>	<u>0</u>	<u>98</u>	<u>339</u>
Total	76,601	1,653	93,986	172,240
Single Equivalent Interest Rate (SEIR):				
Long-Term Expected Rate of Return	7.70%	7.70%	7.70%	7.70%
Municipal Bond Index Rate at Measurement Date	2.81%	2.81%	2.81%	2.81%
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	N/A	N/A
Single Equivalent Interest Rate	7.70%	7.70%	7.70%	7.70%
Net Pension Liability:				
Total Pension Liability (TPL)	\$7,855,880	\$630,995	\$9,867,016	\$18,353,891
Fiduciary Net Position (FNP)	<u>4,979,118</u>	<u>342,665</u>	<u>7,246,690</u>	<u>\$12,568,473</u>
Net Pension Liability (NPL= TPL–FNP)	\$2,876,762	\$288,330	\$2,620,326	\$5,785,418
FNP as a percentage of TPL	63.38%	54.31%	73.44%	68.48%
Pension Expense:	\$272,146	\$33,945	\$313,067	\$619,159
Deferred Outflows of Resources:	\$65,641	\$5,542	\$432,919	\$504,102
Deferred Inflows of Resources:	\$16,392	\$654	\$201,122	\$218,168



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.

Paragraph 40 (c): The data required regarding the membership of the Employees’ Retirement System of Alabama were furnished by the System office. The following table summarizes the membership of the system as of September 30, 2019, the Measurement Date.

Membership

GROUP	State Employees	State Police	Local Employees	TOTAL
Retired participants and beneficiaries currently receiving benefits	24,303	938	25,871	51,112
Terminated participants and beneficiaries entitled to benefits but not yet receiving benefits	1,069	22	1,794	2,885
Terminated participants entitled to a refund of contributions	22,696	12	11,001	33,709
Active Participants	28,292	681	55,222	84,195
Post-DROP participants still in active service	<u>241</u>	<u>0</u>	<u>98</u>	<u>339</u>
Total	76,601	1,653	93,986	172,240

Paragraph 41: This paragraph requires information regarding the actuarial assumptions used to measure the TPL. The actuarial valuation as of September 30, 2018 was prepared based on an assumed investment rate of return of 7.70%. The TPL as of September 30, 2019 was determined based on the annual actuarial funding valuation report prepared as of September 30, 2018. The complete set of actuarial assumptions utilized in developing the TPL are outlined in Schedule C. The key actuarial assumptions are summarized below:

Inflation	2.75 percent
Salary increases	3.25 – 5.00 percent for State and Local Employees and 4.50 percent for State Police, including inflation
Investment rate of return	7.70 percent, net of pension plan investment expense, including inflation



Mortality rates were based on the sex distinct RP-2000 Blue Collar Mortality Table Projected with Scale BB to 2020 with an adjustment of 125% at all ages for males and 120% for females at ages on and after age 78. The rates of mortality for the period after disability retirement are according to the sex distinct RP-2000 Disabled Retiree Mortality Table Projected with Scale BB to 2020 with an adjustment of 130% at all ages for females.

The actuarial assumptions used in the September 30, 2018 valuation were based on the results of an actuarial experience study for the period October 1, 2010 – September 30, 2015.

Paragraph 42 (a)-(f): The discount rate used to measure the TPL at September 30, 2019 was the long term rate of return, 7.70 percent. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the rates currently in effect and that employer contributions will be made in accordance with the funding policy adopted by the Board of Control. Projected future benefit payments for all current plan members were projected for all years.

Based on those assumptions, each employer's FNP 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 TPL and a municipal bond rate was not used in determining the discount rate.

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, as provided by the System, 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	100.0%	

*Includes assumed rate of inflation of 2.75%.

Paragraph 42 (g): This paragraph requires disclosure of the sensitivity of the NPL to changes in the discount rate. The following presents 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:

(\$ in Thousands)

	1% Decrease (6.70%)	Current Discount Rate (7.70%)	1% Increase (8.70%)
Net Pension Liability			
State Employees	\$3,669,361	\$2,876,762	\$2,202,309
State Police	350,295	288,330	235,300
Local Employees	<u>3,738,716</u>	<u>2,620,326</u>	<u>1,674,999</u>
Total	<u>\$7,758,372</u>	<u>\$5,785,418</u>	<u>\$4,112,608</u>



Paragraph 44: This paragraph requires a schedule of changes in the NPL. The needed information is provided in the table below.

**CHANGES IN THE NET PENSION LIABILITY
STATE EMPLOYEES
(\$ in Thousands)**

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
Balances at September 30, 2018	<u>\$7,739,284</u>	<u>\$5,123,022</u>	<u>\$2,616,262</u>
Changes for the year:			
Service cost	110,482		110,482
Interest	573,993		573,993
Benefit changes			
Difference between expected and actual experience	310		310
Changes in assumptions	0		0
Contributions - employer		208,020	(208,020)
Contributions - employee		104,031	(104,031)
Other		0	0
Net investment income		128,063	(128,063)
Benefit payments, including refunds of employee contributions	(569,659)	(569,659)	0
Administrative expense		(15,829)	15,829
Transfers among employers	<u>1,470</u>	<u>1,470</u>	<u>0</u>
Net changes	<u>116,596</u>	<u>(143,904)</u>	<u>260,500</u>
Balances at September 30, 2019	<u>\$7,855,880</u>	<u>\$4,979,118</u>	<u>\$2,876,762</u>



**CHANGES IN THE NET PENSION LIABILITY
STATE POLICE
(\$ in Thousands)**

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
Balances at September 30, 2018	<u>\$620,375</u>	<u>\$352,888</u>	<u>\$267,487</u>
Changes for the year:			
Service cost	8,758		8,758
Interest	46,042		46,042
Benefit changes			
Difference between expected and actual experience	181		181
Changes in assumptions	0		0
Contributions - employer		20,915	(20,915)
Contributions - employee		4,406	(4,406)
Net investment income		8,817	(8,817)
Benefit payments, including refunds of employee contributions	(44,857)	(44,857)	0
Administrative expense	0	0	0
Transfers among employers	<u>496</u>	<u>496</u>	<u>0</u>
Net changes	<u>10,620</u>	<u>(10,223)</u>	<u>20,843</u>
Balances at September 30, 2019	<u>\$630,995</u>	<u>\$342,665</u>	<u>\$288,330</u>



**CHANGES IN THE NET PENSION LIABILITY
LOCAL EMPLOYEES
(\$ in Thousands)**

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
Balances at September 30, 2018	<u>\$9,502,815</u>	<u>\$7,244,442</u>	<u>\$2,258,373</u>
Changes for the year:			
Service cost	196,359		196,359
Interest	709,999		709,999
Benefit changes			
Difference between expected and actual experience	23,921		23,921
Changes in assumptions	0		0
Contributions - employer		238,618	(238,618)
Contributions - employee		146,003	(146,003)
Net investment income		183,705	(183,705)
Benefit payments, including refunds of employee contributions	(564,112)	(564,112)	0
Administrative expense	0	0	0
Transfers among employers	<u>(1,966)</u>	<u>(1,966)</u>	<u>0</u>
Net changes	<u>364,201</u>	<u>2,248</u>	<u>361,953</u>
Balances at September 30, 2019	<u>\$9,867,016</u>	<u>\$7,246,690</u>	<u>\$2,620,326</u>



CHANGES IN THE NET PENSION LIABILITY
TOTAL
(\$ in Thousands)

	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) – (b)
Balances at September 30, 2018	<u>\$17,862,474</u>	<u>\$12,720,352</u>	<u>\$5,142,122</u>
Changes for the year:			
Service cost	315,599		315,599
Interest	1,330,034		1,330,034
Benefit changes			
Difference between expected and actual experience	24,412		24,412
Changes in assumptions	0		0
Contributions - employer		467,553	(467,553)
Contributions - employee		254,440	(254,440)
Other		0	0
Net investment income		320,585	(320,585)
Benefit payments, including refunds of employee contributions	(1,178,628)	(1,178,628)	0
Administrative expense	0	(15,829)	15,829
Transfers among employers	<u>0</u>	<u>0</u>	<u>0</u>
Net changes	<u>491,417</u>	<u>(151,879)</u>	<u>643,296</u>
Balances at September 30, 2019	<u>\$18,353,891</u>	<u>\$12,568,473</u>	<u>\$5,785,418</u>



Paragraph 45 (a): September 30, 2018 is the actuarial valuation date upon which the TPL is based. An expected TPL is determined as of September 30, 2019 using standard roll forward techniques.

Paragraph 45 (c): There have been no changes in assumptions since the prior measurement date.

Paragraph 45 (d): There was no change in the benefit terms that affected the measurement of the TPL since the prior measurement date.

Paragraph 45 (g): See Section IV for the annual Pension Expense.

Paragraph 45 (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 members of each employer at the beginning of the measurement period. Investment gains and losses are amortized over a fixed five year period.

The following tables provide a summary of the deferred inflows and outflows as of September 30, 2019.



SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES
STATE EMPLOYEES

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$221	\$16,392
Changes of assumptions	15,263	0
Net difference between projected and actual earnings on plan investments	50,157	0
Employer contributions subsequent to the Measurement Date	<u>See Note*</u>	<u>0</u>
Total	<u>\$-----</u>	<u>\$16,392</u>

STATE POLICE

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$305	\$654
Changes of assumptions	1,753	0
Net difference between projected and actual earnings on plan investments	3,484	0
Employer contributions subsequent to the Measurement Date	<u>See Note*</u>	<u>0</u>
Total	<u>\$-----</u>	<u>\$654</u>

*Enter FY 2020 employer contributions related to normal and accrued liability components of employer rate net of any refunds or error service payments and add for total Deferred Outflows of Resources.



**SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES
(continued)
LOCAL EMPLOYEES**

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$194,640	\$201,122
Changes of assumptions	153,060	0
Net difference between projected and actual earnings on plan investments	85,219	0
Employer contributions subsequent to the Measurement Date	<u>See Note*</u>	<u>0</u>
Total	<u>\$-----</u>	<u>\$201,122</u>

TOTAL

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$195,166	\$218,168
Changes of assumptions	170,076	0
Net difference between projected and actual earnings on plan investments	138,860	0
Employer contributions subsequent to the Measurement Date	<u>See Note*</u>	<u>0</u>
Total	<u>\$-----</u>	<u>\$218,168</u>

*Enter FY 2020 employer contributions related to normal and accrued liability components of employer rate net of any refunds or error service payments and add for total Deferred Outflows of Resources. Prepared on an individual employer basis

SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES

(continued)

STATE EMPLOYEES



Total Deferred Outflows and Inflows between Expected and Actual Experience											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2019	\$310	\$0	3.5	\$0	\$0	\$310	\$0	\$89	\$0	\$221	\$0
2018	\$0	\$16,241	3.5	\$0	\$11,600	\$0	\$0	\$0	\$4,641	\$0	\$6,959
2017	\$0	\$56,579	3.6	\$0	\$25,148	\$0	\$0	\$0	\$15,715	\$0	\$9,433
2016	\$3,957	\$0	3.7	\$748	\$0	\$0	\$0	\$748	\$0	\$0	\$0
Total				<u>\$748</u>	<u>\$36,748</u>	<u>\$310</u>	<u>\$0</u>			<u>\$221</u>	<u>\$16,392</u>

Total Deferred Outflows and Inflows for Differences From Assumption Changes											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2018	\$35,615	\$0	3.5	\$25,439	\$0	\$0	\$0	\$10,176	\$0	\$15,263	\$0
2017	\$0	\$0	3.6	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	\$183,527	\$0	3.7	34,722	\$0	\$0	\$0	\$34,722	\$0	\$0	\$0
Total				<u>\$60,161</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>			<u>\$15,263</u>	<u>\$0</u>

Total Deferred Outflows and Inflows for Differences in Investment Experience											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2019	\$255,939	\$0	5	\$0	\$0	\$255,939	\$0	\$51,188	\$0	\$204,751	\$0
2018	\$0	\$72,669	5	\$0	\$58,135	\$0	\$0	\$0	\$14,534	\$0	\$43,601
2017	\$0	\$229,606	5	\$0	\$137,764	\$0	\$0	\$0	\$45,921	\$0	\$91,843
2016	\$0	\$95,746	5	0	38,299	\$0	\$0	\$0	\$19,149	\$0	\$19,150
2015	\$314,548	\$0	5	62,912	0	\$0	\$0	\$62,912	\$0	\$0	\$0
Total				<u>\$62,912</u>	<u>\$234,198</u>	<u>\$255,939</u>	<u>\$0</u>			<u>\$204,751</u>	<u>\$154,594</u>
Net difference between projected and actual earnings on investments										\$50,157	\$0

SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES
(continued)
STATE POLICE



Total Deferred Outflows and Inflows between Expected and Actual Experience											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2019	\$181	\$0	3.6	\$0	\$0	\$181	\$0	\$50	\$0	\$131	\$0
2018	0	\$1,093	3.4	\$0	\$771	\$0	\$0	\$0	\$321	\$0	\$450
2017	0	1,079	3.7	\$0	\$495	\$0	\$0	\$0	\$291	\$0	\$204
2016	7,138	0	4.1	\$1,915	\$0	\$0	\$0	\$1,741	\$0	\$174	\$0
2015	0	2,544	4.6	\$0	\$332	\$0	\$0	\$0	\$332	\$0	\$0
Total				<u>\$1,915</u>	<u>\$1,598</u>	<u>\$181</u>	<u>\$0</u>			<u>\$305</u>	<u>\$654</u>

Total Deferred Outflows and Inflows for Differences From Assumption Changes											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2018	\$2,823	\$0	3.4	\$1,993	\$0	\$0	\$0	\$830	\$0	\$1,163	\$0
2017	\$0	\$0	3.7	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	\$24,237	\$0	4.1	6,502	\$0	\$0	\$0	\$5,912	\$0	\$590	\$0
Total				<u>\$8,495</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>			<u>\$1,753</u>	<u>\$0</u>

Total Deferred Outflows and Inflows for Differences in Investment Experience											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2019	\$17,622	\$0	5	\$0	\$0	\$17,622	\$0	\$3,524	\$0	\$14,098	\$0
2018	\$0	\$5,012	5	\$0	\$4,010	\$0	\$0	\$0	\$1,002	\$0	\$3,008
2017	\$0	\$15,745	5	\$0	\$9,447	\$0	\$0	\$0	\$3,149	\$0	\$6,298
2016	\$0	\$6,544	5	\$0	2,617	\$0	\$0	\$0	\$1,309	\$0	\$1,308
2015	\$21,685	\$0	5	\$4,337	\$0	\$0	\$0	\$4,337	\$0	\$0	\$0
Total				<u>\$4,337</u>	<u>\$16,074</u>	<u>\$17,622</u>	<u>\$0</u>			<u>\$14,098</u>	<u>\$10,614</u>
Net difference between projected and actual earnings on investments										\$3,484	\$0

SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES
(continued)
LOCAL EMPLOYEES



Total Deferred Outflows and Inflows between Expected and Actual Experience											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2019	\$85,590	\$61,669	Varies	\$0	\$0	\$85,590	\$61,669	\$14,734	\$11,915	\$70,856	\$49,754
2018	\$53,203	\$115,142	Varies	\$43,225	\$94,888	\$0	\$0	\$9,046	\$18,695	\$34,179	\$76,193
2017	\$88,079	\$94,532	Varies	\$9,333	\$59,312	\$0	\$0	\$13,253	\$14,643	\$46,080	\$44,669
2016	\$69,623	\$77,377	Varies	\$37,228	\$30,943	\$0	\$0	\$10,228	\$9,452	\$27,000	\$21,491
2015	\$78,729	\$52,479	Varies	\$28,543	\$16,895	\$0	\$0	\$12,018	\$7,880	\$16,525	\$9,015
Total				<u>\$168,329</u>	<u>\$202,038</u>	<u>\$85,590</u>	<u>\$61,669</u>			<u>\$194,640</u>	<u>\$201,122</u>

Total Deferred Outflows and Inflows for Differences From Assumption Changes											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2018	\$49,188	\$0	Varies	\$40,695	\$0	\$0	\$0	\$7,948	\$0	\$32,747	\$0
2017	\$0	\$0	Varies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	\$350,904	\$0	Varies	\$174,457	\$0	\$0	\$0	\$54,144	\$0	\$120,313	\$0
Total				<u>\$215,152</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>			<u>\$153,060</u>	<u>\$0</u>

Total Deferred Outflows and Inflows for Differences in Investment Experience											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2019	\$367,152	\$0	5	\$0	\$0	\$367,152	\$0	\$73,431	\$0	\$293,721	\$0
2018	\$0	\$100,918	5	\$0	\$80,734	\$0	\$0	\$0	\$20,184	\$0	\$60,550
2017	\$0	\$308,114	5	\$0	\$184,868	\$0	\$0	\$0	\$61,623	\$0	\$123,245
2016	\$0	\$123,532	5	\$0	\$49,413	\$0	\$0	\$0	\$24,706	\$0	\$24,707
2015	\$389,335	\$0	5	\$77,865	\$0	\$0	\$0	\$77,865	\$0	\$0	\$0
Total				<u>\$77,865</u>	<u>\$315,015</u>	<u>\$367,152</u>	<u>\$0</u>			<u>\$293,721</u>	<u>\$208,502</u>
Net difference between projected and actual earnings on investments										\$85,219	

SCHEDULE OF DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES
(continued)
TOTAL



Total Deferred Outflows and Inflows between Expected and Actual Experience											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2019	\$86,081	\$61,669	Varies	\$0	\$0	\$86,081	\$61,669	\$14,873	\$11,915	\$71,208	\$49,754
2018	\$53,203	\$132,476	Varies	\$43,225	\$107,259	\$0	\$0	\$9,046	\$23,657	\$34,179	\$83,602
2017	\$88,079	\$152,190	Varies	\$59,333	\$84,955	\$0	\$0	\$13,253	\$30,649	\$46,080	\$54,306
2016	\$80,718	\$77,377	Varies	\$39,891	\$30,943	\$0	\$0	\$12,717	\$9,452	\$27,174	\$21,491
2015	\$78,729	\$55,023	Varies	\$28,543	\$17,227	\$0	\$0	\$12,018	\$8,212	\$16,525	\$9,015
Total				\$170,992	\$240,384	\$86,081	\$61,669			\$195,166	\$218,168
Net difference between expected and actual experience										\$0	\$23,002

Total Deferred Outflows and Inflows for Differences From Assumption Changes											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2018	\$87,626	\$0	Varies	\$68,127	\$0	\$0	\$0	\$18,954	\$0	\$49,173	\$0
2017	\$0	\$0	Varies	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2016	\$558,668	\$0	Varies	\$215,681	\$0	\$0	\$0	\$94,778	\$0	\$120,903	\$0
Total				\$283,808	\$0	\$0	\$0			\$170,076	\$0

Total Deferred Outflows and Inflows for Differences in Investment Experience											
Year	Initial Balance of Losses / Deferred Outflow	Initial Balance of Gains / Deferred Inflow	Amortization Period	Beginning Balance				Amounts Recognized in Pension Expense / Deferred Outflow	Amounts Recognized in Pension Expense / Deferred Inflow	Ending Balance	
				Deferred Outflows	Deferred Inflows	Losses / Deferred Outflows	Gains / Deferred Inflows			Deferred Outflows	Deferred Inflows
				(a)	(b)	(c)	(d)			(e)	(f)
2019	\$640,713	\$0	5	\$0	\$0	\$640,713	\$0	\$128,143	\$0	\$512,570	\$0
2018	\$0	\$178,599	5	\$0	\$142,879	\$0	\$0	\$0	\$35,720	\$0	\$107,159
2017	\$0	\$553,465	5	\$0	\$332,079	\$0	\$0	\$0	\$110,693	\$0	\$221,386
2016	\$0	\$225,823	5	\$0	\$90,329	\$0	\$0	\$0	\$45,164	\$0	\$45,165
2015	\$725,568	\$0	5	\$145,114	\$0	\$0	\$0	\$145,114	\$0	0	\$0
Total				\$145,114	\$565,287	\$640,713	\$0			\$512,570	\$373,710
Net difference between projected and actual earnings on investments										\$138,860	\$0



Paragraph 45 (i): Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in Pension Expense as follows:

Deferred Amounts to be Recognized in Fiscal Years Following the Reporting Date

Year	State Employees	State Police	Local Employees	Total
2021	(\$32,226)	(\$816)	\$22,035	(\$11,007)
2022	(6,410)	(373)	35,415	28,632
2023	36,698	2,551	78,567	117,816
2024	51,187	3,526	85,978	140,691
2025	0	0	6,802	6,802
Thereafter	0	0	3,000	3,000



SECTION IV – PENSION EXPENSE

As noted earlier, the 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 (EAN) actuarial funding method. The second item is interest on the beginning of year TPL and the cash flows during the year at the 7.70% 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,
- 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 enhancement for existing Plan members, or negative if there is a benefit reduction. For the year ended September 30, 2019 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 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 membership of the employer. The 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, 2019 the average remaining service life is 9.5 years for state employees and 8.3 years for state police. The remaining service life of the inactive members is zero. Therefore, the figure to use for the amortization is the weighted average of these two amounts, or 3.5 years for state employees and 3.6 years for state police. The amortization period varies for each local employer.

The last item under changes in TPL are changes in actuarial assumptions. Recognition of the change is spread over the remaining service life of the entire membership of the employer. For the year ended September 30, 2019 there were no assumption changes to be recognized.

Member contributions for the year and projected earnings on the FNP, again at the rate used to calculate the liabilities, are subtracted from the amount determined thus far. One-fifth of current period differences between actual and projected earnings on the FNP are recognized in the pension expense.

The current year portions of previously determined experience, assumption, and earnings amounts, recognized as deferred inflows and outflows (see Section IV) are included next. Deferred inflows are subtracted from the PE while deferred outflows are added to the PE. Transfers among employers are also included in PE.



The calculation of the Pension Expense is shown in the following table.

Pension Expense
Determined as of the Measurement Date
(\$ thousands)

	State Employees	State Police	Local Employees	Total
Service Cost	\$110,482	\$8,758	\$196,359	\$315,599
Interest	573,993	46,042	709,999	1,330,034
Current-period benefit changes	0	0	0	0
Expensed portion of current-period difference between expected and actual experience in the total pension liability	89	50	2,819	2,958
Expensed portion of current-period changes of assumptions	0	0	0	0
Member contributions	(104,031)	(4,406)	(146,003)	(254,440)
Other	0	0	0	0
Projected earnings on plan investments	(384,002)	(26,439)	(550,857)	(961,298)
Expensed portion of current-period differences between actual and projected earnings on plan investments	51,188	3,524	73,431	128,143
Administrative expense	15,829	0	0	15,829
Transfers among employers	0	0	0	0
Recognition of beginning deferred outflows of resources as pension expense	45,646	8,483	106,637	160,766
Recognition of beginning deferred inflows of resources as pension expense	(37,048)	(2,067)	(79,318)	(118,433)
Pension Expense	<u>\$272,146</u>	<u>\$33,945</u>	<u>\$313,067</u>	<u>\$619,158</u>

SCHEDULE A
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY
Last 10 Fiscal Years Ending September 30
STATE EMPLOYEES
(\$ in thousands)



	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Total pension liability											
Service Cost	\$ 110,482	\$ 107,929	\$ 107,377	\$ 113,497	\$ 152,160	\$ 107,776					
Interest	573,993	567,816	563,620	557,699	549,795	541,492					
Benefit changes	-	-	-	-	-	-					
Difference between expected and actual experience	310	(16,241)	(56,579)	3,957	(60,921)	-					
Changes of assumptions	-	35,615	-	183,527	-	-					
Benefit payments, including refunds of employee contributions	(569,659)	(569,781)	(551,721)	(563,913)	(559,171)	(531,786)					
Transfers among employers	1,470	2,411	1,290	(409)	19,304	-					
Net change in total pension liability	116,596	127,749	63,987	294,358	101,167	117,482					
Total pension liability - beginning	\$ 7,739,284	\$ 7,611,535	\$ 7,547,548	\$ 7,253,190	\$ 7,152,023	\$ 7,034,541					
Total pension liability - ending (a)	\$ 7,855,880	\$ 7,739,284	\$ 7,611,535	\$ 7,547,548	\$ 7,253,190	\$ 7,152,023					
Components of Plan Fiduciary Net Position reserved to fund Total Pension Liability											
Contributions - employer	\$ 208,020	\$ 186,715	\$ 184,362	\$ 192,420	\$ 177,599	\$ 146,752					
Contributions - member	104,031	97,527	95,979	100,907	97,144	96,585					
Other	-	(7,481)	-	-	68,898	-					
Net investment income	128,063	446,946	581,603	446,180	54,772	523,129					
Benefit payments, including refunds of employee contributions	(569,659)	(570,131)	(551,721)	(563,913)	(559,171)	(531,786)					
Transfers among employers	1,470	2,411	478	(409)	6,435	410					
Administrative Expenses	(15,829)	(13,763)	(14,502)	(13,023)	(13,182)	-					
Net change in plan fiduciary net position	(143,904)	142,224	296,199	162,162	(167,505)	235,090					
Plan fiduciary net position - beginning	\$ 5,123,022	\$ 4,980,798	\$ 4,684,599	\$ 4,522,437	\$ 4,689,942	\$ 4,454,852					
Plan fiduciary net position - ending (b)	\$ 4,979,118	\$ 5,123,022	\$ 4,980,798	\$ 4,684,599	\$ 4,522,437	\$ 4,689,942					
Net pension liability (asset) - ending (a) - (b)	\$ 2,876,762	\$ 2,616,262	\$ 2,630,737	\$ 2,862,949	\$ 2,730,752	\$ 2,462,081					
Plan fiduciary net position as a percentage of the total pension liability	63.38%	66.20%	65.44%	62.07%	62.35%	65.58%					
Covered payroll*	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX					
Net pension liability (asset) as a percentage of covered payroll	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%					

*Employer's covered payroll during the measurement period is the total covered payroll. For FY2020 the measurement period is October 1, 2019 – September 30, 2020.

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years for which information is available.

SCHEDULE A
REQUIRED SUPPLEMENTARY INFORMATION
SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY
Last 10 Fiscal Years Ending September 30
STATE POLICE
(\$ in thousands)



	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009
Total pension liability											
Service Cost	\$ 8,758	\$ 8,829	\$ 9,016	\$ 8,484	\$ 8,394	\$ 8,654					
Interest	46,042	45,434	44,687	43,025	42,677	41,950					
Benefit changes	-	-	-	-	-	-					
Difference between expected and actual experience	181	(1,093)	(1,079)	7,138	(2,544)	-					
Changes of assumptions	-	2,823	-	24,237	-	-					
Benefit payments, including refunds of employee contributions	(44,857)	(44,004)	(42,454)	(44,770)	(43,588)	(39,451)					
Transfers among employers	496	127	253	(470)	-	-					
Net change in total pension liability	10,620	12,116	10,423	37,644	4,939	11,153					
Total pension liability - beginning	\$ 620,375	\$ 608,259	\$ 597,836	\$ 560,192	\$ 555,253	\$ 544,100					
Total pension liability - ending (a)	\$ 630,995	\$ 620,375	\$ 608,259	\$ 597,836	\$ 560,192	\$ 555,253					
Components of Plan Fiduciary Net Position reserved to fund Total Pension Liability											
Contributions - employer	\$ 20,915	\$ 17,885	\$ 23,031	\$ 18,491	\$ 16,463	\$ 15,347					
Contributions - member	4,406	4,141	4,322	4,407	4,374	4,454					
Other	-	-	-	-	-	-					
Net investment income	8,817	30,819	39,883	30,508	3,776	36,410					
Benefit payments, including refunds of employee contributions	(44,857)	(44,004)	(42,454)	(44,770)	(43,588)	(39,451)					
Transfers among employers	496	127	253	(470)	(138)	(384)					
Administrative Expenses	-	-	-	-	-	-					
Net change in plan fiduciary net position	(10,223)	8,968	25,035	8,166	(19,113)	16,376					
Plan fiduciary net position - beginning	\$ 352,888	\$ 343,920	\$ 318,885	\$ 310,719	\$ 329,832	\$ 313,456					
Plan fiduciary net position - ending (b)	\$ 342,665	\$ 352,888	\$ 343,920	\$ 318,885	\$ 310,719	\$ 329,832					
Net pension liability (asset) - ending (a) - (b)	\$ 288,330	\$ 267,487	\$ 264,339	\$ 278,951	\$ 249,473	\$ 225,421					
Plan fiduciary net position as a percentage of the total pension liability	54.31%	56.88%	56.54%	53.34%	55.47%	59.40%					
Covered payroll*	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX					
Net pension liability (asset) as a percentage of covered payroll	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%					

*Employer's covered payroll during the measurement period is the total covered payroll. For FY2020 the measurement period is October 1, 2019 – September 30, 2020.

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years for which information is available.



SCHEDULE OF EMPLOYER CONTRIBUTIONS
Last 10 Fiscal Years Ending September 30
STATE EMPLOYEES

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Actuarially determined contribution*	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX				
Contributions in relation to the actuarially determined contribution*	X,XXX	X,XXX	X,XXX	X,XXX	X,XXX	X,XXX				
Contribution deficiency (excess)	\$0	\$0	\$0	\$0	\$0	\$0				
Covered payroll**	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX				
Contributions as a percentage of covered payroll	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%				

*The amount of employer contributions related to normal and accrued liability components of employer rate net of any refunds or error service payments. The Schedule of Employer Contributions is based on the 12 month period of the underlying financial statement.

**Employer's covered payroll for FY2020 is the total covered payroll for the 12 month period of the underlying financial statement.

Notes to Schedule

Actuarially determined contribution rates are calculated as of September 30, three years prior to the end of the fiscal year in which contributions are reported. Contributions for fiscal year 2020 were based on the September 30, 2017 actuarial valuation.

Methods and assumptions used to determine contribution rates for the period October 1, 2019 to September 30, 2020*:

Actuarial cost method	Entry Age
Amortization method	Level percent closed
Remaining amortization period	28.9 years
Asset valuation method	Five year smoothed market
Inflation	2.75%
Salary increases	3.25 – 5.00%, including inflation
Investment rate of return	7.75%, net of pension plan investment expense, including inflation

*If the employer's financial reporting period end is other than September 30, 2020, additional assumptions should be reported for the basis of determining the portion of the contribution prior to or subsequent to this period.

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years for which information is available.



SCHEDULE OF EMPLOYER CONTRIBUTIONS
Last 10 Fiscal Years Ending September 30
STATE POLICE

	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011
Actuarially determined contribution*	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX				
Contributions in relation to the actuarially determined contribution*	X,XXX	X,XXX	X,XXX	X,XXX	X,XXX	X,XXX				
Contribution deficiency (excess)	\$0	\$0	\$0	\$0	\$0	\$0				
Covered payroll**	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX	\$X,XXX				
Contributions as a percentage of covered payroll	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%	X.XX%				

*The amount of employer contributions related to normal and accrued liability components of employer rate net of any refunds or error service payments. The Schedule of Employer Contributions is based on the 12 month period of the underlying financial statement.

**Employer's covered payroll for FY2020 is the total covered payroll for the 12 month period of the underlying financial statement.

Notes to Schedule

Actuarially determined contribution rates are calculated as of September 30, three years prior to the end of the fiscal year in which contributions are reported. Contributions for fiscal year 2020 were based on the September 30, 2017 actuarial valuation.

Methods and assumptions used to determine contribution rates for the period October 1, 2019 to September 30, 2020*:

Actuarial cost method	Entry Age
Amortization method	Level percent closed
Remaining amortization period	28.8 years
Asset valuation method	Five year smoothed market
Inflation	2.75%
Salary increases	4.50%, including inflation
Investment rate of return	7.75%, net of pension plan investment expense, including inflation

*If the employer's financial reporting period end is other than September 30, 2020, additional assumptions should be reported for the basis of determining the portion of the contribution prior to or subsequent to this period.

This schedule is presented to illustrate the requirement to show information for 10 years. However, until a full 10-year trend is compiled, governments should present information for those years for which information is available.



SCHEDULE B
SUMMARY OF BENEFIT PROVISIONS EVALUATED

The Employees' Retirement System of Alabama was established on October 1, 1945. The valuation took into account amendments to the System effective through the valuation date. The following summary describes the main benefit and contribution provisions of the System as interpreted for the valuation.

1 – DEFINITIONS

Average Final Compensation – the average compensation of a member for:

- Tier 1 - the 3 highest years in the last 10 years of creditable service
- Tier 2 - 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 previous 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 the accumulated contributions of an employer.

Retirement Allowance – the sum of the annuity and pension payments.

2 - BENEFITS

MEMBERS CLASSIFIED OTHER THAN STATE POLICEMEN

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, (except for employees of local employers who did not elect 25-year retirement), 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 his creditable service. At retirement, a member receives one additional year of creditable service in determining the retirement allowance for each five years of service as a full-time certified firefighter, police officer or correctional officer.
- Tier II
Upon service retirement a member receives a retirement allowance equal to 1.65% of the member's average final compensation multiplied by the number of years of creditable service. The benefit is capped at 80% of the member's average final compensation.

Disability Retirement Allowance

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

Amount of Allowance

- Tier I
Upon 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 his 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.

Benefits Payable on Separation from Service

Any member who withdraws from service is entitled to receive a return of member 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 as defined below under “Special Privileges at Retirement – All Employees” or (2) to receive a return of member contributions and total interest earned 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 fiscal year (October 1 – September 30).*

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

In the event of a job-related death of a member at any age with less than 1 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 death occurs.*

In the event of a non job-related death of a member with less than 1 year of service, the beneficiary shall receive the return of member contributions and total interest earned plus a matching death benefit which is limited to a maximum of \$5,000.

* 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.

Deferred Retirement Option Plan (DROP)

A member may elect to participate in the Deferred Retirement Option Plan (DROP) upon completion of at least 25 years of service (at least 30 years for employers that did not elect 25 year retirement) of creditable service (excluding sick leave) and attainment of at least 55 years of age. Under the DROP, the member may defer receipt of a retirement allowance and continue employment for a period not to exceed five years, nor to be less than three years. At the end of this period, the



member may withdraw from active service and receive the retirement benefit based on his or her years of service credit 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.

As a result of Act 2011-27 no new participants were allowed to enter DROP with an effective participation date after June 1, 2011.

Member Contributions

Tier I

Prior to October 1, 2011, regular members contributed 5.0% of salary. Full-time 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 full-time certified police officers, firefighters and correctional officers, for all State employees and for local employees whose employers elect to do so.

Beginning October 1, 2012, the contribution rates were increased to 7.50% for regular members and 8.50% for full-time certified police officers, firefighters and correctional officers, for all State employees and for local employees whose employers elect to do so.

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 36-27-16.3(c)(1)).



MEMBERS CLASSIFIED AS STATE POLICEMEN

Service Retirement Allowance

Condition for Allowance

Tier I

Members hired prior to January 1, 2015: A retirement allowance is payable upon the request of any member who has completed 25 years of creditable service or who has attained age 52 and completed at least 10 years of creditable service.

Members hired after January 1, 2015: 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 56 and completed at least 10 years of creditable service.

Amount of Allowance

Tier I

Members hired prior to January 1, 2015: Upon service retirement a member receives a retirement allowance equal to 2.875% of the member's average final compensation multiplied by the number of years of his creditable service.

A member who has attained 20 or more years of creditable service and retires prior to age 60 is eligible to receive a "bonus service credit" up to 4 years as follows:

- Age 56 or older – bonus service of 4 years reduced by 1 month for each month over the age of 56.
- Age 52 to 56 – bonus service of 4 years.
- Age 52 or less (disability retirement only) – bonus service of 4 years.
- Age 52 or less with 25 or more years of service – bonus service of 4 years.

Members hired after January 1, 2015: 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 his 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 an officer.



Tier II
Members hired prior to January 1, 2015: Upon service retirement a member receives a retirement allowance equal to 2.375% of the member's average final compensation multiplied by the number of years of his creditable service. The benefit is capped at 80% of the member's average final compensation.

Members hired after January 1, 2015: 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 his creditable service. The benefit is capped at 80% of the member's average final compensation.

Disability Retirement Allowance

Condition for Allowance
A disability retirement allowance may be granted to a member who has 10 or more years of creditable service or who becomes disabled as a result of his employment in line of duty without regard to his years of creditable service, and who becomes permanently incapacitated, mentally or physically, for the further performance of duty before reaching the minimum age for service retirement.

Amount of Allowance

Tier I
Members hired prior to January 1, 2015: Upon retirement for disability, a member receives a retirement allowance equal to 2.875% of the member's average final compensation multiplied by the number of years of his creditable service.

Members hired after January 1, 2015: Upon 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 his 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 officer.

Tier II
Members hired prior to January 1, 2015: Upon retirement for disability, a member receives a retirement allowance equal to 2.375% of the member's average final compensation multiplied by the number of years of his creditable service. The benefit is capped at 80% of the member's average final compensation.

Members hired after January 1, 2015: Upon retirement for disability, a member receives a retirement allowance equal to 1.65% of the member's average final compensation



multiplied by the number of years of his creditable service. The benefit is capped at 80% of the member's average final compensation.

Benefits Payable on
Separation from Service

Any member who withdraws from service is entitled to receive a return of member 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 52 (age 56 for Tier II members).

Benefits Payable upon
Death in Active Service

In the event of the death of a member who is eligible for service retirement, the designated beneficiary may elect: (1) to exercise option 3 as defined below under "Special Privileges at Retirement – All Employees" or (2) to receive a return of member contributions and total interest earned 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 fiscal year (October 1 – September 30).*

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

In the event of a job-related death of a member at any age with less than 1 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 death occurs.*

In the event of a non job-related death of a member with less than 1 year of service, the beneficiary shall receive the return of member contributions and total interest earned plus a matching death benefit which is limited to a maximum of \$5,000.

* 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.



Deferred Retirement Option Plan (DROP)

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 52 years of age. Under the DROP, the member may defer receipt of a retirement allowance and continue employment for a period not to exceed five years, nor to be less than three years. At the end of this period, the member may withdraw from active service and receive the retirement benefit based on his or her years of service credit at the time of enrollment in the DROP, and also receive a payment for the deferred retirement benefits, employee contributions while participating in the DROP, and interest earned on DROP deposits.

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

Member Contributions

Tier I

Members hired prior to January 1, 2015: Each member contributes 10% of salary. DROP participants continue to contribute during the DROP period, but receive a refund of these contributions with interest upon retirement.

Members hired after January 1, 2015: Each member contributes 8.5% of salary.

Tier II

Members hired prior to January 1, 2015: Each member contributes 10% of salary. DROP participants continue to contribute during the DROP period, but receive a refund of these contributions with interest upon retirement.

Members hired after January 1, 2015: Each member contributes 7% of salary.

3 - SPECIAL PRIVILEGES AT RETIREMENT – ALL MEMBERS

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 the annuity payments equal or exceed the present value of the member's annuity at the date of retirement, the balance is paid to a designated beneficiary or to the 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 the designated beneficiary 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.



SCHEDULE C

STATEMENT OF ACTUARIAL ASSUMPTIONS AND METHODS

The assumptions and methods used in the valuation were selected based on the actuarial experience study prepared as of September 30, 2017, submitted to and adopted by the Board on September 29, 2017.

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:

STATE AND LOCAL EMPLOYEES

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

**Includes wage inflation at 3.00% per annum.*

STATE POLICEMEN

4.50% per year for all years of service, including wage inflation at 3.00% per annum.



SEPARATIONS FROM ACTIVE SERVICE- STATE AND LOCAL EMPLOYEES

TERMINATION: Representative values of the assumed annual rates of withdrawal are shown in the following tables:

REGULAR MEMBERS

Annual Rate of Withdrawal*
Years of Service

<u>Age</u>	<u>0-4</u>		<u>5-9</u>		<u>10-20</u>		<u>20+</u>	
	Male	Female	Male	Female	Male	Female	Male	Female
20	24.00%	33.00%	9.00%	12.00%	5.00%	6.50%	1.50%	1.50%
25	19.50	23.00	8.50	11.00	5.00	6.50	1.50	1.50
30	17.50	20.00	7.00	8.25	4.00	5.25	1.50	1.50
35	16.00	18.00	6.50	7.50	3.25	5.25	1.50	1.50
40	15.50	17.00	5.50	7.25	3.00	3.50	1.50	1.50
45	13.50	15.50	5.00	6.50	2.75	3.50	1.50	1.50
50	13.00	14.50	5.00	6.25	2.50	3.50	1.50	1.50
55	11.50	14.00	5.00	5.50	2.50	3.50	1.50	1.50
60	11.50	15.00	5.50	6.00	2.50	3.50	1.50	1.50
65	15.50	16.00	7.50	8.50	2.75	3.50	1.50	1.50
69	15.50	16.00	7.50	8.50	2.75	3.50	1.50	1.50

There are no withdrawal decrements after eligibility for service retirement.

CERTIFIED FIREFIGHTERS, POLICE OFFICERS, OR CORRECTIONAL OFFICERS (FLC MEMBERS)

Annual Rate of Withdrawal*
Years of Service

<u>Age</u>	<u>0-4</u>	<u>5-9</u>	<u>10-20</u>	<u>20+</u>
20	17.00%	6.50%	3.25%	1.25%
25	14.50	6.50	3.25	1.25
30	13.50	6.00	3.25	1.25
35	13.50	5.50	3.25	1.25
40	13.00	5.00	2.50	1.25
45	12.50	4.50	2.25	1.25
50	11.00	4.50	2.25	1.25
55	10.00	4.50	2.00	1.25
60	12.00	5.50	2.00	1.25
65	17.00	6.00	2.00	1.25
69	17.00	6.00	2.00	1.25

There are no withdrawal decrements after eligibility for service retirement.

* For local employers with fewer than 25 employees the rates are multiplied by 50%.



SERVICE RETIREMENT: The assumed annual rates of service retirement are as follows:

REGULAR MEMBERS

Age	Annual Rate ¹			
	TIER I ²		TIER II	
	<u>1ST Eligible</u>	<u>Subsequent</u>	<u>1ST Eligible</u>	<u>Subsequent</u>
50 & Under	18.00%	11.50%		
51 to 56	20.00	11.50		
57	25.00	11.50		
58 to 59	25.00	15.00		
60	13.00	17.00		
61	13.00	13.00		
62	25.00	25.00	50.00%	
63	25.00	20.00	25.00	20.00%
64	25.00	20.00	25.00	20.00
65	35.00	25.00	35.00	25.00
66	35.00	30.00	35.00	30.00
67	35.00	25.00	35.00	25.00
68	35.00	21.00	35.00	21.00
69 to 74	35.00	21.00	35.00	20.00
75 & Above	100.00	100.00	100.00	100.00

¹For local employers with fewer than 25 employees we assume that all members retire upon first eligibility for a service retirement benefit.

²25% are assumed to retire at age 60 with 25 years of service and 17% are assumed to retire at age 60 with 26 or more years of service.

FLC MEMBERS

Age	Annual Rate ¹			
	TIER I ²		TIER II	
	<u>1ST Eligible</u>	<u>Subsequent</u>	<u>1ST Eligible</u>	<u>Subsequent</u>
50 & Under	40.00%	25.00%		
51 to 55	40.00	20.00		
56	40.00	20.00	15.00%	15.00%
57 to 59	40.00	17.00	15.00	15.00
60	15.00	15.00	15.00	15.00
61	40.00	18.00	15.00	15.00
62	40.00	28.00	40.00	28.00
63	40.00	28.00	40.00	28.00
64	40.00	21.00	40.00	21.00
65	40.00	25.00	40.00	25.00
66	40.00	40.00	40.00	40.00
67 to 74	40.00	30.00	40.00	30.00
75 & Above	100.00	100.00	100.00	100.00

¹For local employers with fewer than 25 employees we assume that all members retire upon first eligibility for a service retirement benefit.

²40% are assumed to retire at age 60 with 25 years of service and 20% are assumed to retire at age 60 with 26 or more years of service.



DEATH AND DISABILITY: Representative values of the assumed annual rates of death and disability are as follows:

STATE EMPLOYEES

Age	Death		Annual Rate of Disability				
			Tier I			Tier II	
			Service < 25		Service >=25		
	Male	Female	Male	Female		Male	Female
20	0.023%	0.009%	0.060%	0.052%		0.060%	0.052%
25	0.025	0.010	0.090	0.074		0.090	0.074
30	0.029	0.012	0.117	0.100		0.117	0.100
35	0.051	0.022	0.151	0.187		0.151	0.187
40	0.071	0.033	0.405	0.372		0.405	0.372
45	0.099	0.053	0.630	0.559	0.250%	0.630	0.559
50	0.141	0.079	1.155	0.898	0.250	1.155	0.898
55	0.200	0.114	1.530	1.400	0.250	1.530	1.400
60	0.297	0.161	0.500	1.000	0.250	2.000	1.000
65	0.416	0.229	0.500	1.000	0.250	0.500	1.000
69	0.492	0.286					

LOCAL EMPLOYEES

Age	Death		Annual Rate of Disability				
			Tier I			Tier II	
			Service < 25		Service >=25		
	Male	Female	Male	Female		Male	Female
20	0.023%	0.009%	0.040%	0.040%		0.040%	0.040%
25	0.025	0.010	0.060	0.057		0.060	0.057
30	0.029	0.012	0.078	0.077		0.078	0.077
35	0.051	0.022	0.101	0.144		0.101	0.144
40	0.071	0.033	0.270	0.286		0.270	0.286
45	0.099	0.053	0.500	0.430	0.250%	0.500	0.430
50	0.141	0.079	0.900	0.691	0.250	0.900	0.691
55	0.200	0.114	1.400	1.000	0.250	1.400	1.000
60	0.297	0.161	0.500	0.250	0.250	2.000	1.000
65	0.416	0.229	0.500	0.250	0.250	0.500	0.250
69	0.492	0.286					



STATE POLICEMEN

MEMBERS HIRED BEFORE JANUARY 1, 2015

<u>Annual Rate of</u>								
<u>Death</u>			<u>Disability</u>	<u>Withdrawal Service</u>		<u>Retirement</u>		
<u>Age</u>	<u>Male</u>	<u>Female</u>		<u>0-4</u>	<u>5+</u>	<u>10-19</u>	<u>20-24</u>	<u>25+</u>
20	0.023%	0.009%	0.080%	2.00%	2.00%			
25	0.025	0.010	0.100	2.00	2.00			
30	0.029	0.012	0.140	2.00	2.00			
35	0.051	0.022	0.220	2.00	1.00			
40	0.071	0.033	0.340	2.00	1.00			40.00%
45	0.099	0.053	0.460	5.00	1.00			40.00
50	0.141	0.079	0.600					40.00
55	0.200	0.114				5.00%	35.00%	35.00
60	0.297	0.161				25.00	25.00	25.00
62	0.346	0.183				25.00	25.00	25.00
65	0.416	0.229				100.00	100.00	100.00

MEMBERS HIRED AFTER JANUARY 1, 2015

RATES OF WITHDRAWAL

<u>Annual Rate of Withdrawal</u>				
<u>Years of Service</u>				
<u>Age</u>	<u>0-4</u>	<u>5-9</u>	<u>10-20</u>	<u>20+</u>
20	17.00%	6.50%	3.25%	1.25%
25	14.50	6.50	3.25	1.25
30	13.50	6.00	3.25	1.25
35	13.50	5.50	3.25	1.25
40	13.00	5.00	2.50	1.25
45	12.50	4.50	2.25	1.25
50	11.00	4.50	2.25	1.25
55	10.00	4.50	2.00	1.25
60	12.00	5.50	2.00	1.25
65	17.00	6.00	2.00	1.25
69	17.00	6.00	2.00	1.25

There are no withdrawal decrements after eligibility for service retirement.



RATES OF SERVICE RETIREMENT

Age	Annual Rate			
	TIER I ¹		TIER II	
	<u>1ST Eligible</u>	<u>Subsequent</u>	<u>1ST Eligible</u>	<u>Subsequent</u>
50 & Under	40.00%	25.00%		
51 to 55	40.00	20.00		
56	40.00	20.00	15.00%	15.00%
57 to 59	40.00	17.00	15.00	15.00
60	15.00	15.00	15.00	15.00
61	40.00	18.00	15.00	15.00
62	40.00	28.00	40.00	28.00
63	40.00	28.00	40.00	28.00
64	40.00	21.00	40.00	21.00
65	40.00	25.00	40.00	25.00
66	40.00	40.00	40.00	40.00
67 to 74	40.00	30.00	40.00	30.00
75 & Above	100.00	100.00	100.00	100.00

¹ 40% are assumed to retire at age 60 with 25 years of service and 20% are assumed to retire at age 60 with 26 or more years of service.

RATES OF DEATH AND DISABILITY

Age	Annual Rate of						
	Death		Disability				
			Tier I		Tier II		
			Service < 25	Service >=25			
Male	Female	Male	Female		Male	Female	
20	0.023%	0.009%		0.052%		0.060%	0.052%
25	0.025	0.010	0.060%	0.074		0.090	0.074
30	0.029	0.012	0.090	0.100		0.117	0.100
35	0.051	0.022	0.117	0.187		0.151	0.187
40	0.071	0.033	0.151	0.372		0.405	0.372
45	0.099	0.053	0.405	0.559	0.250%	0.630	0.559
50	0.141	0.079	0.630	0.898	0.250	1.155	0.898
55	0.200	0.114	1.155	1.400	0.250	1.530	1.400
60	0.297	0.161	1.530	1.000	0.250	2.000	1.000
65	0.416	0.229	0.500	1.000	0.250	0.500	1.000
69	0.492	0.286	0.500				



DEATH AFTER RETIREMENT: The rates of mortality for the period after service retirement are according to the sex distinct RP-2000 Blue Collar Mortality Table Projected with Scale BB to 2020 with an adjustment of 125% at all ages for males and 120% for females at ages on and after age 78. The rates of mortality for the period after disability retirement are according to the sex distinct RP-2000 Disabled Retiree Mortality Table Projected with Scale BB to 2020 with an adjustment of 130% at all ages 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	0.4939%	0.2528%	3.3375%	1.9456%
60	0.8983	0.4048	3.6532	2.3221
65	1.5257	0.8167	3.9411	2.8618
70	2.4722	1.4637	4.6257	3.8430
75	3.9850	2.4262	6.0659	5.3334
80	6.5180	4.6142	8.0841	7.3840
85	10.6322	7.8329	10.4664	10.2321
90	18.2107	13.1471	14.7009	14.5932

DEATH IN ACTIVE SERVICE BENEFIT: For those eligible for service retirement who die in active service, it is assumed that 75% of beneficiaries will elect the lump sum death benefit and 25% will elect the Option 3 allowance.

BENEFITS PAYABLE UPON SEPARATION FROM SERVICE: For active members who separate from service prior to eligibility for a service retirement allowance, the liability is assumed to be the greater of the value of the refund of contributions and the value of the deferred annuity.

UNUSED SICK LEAVE: 2.25% load on service retirement liabilities for active members (No load for Tier II members).

PERCENT MARRIED: 100% of employees are assumed to be married, with the wife 3 years younger than the husband.

ACTUARIAL METHOD: Individual entry age normal cost method. Actuarial gains and losses are reflected in the unfunded actuarial accrued liability.

ASSET METHOD: Market value.

LIABILITY FOR CURRENT INACTIVE MEMBERS: Member Contribution Balance is multiplied by a factor of 3.0 for vested local employees with incomplete data and by a factor of 1.0 for all non-vested 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.