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EMPLOYEES' RETIREMENT SYSTEM OF GEORGIA

GEORGIA EMPLOYEES'
GROUP TERM LIFE INSURANCE PLAN
FOR PRE-RETIREMENT BENEFITS

REPORT OF THE ACTUARY ON THE VALUATION
PREPARED AS OF JUNE 30, 2020

Cavanaugh Macdonald
CONSULTING, LLC
The experience and dedication you deserve

April 15, 2021

Board of Trustees
Employees' Retirement System of Georgia
Two Northside 75, Suite 300
Atlanta, GA 30318-7701

Attention: Mr. James A. Potvin, Executive Director

Members of the Board:

Chapters 47-2 and 47-19 of the Code of Georgia which govern the operation of the Georgia Employees' Group Term Life Insurance Plan provide that the actuary shall make periodic valuations of the contingent assets and liabilities of the Insurance Plan on the basis of regular interest and the tables last adopted by the Board of Trustees. In this report, we have determined liabilities for life insurance benefits payable upon death in active service (Pre-Retirement).

We have submitted the report giving the results of the valuation of the Plan prepared as of June 30, 2020. The report indicates that employee contributions at the rate of 0.05% of active payroll for Old Plan members of the Employees' Retirement System, and 0.02% of active payroll for New Plan members of the Employees' Retirement System, certain members of the Legislative Retirement System and certain members of the Judicial Retirement System are sufficient to support the pre-retirement benefits of the Plan. No employer contribution is required for the fiscal year ending June 30, 2023 for pre-retirement benefits.

Since the previous valuation, various economic and demographic assumptions and actuarial methods have been revised to reflect the results of the experience investigation for the five-year period ending June 30, 2019.

In preparing the valuation, the actuary relied on data provided by the Plan. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. Our firm, as actuary, is responsible for all of the actuarial trend data in the financial section of the annual report and the supporting schedules in the actuarial section of the annual report.

In our opinion, the valuation is complete and accurate, and the methodology and assumptions are reasonable as a basis for the valuation. The valuation takes into account the effect of all amendments to the Plan enacted through the 2020 session of the General Assembly.

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Effective with the June 30, 2017 valuation, the assumed rate of return will be reduced by 0.10% (10 basis points) from the immediate prior actuarial valuation, as long as the actual rate of return for the fiscal year ending with the current valuation date exceeds the assumed rate of return from the immediate prior actuarial valuation. The assumed rate of return may not decrease below 7.00% net of investment expenses. Since the actual rate of return for the year ending June 30, 2020 was less than 7.30%, the assumed rate of return used in the current valuation remained at 7.30%.

The System is funded on an actuarial reserve basis. The actuarial assumptions recommended by the actuary and adopted by the Board are in the aggregate reasonably related to the experience under the System and to reasonable expectations of anticipated experience under the System. The assumptions and methods used for financial reporting purposes meet the parameters set by Actuarial Standards of Practice (ASOPs). The funding objective of the plan is that contribution rates over time will remain level as a percent of payroll. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a level percent of payroll. Gains and losses are reflected in the total unfunded accrued liability which is being amortized on a level dollar basis in accordance with the funding policy adopted by the Board. In our opinion, the Plan is operating on an actuarially sound basis and the sufficiency of the funds to provide the benefits called for by the Plan may be safely anticipated.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the Plan.

We note that as we are preparing this report, the world is in the midst of a pandemic. We have considered available information, but do not believe that there is yet sufficient data to warrant the modification of any of our assumptions prior to the upcoming experience study.

In order to prepare the results in this report, we have utilized appropriate actuarial models that were developed for this purpose. These models use assumptions about future contingent events along with recognized actuarial approaches to develop the needed results.

Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

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

Sincerely yours,

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

Cathy Turcot
Principal and Managing Director

Ben Mobley, ASA, FCA, MAAA
Consulting Actuary

Table of Contents

Section I – Summary of Principal Results

1. For convenience of reference, the principal results of the valuation and a comparison with the preceding year's results are summarized below:

Valuation Date	June 30, 2020	June 30, 2019
Active members:		
Number	21,144	23,499
Annual compensation	$ 1,138,881,646	$ 1,213,173,877
Retired members:		
Number	N/A	N/A
Insurance amount	N/A	N/A
Actuarial Accrued Liability	$ 8,913,647	$ 14,083,413
Fair Value of Assets	$ 319,340,000	$ 305,877,000
Valuation Interest Rate	7.30%	7.30%
Unfunded Actuarial Accrued Liability	$ (310,426,353)	$ (291,793,587)
Funding Period	N/A*	N/A*
Funded Ratio based on Fair Value of Assets	3,582.6%	2,171.9%
Contributions for Fiscal Year Ending	**June 30, 2023**	**June 30, 2022**
Actuarially Determined Employer Contribution (ADEC) rates:		
Total Normal Rate	0.10%**	0.15%**
Employee Rates:		
Old Plan Members	0.05%***	0.05%***
New Plan, LRS and JRS Members	0.02%	0.02%
Employer Normal Rate	0.08%	0.13%
Accrued Liability Rate	(0.08)%	(0.13)%
Total Employer Rate	0.00%	0.00%

* If the unfunded actuarial accrued liability is amortized in accordance with the Board's funding policy, the ADEC is less than $0, which is not allowed under the funding policy. Therefore, the accrued liability contribution rate has been set to such that the total ADEC equals $0.

** The normal contribution rate includes administrative expenses.

*** 0.03% paid by employer.

2. We have determined liabilities separately for life insurance benefits payable upon death in active service (pre-retirement) and those payable upon death after retirement (post-retirement). Separate trusts for pre-retirement life insurance benefits and post-retirement life insurance benefits were established and assets were split during 2007.

3. The major benefit and contribution provisions of the Plan as reflected in the valuation are summarized in Schedule G. The valuation takes into account the effect of amendments of the System enacted through the 2020 session of the General Assembly.

4. Schedule C of this report outlines the full set of actuarial assumptions and methods used in the valuation. Since the previous valuation, various economic and demographic assumptions and actuarial methods have been revised to reflect the results of the experience investigation for the five-year period ending June 30, 2019. These revised assumptions were adopted by the Board on December 17, 2020.

5. Effective with the June 30, 2017 valuation, the funding policy states that the long-term annual expected return on assets assumption shall be reduced by 0.10% per year from the immediate prior valuation when the actual rate of return for the fiscal year exceeds the assumed rate. The minimum return assumption stated in the funding policy is 7.00%. The Board policy will continue to require a reduction in the rate of return used in future valuations until a 7.00% return, which is now the long-term annual expected rate of return assumption recommended in the latest experience study, is achieved. The asset return assumption used in the prior actuarial valuation was 7.30%. Since the actual rate of return for the year ending June 30, 2020 was less than 7.30%, the assumed rate of return used in the current valuation remained at 7.30%. Schedule E of this report outlines the funding policy.

6. Comments on the valuation results as of June 30, 2020 are given in Section IV and further discussion of the contribution levels is set out in Section V.

7. We have prepared the Solvency Test for the Plan's Comprehensive Annual Financial Report. This table is shown in Schedule H.

Section II – Membership Data

Data regarding the membership of the System for use as a basis for the valuation were furnished by the Retirement System office. The following table shows the number of active members and their annual compensation as of June 30, 2020 on the basis of which the valuation was prepared.

THE NUMBER AND ANNUAL COMPENSATION OF ACTIVE MEMBERS AS OF JUNE 30, 2020

GROUP	NUMBER	ANNUAL COMPENSATION
ERS Old Plan	29	$ 2,414,622
ERS New Plan	20,850	1,110,282,100
Legislative Retirement System	64	1,109,868
Judicial Retirement System	201	25,075,056
Total	21,144	$ 1,138,881,646

Section III – Assets

1. In 2007, separate trusts were established for pre-retirement life insurance benefits and for post-retirement life insurance benefits and assets were split based on actuarial accrued liabilities. Assets in excess of what were actuarially required were transferred to ERS Survivor Benefit Fund.
2. As of June 30, 2020, the total fair value of pre-retirement assets amounted to $319,340,000 as reported by the independent auditor of the Plan. The fair value of assets is used for the June 30, 2020 valuation.
3. Schedule B shows receipts and disbursements of the System for the two years preceding the valuation date and a reconciliation of the fund balances at fair value.

Section IV – Comments of Valuation

1. Schedule A of this report outlines the results of the actuarial valuation for pre-retirement life insurance benefits. The valuation was prepared in accordance with the actuarial assumptions set forth in Schedule C.
2. The valuation shows that the Plan has an actuarial accrued liability of $8,913,647 for benefits expected to be paid on account of death while in active membership. Against these liabilities, the Plan has present assets for valuation purposes of $319,340,000. Therefore, the unfunded actuarial accrued liability is equal to ($310,426,353).
3. The funding policy adopted by the Board, as shown in Schedule E, provides that the unfunded actuarial accrued liability as of June 20, 2013 (Transitional UAAL) will be amortized as a level dollar amount over a closed 20-year period. In each subsequent valuation all benefit changes, assumption and method changes and experience gains and/or losses that have occurred since the previous valuation will determine a New Incremental UAAL. Each New Incremental UAAL will be amortized as a level dollar amount over a closed 20-year period from the date it is established.
4. The total UAAL contribution rate is (3.06)% of payroll, determined in accordance with the Board's funding policy. However, since this payment would cause the total employer contribution to be less than $0, the final UAAL contribution rate is determined to be (0.08)%.
5. Schedule F of this report shows the amortization schedules for the Transitional UAAL and the New Incremental UAALs.

Section IV – Comments of Valuation

6. The following table shows the components of the total UAAL and the derivation of the UAAL contribution rate in accordance with the funding policy:

TOTAL UAAL AND UAAL CONTRIBUTION RATE

	Remaining Balance UAAL	Remaining Amortization Period (years)	Amortization Payment
Transitional	$(133,116,850)	13	$(16,199,456)
New Incremental 6/30/2014	(29,997,020)	14	(3,491,974)
New Incremental 6/30/2015	(21,146,274)	15	(2,365,933)
New Incremental 6/30/2016	(11,054,370)	16	(1,193,556)
New Incremental 6/30/2017	(30,392,488)	17	(3,177,944)
New Incremental 6/30/2018	(28,920,098)	18	(2,937,574)
New Incremental 6/30/2019	(26,480,943)	19	(2,620,040)
New Incremental 6/30/2020	(29,318,311)	20	(2,832,298)
Total UAAL	$(310,426,354)		$(34,818,775)
Estimated Payroll			$1,138,881,646
Calculated UAAL Contribution Rate			(3.06)%
Final UAAL Contribution Rate*			(0.08)%
Blended Amortization Period*			N/A

* If the unfunded actuarial accrued liability is amortized in accordance with the Board's funding policy, the ADEC is less than $0, which is not allowed under the funding policy. Therefore, the accrued liability contribution rate has been set to such that the total ADEC equals $0.

Section V – Contributions

1. The contribution rate of employers consists of a normal contribution rate and an accrued liability contribution rate.
2. The normal contribution rate is calculated as the level dollar which, if applied to each member during the entire period of anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on behalf of the member. The normal contribution rate is determined to be 0.09% of payroll for pre-retirement benefits.
3. An additional $80,000 or 0.01% of payroll is required to fund the administrative expenses of the System.
4. The total normal contribution rate including administrative expenses is therefore, 0.10% of payroll.
5. The member contribution rate made by or on behalf of ERS Old Plan members is 0.05% of payroll and the member contribution rate made by ERS New Plan members, certain LRS members and certain JRS members is 0.02% of payroll. The employer normal contribution rate is determined to be 0.08% of payroll for pre-retirement benefits.
6. If the unfunded accrued liability is amortized in accordance with the funding policy the total employer contribution rate would be less than 0%. Since the funding policy also states that the total employer contribution rate cannot be less than 0%, the accrued liability contribution rate for pre-retirement benefits is set equal to (0.08%) of active members' payroll and there is no required contribution for the pre-retirement benefits.

Section VI – Accounting Information

The following is provided for informational purposes.

1. The schedule of funding progress is shown below.

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Fair Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
6/30/2015	$ 240,677,000	$ 21,723,473	$ (218,953,527)	1,107.9%	$ 1,521,740,814	(14.4)%
6/30/2016	240,985,000	15,610,355	(225,374,645)	1,543.8	1,442,023,957	(15.6)
6/30/2017*	267,286,000	15,677,189	(251,608,801)	1,704.9	1,394,394,570	(18.0)
6/30/2018*	289,207,000	15,172,626	(274,034,374)	1,906.1	1,323,540,523	(20.7)
6/30/2019	305,877,000	14,083,413	(291,793,587)	2,171.9	1,213,173,877	(24.1)
6/30/2020#	319,340,000	8,913,647	(310,426,353)	3,582.6	1,138,881,646	(27.3)

* Reflects change in assumed rate of return
\# Reflects change in actuarial assumptions

2. The information presented in the required supplementary schedules was determined as part of the actuarial valuation on June 30, 2020. Additional information as of the latest actuarial valuation follows.

Valuation date	6/30/2020
Actuarial cost method	Entry age
Amortization method	Level dollar open
Remaining amortization period	N/A*
Asset valuation method	Fair Value of Assets
Actuarial assumptions:	
Investment Rate of Return**	7.30%
Projected Salary Increases	
ERS**	3.00 – 6.75%
JRS**	3.75%
LRS	N/A

* The remaining amortization period is infinite.
** Includes inflation at 2.50%.

Schedule A – Valuation Results

(1)	**ACTUARIAL ACCRUED LIABILITY FOR:**	
	Benefits payable on account of present retired members	$ 0
	Benefits payable on account of present active members	8,913,647
	TOTAL ACTUARIAL ACCRUED LIABILITY	$ 8,913,647
(2)	**PRESENT ASSETS FOR VALUATION PURPOSES:**	$ 319,340,000
(3)	**UNFUNDED ACTUARIAL ACCRUED LIABILITY: (1)-(2)**	$ (310,426,353)
(4)	**EMPLOYER NORMAL CONTRIBUTION RATE:**	0.08%
(5)	**ACCRUED LIABILITY CONTRIBUTION:**	(0.08)
(6)	**TOTAL EMPLOYER CONTRIBUTION: (4)+(5)**	0.00%

Schedule B – Summary of Receipts and Disbursements

FAIR VALUE OF ASSETS

	YEAR ENDING	
Receipts for the Year	**June 30, 2020**	**June 30, 2019**
Insurance Premiums	$ 547,000	$ 531,000
Investment Earnings	16,584,000	19,643,000
TOTAL	$ 17,131,000	$ 20,174,000
Disbursements for the Year		
Death Benefits	$ 3,588,000	$ 3,424,000
Administration Expense	80,000	80,000
TOTAL	$ 3,668,000	$ 3,504,000
Excess of Receipts over Disbursements	$ 13,463,000	$ 16,670,000
Reconciliation of Asset Balances		
Asset Balance as of the Beginning of Year	$ 305,877,000	$ 289,207,000
Excess of Receipts over Disbursements	13,463,000	16,670,000
Asset Balance as of the End of Year	$ 319,340,000	$ 305,877,000
Rate of Return*	5.4%	6.8%

* Calculated assuming cash flow occurs in the middle of the year

Schedule C – Outline of Actuarial Assumptions and Methods

Actuarial assumptions and methods adopted by the Board December 17, 2020. Valuation interest rate adopted by the Board March 15, 2018.

VALUATION INTEREST RATE: 7.30% per annum, compounded annually, net of investment expenses, composed of a 2.50% inflation assumption and a 4.80% real rate of investment return assumption.

SALARY INCREASES: The assumed annual rates of salary increase are as follows:

Members of Employees' Retirement System (ERS)	
Service	**Rate**
1	6.75%
2	5.75
3	5.25
4	5.00
5	4.75
10	4.30
15	4.05
20	3.80
25	3.55
30	3.30
35 & Over	3.00

Members of Judicial Retirement System (JRS): 3.75%

No salary increases are assumed for members of the Legislative Retirement System (LRS).

SEPARATIONS BEFORE RETIREMENT: Representative values of the assumed annual rates of separation other than retirement are as follows.

Annual Rates of Disability				
	ERS Members			
	Non-Law Enforcement		Law	JRS
Age	Males	Females	Enforcement	Members
25	0.000	0.000	0.000	0.0125
30	0.010	0.005	0.050	0.0250
35	0.040	0.010	0.125	0.0375
40	0.200	0.085	1.125	0.0500
45	0.375	0.215	2.625	0.0875
50	0.625	0.365	3.625	0.1250
55	0.875	0.565	4.125	0.2250
60	--	--	--	0.3625
65				0.5875

Annual Rates of Withdrawal ERS Members – Non-Law Enforcement			
	Years of Service		
Age	0-4	5-9	10 & Over
		Males	
20	40.00%		
25	30.00	16.25%	
30	25.00	12.50	8.00%
35	23.00	10.50	6.25
40	20.00	9.50	4.75
45	20.00	8.50	4.00
50	17.00	7.25	4.50
55	15.00	6.75	4.75
60	14.50	5.50	--
65	14.50	12.50	
		Females	
20	35.00%		
25	27.00	18.00%	
30	23.00	12.50	9.00%
35	20.00	10.25	6.50
40	18.00	9.00	5.25
45	17.00	8.00	4.25
50	16.00	7.50	4.25
55	15.00	7.25	4.25
60	15.50	7.00	--
65	16.50	12.00	

Annual Rates of Withdrawal				
	ERS Members - Law Enforcement		LRS	JRS
Age	0-9	10 & Over	Members	Members
20	11.00%		9.00%	5.00%
25	6.50	3.00%	9.00	5.00
30	5.25	3.00	9.00	5.00
35	5.25	3.00	9.00	5.00
40	5.25	2.50	10.00	4.00
45	5.25	2.50	11.00	3.50
50	5.25	2.50	9.25	2.75
55	--	--	8.00	2.75
60			8.00	2.50
65			8.00	2.50

Schedule C – Outline of Actuarial Assumptions and Methods

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

ERS

Age	Non-Law Enforcement Old Plan							
	Early Retirement		Age 60 or 30 years		34 years		More than 34 years	
	Male	Female	Male	Female	Male	Female	Male	Female
50	2.0%	2.0%	7.5%	6.0%	100.0%	100.0%	90.0%	100.0%
52	2.0	2.0	7.5	6.0	100.0	100.0	90.0	100.0
55	3.0	3.5	7.5	10.0	100.0	100.0	75.0	90.0
57	3.0	5.0	10.5	10.0	100.0	100.0	70.0	70.0
60			15.0	20.0	97.5	95.0	40.0	55.0
62			32.0	40.0	97.5	95.0	40.0	65.0
65			35.0	40.0	35.0	40.0	35.0	40.0
67			35.0	35.0	35.0	35.0	35.0	35.0
70			35.0	35.0	35.0	35.0	35.0	35.0
75			100.0	100.0	100.0	100.0	100.0	100.0

Age	Non-Law Enforcement New Plan and GSEPS				Law Enforcement
	Early Retirement		Normal Retirement		
	Male	Female	Male*	Female**	
50	5.0%	3.8%	60.0%	42.0%	75.0%
52	5.0	3.8	50.0	42.0	60.0
55	6.0	5.8	50.0	40.0	15.0
57	6.0	7.3	45.0	37.0	15.0
60			25.0	28.0	30.0
62			37.5	37.5	35.0
65			32.0	33.0	25.0
67			32.0	32.0	25.0
70			30.0	30.0	100.0
75			100.0	100.0	

* An additional 20% are assumed to retire in the first year eligible for unreduced retirement with 30 years of service before age 60.

** An additional 25% for ages below 53 and 20% for ages 53 to 59 are assumed to retire in the first year eligible for unreduced retirement with 30 years of service before age 60.

Schedule C – Outline of Actuarial Assumptions and Methods

Annual Rates of Retirement		
Age	**LRS**	**JRS**
60	8%	15%
61	8	10
62	12	10
63 – 64	8	10
65	10	13
66 – 67	10	15
68	10	18
69	15	18
70 – 77	15	25
78 – 79	15	100
80	100	100

RATES OF DEATH BEFORE RETIREMENT: The Pub-2010 General Employee Table, with no adjustments, projected generationally with the MP-2019 scale is used for both males and females while in active service. Representative values of the assumed annual rates of mortality while in active service are as follows:

Annual Rates of Death*					
Age	**Males**	**Females**	**Age**	**Males**	**Females**
20	0.0370%	0.0130%	45	0.0980%	0.0560%
25	0.0280	0.0090	50	0.1490	0.0830
30	0.0360	0.0150	55	0.2190	0.1230
35	0.0470	0.0230	60	0.3190	0.1860
40	0.0660	0.0360	65	0.4680	0.2960

* Base mortality rates as of 2010 before application of the improvement scale

RATES OF DEATHS AFTER RETIREMENT: The Pub-2010 Family of Tables projected generationally with MP-2019 scale and with further adjustments are used for post-retirement mortality assumptions as follows:

Participant Type	Membership Table	Set Forward (+)/ Setback (-)	Adjustment to Rates
Service Retirees	General Healthy Annuitant	Male: +1; Female: +1	Male: 105%; Female: 108%
Disability Retirees	General Disabled	Male: -3; Female: 0	Male: 103%; Female: 106%
Beneficiaries	General Contingent Survivors	Male: +2; Female: +2	Male: 106%; Female: 105%

Schedule C – Outline of Actuarial Assumptions and Methods

Representative values of the assumed annual rates of mortality are as follows:

	Annual Rates of Death*					
	Service Retirement		Disability Retirement		Beneficiaries	
Age	Males	Females	Males	Females	Males	Females
50	0.3371%	0.2516%	1.2576%	1.5720%	0.7918%	0.3843%
55	0.4861	0.3251	1.8725	1.8465	0.9402	0.5334
60	0.6941	0.4493	2.3484	2.0734	1.1978	0.7529
65	1.0532	0.7366	2.7573	2.3914	1.7257	1.1057
70	1.7882	1.2863	3.4536	3.0337	2.7157	1.7000
75	3.1448	2.2799	4.4743	4.2432	4.3036	2.7500
80	5.6427	4.0900	6.0986	6.3674	6.8879	4.6778
85	10.0958	7.6043	8.8220	9.8909	11.3049	8.4315
90	16.9785	13.8596	12.9831	14.4849	18.6083	14.6496

* Base mortality rates as of 2010 before application of the improvement scale

ASSETS: Fair value of assets.

ACTUARIAL COST METHOD: Entry Age Normal Actuarial Cost Method. Actuarial gains and losses are reflected in the unfunded actuarial accrued liability (UAAL). See Schedule D for a brief description of this method.

ADMINISTRATIVE EXPENSES: Administrative expenses equal to $80,000 are added to the normal cost contribution.

Schedule D – Actuarial Cost Method

1. The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (currently 7.30%), of each member's expected benefits at death in active service is determined, based on age, service and sex. The calculations take into account the probability of a member's termination of employment, as well as the possibility of his terminating with a service, disability or survivor's benefit.
2. The employer contributions required to support the benefits of the System are determined following a level funding approach, and consist of a normal contribution and an unfunded actuarial accrued liability contribution.
3. The normal contribution is determined using the entry age actuarial cost method. Under this method, a calculation is made to determine the level amount which, if applied for the average member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.
4. The unfunded actuarial accrued liability contributions are determined by subtracting the present value of prospective employer normal contributions and member contributions, together with the current actuarial value of assets, from the present value of expected benefits to be paid from the System.

Schedule E – Funding Policy #1 of the SEAD Board of Directors

The purpose of this Funding Policy is to state the overall objectives for the Georgia Employees' Group Term Life Insurance Plan for Pre-Retirement Benefits (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. It is the intent of the State Employees' Assurance Department Board of Directors that the Funding Policy outlined herein will remain unchanged until the objectives below are met.

I. Funding Objectives

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

- To develop a pattern of contribution rates expressed as a percentage of employer payroll and measured by valuations prepared in accordance with applicable State laws and the principles of practice prescribed by the Actuarial Standards Board.
- To maintain a stable funded ratio (ratio of actuarial value of assets to actuarial accrued liabilities) that reflects a trend of strong actuarial condition. The long-term objective is to maintain at least a 100% funded ratio over a reasonable period of future years.
- To maintain adequate asset levels to finance the benefits promised to members and monitor the future demand for liquidity.
- To promote intergenerational equity for taxpayers with respect to contributions required for the benefits provided by the System.

II. Measures of Funding Progress

To track progress in achieving the System's funding objectives, the following measures will be determined annually as of the actuarial valuation date (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 remain stable over time, before adjustments for changes in benefits, actuarial methods, and/or actuarial adjustments. The target funded ratio will be 100 percent. In the event that the funded ratio falls below 100%, the targeted funded ratio will be 100% within 20 years of the date the funded ratio first falls below 100%.
- **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.
  - **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 valuations.
- **UAAL Amortization Period**
  - The transitional UAAL will be amortized over a closed 20 year period beginning on the initial valuation date for which this funding policy is adopted.
  - Each New Incremental UAAL shall be amortized over a closed 20 year period beginning with the year it is incurred.
- **Employer Contribution Rate**
  - **Employer Normal Contribution Rate** – the contribution rate determined as of the valuation date each year to fund the employer portion of the annual normal cost of the System based on the assumptions and methods adopted by the Board.
  - In each valuation subsequent to the adoption of this funding policy the required employer contribution rate will be determined as the summation of the employer Normal Contribution Rate, a contribution rate for administrative expenses, the amortization rate

  - for the Transitional UAAL and the individual amortization rate for each of the New Incremental UAAL bases.
  - In no event shall the employer contribution rate be less than 0%.
  - The valuation methodology, including the amortization of the Unfunded Actuarial Accrued Liability (UAAL), would be expected to maintain reasonably stable contribution rates as a dollar per active member.

III. Methods and Assumptions

The annual actuarial valuations providing the measures to assess funding progress will utilize the actuarial methods and assumptions last adopted by the Board based upon the advice and recommendations of the actuary. These include the following primary methods and assumptions:

- The actuarial cost method used to develop the benchmarks will be the Projected Unit Credit (PUC) actuarial cost method.
- The long-term annual investment rate of return assumption will be:
  - Effective with the June 30, 2013 valuation date, 7.50% net of investment expenses.
  - Effective with the June 30, 2017 valuation date, reduced by 0.10% (10 basis points) from the immediate prior actuarial valuation, as long as the following conditions are met:
    - The actual rate of return for the fiscal year ending with the current valuation date exceeds the assumed rate of return from the immediate prior actuarial valuation, and
    - The assumed rate of return does not decrease below 7.00% net of investment expenses.
- The actuarial value of assets will be equal to the market value of assets as of the valuation date.

The employer contribution rates determined in an annual actuarial valuation will be at least sufficient to satisfy the annual normal cost of the System and amortize the UAAL as a level dollar amount over a period not to exceed 20 years. However in no event shall the employer contribution rate be less than 0%.

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 recommended assumptions and methods. Any changes to the recommended assumptions and methods that are approved by the Board will be reflected in this Policy.

IV. Funding Policy Progress

The Board will periodically have actuarial projections of the valuation results performed to assess the current and expected future progress towards the overall funding goals of the System. These periodic projections will provide the expected valuation results over at least a 10-year period. The projected measures of funding progress and the recent historical trend provided in valuations will provide important information for the Board's assessment of the System's funding progress.

Adopted: March 15, 2018

Schedule F – Amortization of UAAL

TRANSITIONAL UAAL

Valuation Date	Amortization Period	Balance of Transitional UAAL	Expected UAAL Contribution
6/30/2013	20	$ (167,266,267)	$ (16,407,515)
6/30/2014	19	(163,403,722)	(16,407,515)
6/30/2015	18	(159,251,487)	(16,407,515)
6/30/2016	17	(154,787,834)	(16,407,515)
6/30/2017	16	(149,989,406)	(16,300,885)
6/30/2018	15	(144,787,738)	(16,199,456)
6/30/2019	14	(139,157,787)	(16,199,456)
6/30/2020	**13**	**(133,116,850)**	**(16,199,456)**
6/30/2021	12	(126,634,925)	(16,199,456)
6/30/2022	11	(119,679,819)	(16,199,456)
6/30/2023	10	(112,216,990)	(16,199,456)
6/30/2024	9	(104,209,375)	(16,199,456)
6/30/2025	8	(95,617,204)	(16,199,456)
6/30/2026	7	(86,397,804)	(16,199,456)
6/30/2027	6	(76,505,388)	(16,199,456)
6/30/2028	5	(65,890,826)	(16,199,456)
6/30/2029	4	(54,501,401)	(16,199,456)
6/30/2030	3	(42,280,547)	(16,199,456)
6/30/2031	2	(29,167,572)	(16,199,456)
6/30/2032	1	(15,097,349)	(16,199,456)
6/30/2033	0	0	0

Schedule F – Amortization of UAAL

2014 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2014	Expected UAAL Contribution
6/30/2014	20	$ (36,077,445)	$ (3,538,916)
6/30/2015	19	(35,244,338)	(3,538,916)
6/30/2016	18	(34,348,747)	(3,538,916)
6/30/2017	17	(33,385,988)	(3,514,898)
6/30/2018	16	(32,341,652)	(3,491,974)
6/30/2019	15	(31,210,619)	(3,491,974)
6/30/2020	**14**	**(29,997,020)**	**(3,491,974)**
6/30/2021	13	(28,694,828)	(3,491,974)
6/30/2022	12	(27,297,577)	(3,491,974)
6/30/2023	11	(25,798,326)	(3,491,974)
6/30/2024	10	(24,189,629)	(3,491,974)
6/30/2025	9	(22,463,498)	(3,491,974)
6/30/2026	8	(20,611,359)	(3,491,974)
6/30/2027	7	(18,624,015)	(3,491,974)
6/30/2028	6	(16,491,593)	(3,491,974)
6/30/2029	5	(14,203,506)	(3,491,974)
6/30/2030	4	(11,748,387)	(3,491,974)
6/30/2031	3	(9,114,046)	(3,491,974)
6/30/2032	2	(6,287,397)	(3,491,974)
6/30/2033	1	(3,254,403)	(3,491,974)
6/30/2034	0	0	0

Schedule F – Amortization of UAAL

2015 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2015	Expected UAAL Contribution
6/30/2015	20	$ (24,457,703)	$ (2,399,110)
6/30/2016	19	(23,892,921)	(2,399,110)
6/30/2017	18	(23,285,780)	(2,382,161)
6/30/2018	17	(22,626,767)	(2,365,933)
6/30/2019	16	(21,912,588)	(2,365,933)
6/30/2020	**15**	**(21,146,274)**	**(2,365,933)**
6/30/2021	14	(20,324,019)	(2,365,933)
6/30/2022	13	(19,441,739)	(2,365,933)
6/30/2023	12	(18,495,052)	(2,365,933)
6/30/2024	11	(17,479,258)	(2,365,933)
6/30/2025	10	(16,389,311)	(2,365,933)
6/30/2026	9	(15,219,797)	(2,365,933)
6/30/2027	8	(13,964,909)	(2,365,933)
6/30/2028	7	(12,618,414)	(2,365,933)
6/30/2029	6	(11,173,625)	(2,365,933)
6/30/2030	5	(9,623,366)	(2,365,933)
6/30/2031	4	(7,959,939)	(2,365,933)
6/30/2032	3	(6,175,081)	(2,365,933)
6/30/2033	2	(4,259,929)	(2,365,933)
6/30/2034	1	(2,204,970)	(2,365,933)
6/30/2035	0	0	0

Schedule F – Amortization of UAAL

2016 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2016	Expected UAAL Contribution
6/30/2016	20	$ (12,345,144)	$ (1,210,962)
6/30/2017	19	(12,060,068)	(1,202,082)
6/30/2018	18	(11,750,431)	(1,193,556)
6/30/2019	17	(11,414,656)	(1,193,556)
6/30/2020	**16**	**(11,054,370)**	**(1,193,556)**
6/30/2021	15	(10,667,783)	(1,193,556)
6/30/2022	14	(10,252,975)	(1,193,556)
6/30/2023	13	(9,807,886)	(1,193,556)
6/30/2024	12	(9,330,306)	(1,193,556)
6/30/2025	11	(8,817,862)	(1,193,556)
6/30/2026	10	(8,268,010)	(1,193,556)
6/30/2027	9	(7,678,019)	(1,193,556)
6/30/2028	8	(7,044,958)	(1,193,556)
6/30/2029	7	(6,365,684)	(1,193,556)
6/30/2030	6	(5,636,823)	(1,193,556)
6/30/2031	5	(4,854,755)	(1,193,556)
6/30/2032	4	(4,015,596)	(1,193,556)
6/30/2033	3	(3,115,179)	(1,193,556)
6/30/2034	2	(2,149,031)	(1,193,556)
6/30/2035	1	(1,112,354)	(1,193,556)
6/30/2036	0	0	0

Schedule F – Amortization of UAAL

2017 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2017	Expected UAAL Contribution
6/30/2017	20	$ (32,887,559)	$ (3,201,519)
6/30/2018	19	(32,119,720)	(3,177,944)
6/30/2019	18	(31,286,516)	(3,177,944)
6/30/2020	**17**	**(30,392,488)**	**(3,177,944)**
6/30/2021	16	(29,433,196)	(3,177,944)
6/30/2022	15	(28,403,875)	(3,177,944)
6/30/2023	14	(27,299,414)	(3,177,944)
6/30/2024	13	(26,114,327)	(3,177,944)
6/30/2025	12	(24,842,729)	(3,177,944)
6/30/2026	11	(23,478,305)	(3,177,944)
6/30/2027	10	(22,014,277)	(3,177,944)
6/30/2028	9	(20,443,375)	(3,177,944)
6/30/2029	8	(18,757,798)	(3,177,944)
6/30/2030	7	(16,949,173)	(3,177,944)
6/30/2031	6	(15,008,519)	(3,177,944)
6/30/2032	5	(12,926,197)	(3,177,944)
6/30/2033	4	(10,691,865)	(3,177,944)
6/30/2034	3	(8,294,427)	(3,177,944)
6/30/2035	2	(5,721,977)	(3,177,944)
6/30/2036	1	(2,961,737)	(3,177,944)
6/30/2037	0	0	0

Schedule F – Amortization of UAAL

2018 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2018	Expected UAAL Contribution
6/30/2018	20	$ (30,408,066)	$ (2,937,574)
6/30/2019	19	(29,690,281)	(2,937,574)
6/30/2020	**18**	**(28,920,098)**	**(2,937,574)**
6/30/2021	17	(28,093,691)	(2,937,574)
6/30/2022	16	(27,206,957)	(2,937,574)
6/30/2023	15	(26,255,491)	(2,937,574)
6/30/2024	14	(25,234,568)	(2,937,574)
6/30/2025	13	(24,139,118)	(2,937,574)
6/30/2026	12	(22,963,700)	(2,937,574)
6/30/2027	11	(21,702,476)	(2,937,574)
6/30/2028	10	(20,349,183)	(2,937,574)
6/30/2029	9	(18,897,100)	(2,937,574)
6/30/2030	8	(17,339,014)	(2,937,574)
6/30/2031	7	(15,667,188)	(2,937,574)
6/30/2032	6	(13,873,319)	(2,937,574)
6/30/2033	5	(11,948,498)	(2,937,574)
6/30/2034	4	(9,883,165)	(2,937,574)
6/30/2035	3	(7,667,062)	(2,937,574)
6/30/2036	2	(5,289,184)	(2,937,574)
6/30/2037	1	(2,737,720)	(2,937,574)
6/30/2038	0	0	0

Schedule F – Amortization of UAAL

2019 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2019	Expected UAAL Contribution
6/30/2019	20	$ (27,121,140)	$ (2,620,040)
6/30/2020	**19**	**(26,480,943)**	**(2,620,040)**
6/30/2021	18	(25,794,012)	(2,620,040)
6/30/2022	17	(25,056,935)	(2,620,040)
6/30/2023	16	(24,266,051)	(2,620,040)
6/30/2024	15	(23,417,433)	(2,620,040)
6/30/2025	14	(22,506,866)	(2,620,040)
6/30/2026	13	(21,529,827)	(2,620,040)
6/30/2027	12	(20,481,464)	(2,620,040)
6/30/2028	11	(19,356,571)	(2,620,040)
6/30/2029	10	(18,149,561)	(2,620,040)
6/30/2030	9	(16,854,439)	(2,620,040)
6/30/2031	8	(15,464,773)	(2,620,040)
6/30/2032	7	(13,973,661)	(2,620,040)
6/30/2033	6	(12,373,698)	(2,620,040)
6/30/2034	5	(10,656,938)	(2,620,040)
6/30/2035	4	(8,814,855)	(2,620,040)
6/30/2036	3	(6,838,299)	(2,620,040)
6/30/2037	2	(4,717,455)	(2,620,040)
6/30/2038	1	(2,441,789)	(2,620,040)
6/30/2039	0	0	0

Schedule F – Amortization of UAAL

2020 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2020	Expected UAAL Contribution
6/30/2020	**20**	**$ (29,318,311)**	**$ (2,832,298)**
6/30/2021	19	(28,626,250)	(2,832,298)
6/30/2022	18	(27,883,668)	(2,832,298)
6/30/2023	17	(27,086,878)	(2,832,298)
6/30/2024	16	(26,231,922)	(2,832,298)
6/30/2025	15	(25,314,555)	(2,832,298)
6/30/2026	14	(24,330,219)	(2,832,298)
6/30/2027	13	(23,274,027)	(2,832,298)
6/30/2028	12	(22,140,734)	(2,832,298)
6/30/2029	11	(20,924,709)	(2,832,298)
6/30/2030	10	(19,619,915)	(2,832,298)
6/30/2031	9	(18,219,871)	(2,832,298)
6/30/2032	8	(16,717,624)	(2,832,298)
6/30/2033	7	(15,105,712)	(2,832,298)
6/30/2034	6	(13,376,132)	(2,832,298)
6/30/2035	5	(11,520,291)	(2,832,298)
6/30/2036	4	(9,528,975)	(2,832,298)
6/30/2037	3	(7,392,292)	(2,832,298)
6/30/2038	2	(5,099,631)	(2,832,298)
6/30/2039	1	(2,639,607)	(2,832,298)
6/30/2040	0	0	0

Schedule G – Summary of Main Plan Provisions

AS INTERPRETED FOR VALUATION PURPOSES

Eligibility for Coverage	Establishment of membership in the Employees' Retirement System of Georgia (ERS), the Georgia Legislative Retirement System (LRS) or the Judicial Retirement System (JRS). ERS new entrants on and after January 1, 2009 and LRS and JRS new entrants on and after July 1, 2009 are excluded from membership.
Premiums	ERS Old Plan Members (Hired before July 1, 1982) Member pays 0.05% of monthly salary. State picks up 0.03% of the member premium. ERS New Plan Members (Hired on or after July 1, 1982 and before January 1, 2009), LRS Members and JRS Members Member pays 0.02% of monthly salary. All ERS and LRS members pay the above premiums. If the member is not covered under the Group Term Life Insurance (GTLI) Plan, employee contributions with interest are refunded upon termination of State employment. Otherwise, no premiums are refundable. Participation is voluntary for JRS Members.
Coverage	The amount of insurance is 18 times current monthly earnable compensation (frozen at age 60). For a member with no creditable service prior to April 1, 1964, the amount decreases from age 60 by ½ of 1% per month until age 65, at which point the member will be covered for 70% of the age 60 coverage.

Schedule H – Comprehensive Annual Financial Report Schedule

GA SEAD Pre-retirement: Solvency Test

	Actuarial Accrued Liability for:						
Actuarial Valuation as of 6/30	Active Member Contributions	Retirants & Beneficiaries	Active Members (Employer Funded Portion)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets		
	(1)	(2)	(3)		(1)	(2)	(3)
2020	$0	$0	$ 8,913	$319,340	N/A	N/A	100.0%
2019	0	0	14,083	305,877	N/A	N/A	100.0%
2018	0	0	15,173	289,207	N/A	N/A	100.0%
2017	0	0	15,677	267,286	N/A	N/A	100.0%
2016	0	0	15,610	240,985	N/A	N/A	100.0%
2015	0	0	21,723	240,677	N/A	N/A	100.0%
2014	0	0	35,877	235,358	N/A	N/A	100.0%
2013	0	0	37,513	204,779	N/A	N/A	100.0%
2012	0	0	39,317	183,390	N/A	N/A	100.0%
2011	0	0	40,145	184,783	N/A	N/A	100.0%

All dollar amounts are in thousands.