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April 20, 2017

Mr. James A. Potvin
Executive Director
Georgia Legislative Retirement System
Two Northside 75, Suite 300
Atlanta, GA 30318-7701

Dear Mr. Potvin:

Enclosed is the "Georgia Legislative Retirement System Report of the Actuary on the Valuation Prepared as of June 30, 2016".

The valuation indicates that no employer contribution for the fiscal year ending June 30, 2019 is required to support the benefits of the System.

Please let us know if there are any questions concerning the report.

Sincerely yours,

Edward A. Macdonald, ASA, FCA, MAAA
President

Cathy Turcot
Principal and Managing Director

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary

Enclosure

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EMPLOYEES'
RETIREMENT SYSTEM
OF GEORGIA

GEORGIA LEGISLATIVE RETIREMENT SYSTEM

**REPORT OF THE ACTUARY ON THE VALUATION
PREPARED AS OF JUNE 30, 2016**





Cavanaugh Macdonald

CONSULTING, LLC

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April 20, 2017

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

Attention: Mr. James Potvin, Executive Director

Members of the Board:

Section 47-6-22 of the law governing the operation of the Georgia Legislative Retirement System provides that the actuary shall make periodic valuations of the contingent assets and liabilities of the Retirement System on the basis of regular interest and the tables last adopted by the Board of Trustees. We have submitted the report giving the results of the actuarial valuation of the System prepared as of June 30, 2016. The report indicates that no annual employer contributions for the fiscal year ending June 30, 2019 are required to support the benefits of the System.

The results of the valuation reflect that the Board did not grant the anticipated cost-of-living increases (COLAs) to retired members on July 1, 2016 and on January 1, 2017. In addition, the results of the valuation reflect the one-time payment to certain retirees and beneficiaries effective July 2016.

In preparing the valuation, the actuary relied on data provided by the System. 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 System enacted through the 2016 session of the General Assembly.

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 dollar per active member. 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 dollar per active member. Gains and losses are reflected in the total unfunded accrued liability which is negative and being amortized as a level dollar per active member in accordance with the funding policy adopted by the Board.

The Plan and the employers are required to comply with the financial reporting requirements of GASB Statements No. 67 and 68. The necessary disclosure information is provided in separate supplemental reports.

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April 20, 2017
Board of Trustees
Page 2

We have provided the following information and supporting schedules for the Actuarial Section of the Comprehensive Annual Financial Report:

- Summary of Actuarial Assumptions
- Schedule of Active Members
- Schedule of Funding Progress
- Schedule of Retirees Added to and Removed from Rolls
- Analysis of Change in Unfunded Accrued Liability
- Solvency Test Results

The System is being funded in conformity with the minimum funding standard set forth in Code Section 47-20-10 of the Public Retirement Systems Standards Law and the funding policy adopted by the Board. In our opinion the System is operating on an actuarially sound basis. Assuming that contributions to the System are made by the employer from year to year in the future at the rates recommended on the basis of the successive actuarial valuations, the continued sufficiency of the retirement fund to provide the benefits called for under the System may be safely anticipated.

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

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

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

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Edward Macdonald'.

Edward A. Macdonald, ASA, FCA, MAAA
President

A handwritten signature in blue ink, appearing to read 'Cathy Turcot'.

Cathy Turcot
Principal and Managing Director

A handwritten signature in blue ink, appearing to read 'Edward J. Koebel'.

Edward J. Koebel, EA, FCA, MAAA
Principal and Consulting Actuary



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**GEORGIA LEGISLATIVE RETIREMENT SYSTEM
REPORT OF THE ACTUARY
ON THE VALUATION
PREPARED AS OF JUNE 30, 2016**

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, 2016	June 30, 2015
Number of active members:	224	218
Retired members and beneficiaries:		
Number	256	260
Annual allowances	\$ 1,724,855	\$ 1,777,998
Deferred Vested Members:		
Number	77	82
Annual allowances	\$ 380,083	\$ 402,620
Assets:		
Market Value	\$ 30,975,000	\$ 32,359,000
Actuarial Value	32,171,000	31,635,000
Unfunded actuarial accrued liability	\$ (6,637,794)	\$ (5,944,730)
Amortization period (years)	N/A*	N/A*
Funded Ratio based on Actuarial Value of Assets	126.0%	123.1%
For Fiscal Year Ending	June 30, 2019	June 30, 2018
Total Normal Cost**	\$ 721,547	\$ 708,721
Less Member Contributions	<u>329,363</u>	<u>319,929</u>
Employer Paid Normal Cost**	\$ 392,184	\$ 388,792
Actuarially Determined Employer Contribution Rates (ADEC):		
Normal**	\$ 392,184	\$ 388,792
Accrued liability	<u>(392,184)</u>	<u>(388,792)</u>
Total	\$ 0	\$ 0
Employer contribution rate per active member:		
Normal**	\$ 1,750.82	\$ 1,783.45
Accrued liability	<u>(1,750.82)</u>	<u>(1,783.45)</u>
Total	\$ 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 has been set to such that the total ADEC equals \$0.

** Estimated budgeted administrative expenses are included in the normal contribution.



2. The major benefit and contribution provisions of the System as reflected in the valuation are summarized in Schedule H. The valuation takes into account the effect of amendments of the System enacted through the 2016 session of the General Assembly. The valuation reflects that the Board did not grant the anticipated cost-of-living increases July 1, 2016 and January 1, 2017. In addition, the results of the valuation reflect the one-time bonus payment to certain retirees and beneficiaries effective July 2016.
3. Schedule D of this report outlines the full set of actuarial assumptions and methods used to prepare the current valuation. There have been no changes since the previous valuation. The Board Funding Policy is shown in Schedule F.
4. The entry age actuarial cost method was used to prepare the valuation. Schedule E contains a brief description of this method.
5. Comments on the valuation results as of June 30, 2016 are given in Section IV, and further discussion of the contributions is set out in Section V.
6. We have prepared the Solvency Test and Schedule of Retirants Added to and Removed from the Rolls for the System's Comprehensive Annual Financial Report. These tables are shown in Schedule J.
7. The funding ratio shown in the Summary of Principal Results is the ratio of the actuarial value of assets to the accrued liability and would be different if based on market value of assets. The funding ratio is an indication of progress in funding the promised benefits. Since the ratio is less than 100%, there is a need for additional contributions toward payment of the unfunded actuarial accrued liability. In addition, this funding ratio does not have any relationship to measuring sufficiency if the plan had to settle its liabilities.



SECTION II - MEMBERSHIP

1. Data regarding the membership of the System for use as a basis of the valuation were furnished by the Retirement System office. The valuation included 224 active members.
2. Data was provided by the Retirement System for inactive members who are eligible for deferred vested benefits. The valuation included 77 deferred vested members with annual allowances totaling \$380,083. In addition, there are 77 inactive non-vested members included in the valuation entitled to a refund of member contributions.
3. The following table shows the number of retired members and beneficiaries on the roll as of June 30, 2016, together with the amount of their annual allowances payable under the System as of that date.

**THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF
RETIRED MEMBERS AND BENEFICIARIES ON THE ROLL
AS OF JUNE 30, 2016**

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES
Service Retirements	195	\$ 1,296,272
Disability Retirements	0	0
Beneficiaries of Deceased Members	<u>61</u>	<u>428,583</u>
Total	256	\$ 1,724,855



SECTION III – ASSETS

1. The retirement law provides for the maintenance of two funds for the purpose of recording the financial transactions of the System; namely, the Annuity Savings Fund and the Pension Accumulation Fund.

- (a) Annuity Savings Fund

The Annuity Savings Fund is the fund to which are credited all contributions made by members together with regular interest thereon. When a member retires, or if a death benefit allowance becomes payable to his beneficiary, his accumulated contributions are transferred from the Annuity Savings Fund to the Pension Accumulation Fund. The portion of the allowance which these contributions provide is then paid from the Pension Accumulation Fund. On June 30, 2016, the value of assets credited to the Annuity Savings Fund amounted to \$5,158,000.

- (b) Pension Accumulation Fund

The Pension Accumulation Fund is the fund to which all income from investments and all contributions made by employers of members of the System and by the State for members of local retirement funds are credited. All retirement allowance and death benefit allowance payments are disbursed from this fund. Upon the retirement of a member, or upon his death if a death benefit allowance is payable, his accumulated contributions are transferred from the Annuity Savings Fund to this fund to provide the member-contributed portion of the allowance. On June 30, 2016, the market value of assets credited to the Pension Accumulation Fund amounted to \$25,817,000.

2. As of June 30, 2016, the total market value of assets amounted to \$30,975,000 as reported by the Auditor of the System. The actuarial value of assets used for the current valuation was determined to be \$32,171,000 based on a five-year smoothing of investment gains and losses. Schedule B shows the development of the actuarial value of assets as of June 30, 2016.
3. Schedule C shows receipts and disbursements of the System for the two years preceding the valuation date and a reconciliation of the fund balances at market value.



SECTION IV – COMMENTS ON VALUATION

1. Schedule A of this report contains the valuation balance sheet which shows the present and prospective assets and liabilities of the System as of June 30, 2016. The valuation was prepared in accordance with the actuarial assumptions and methods set forth in Schedule D and the actuarial cost method which is described in Schedule E.
2. The valuation balance sheet shows that the System has total prospective liabilities of \$27,313,458, of which \$19,201,669 is for the prospective benefits payable on account of present retired members, beneficiaries of deceased members, and members entitled to deferred vested benefits, and \$8,111,789 is for the prospective benefits payable on account of present active members. Against these liabilities, the System has total present assets for valuation purposes of \$32,171,000 as of June 30, 2016. The difference of (\$4,857,542) between the total liabilities and the total present assets represents the present value of contributions to be made in the future. Of this amount, \$1,718,484 is the present value of future contributions expected to be made by or on behalf of members, and the balance of (\$6,576,026) represents the present value of future contributions payable by the employers to the Pension Accumulation Fund.
3. The employer's contributions to the System consist of normal contributions and accrued liability contributions. The valuation indicates that annual employer normal contributions at the rate of \$12.90 per active member are required to provide the currently accruing benefits of the System.
4. Prospective normal contributions at the rate of \$12.90 have a present value of \$61,768. When this amount is subtracted from (\$6,576,026), which is the present value of the total future contributions to be made by the employers, the result is a prospective unfunded actuarial accrued liability of (\$6,637,794).
5. The funding policy adopted by the Board, as shown in Schedule F, provides that the unfunded actuarial accrued liability as of June 30, 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.

6. The total UAAL contribution is \$(691,074), 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 is determined to be \$(392,184).
7. Schedule G of this report shows the amortization schedules for the Transitional UAAL and New Incremental UAALs.
8. 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	Amortization Period (years)	Amortization Payment
Transitional	\$(4,236,007)	17	\$(449,017)
New Incremental 6/30/2014	(1,097,722)	18	(113,097)
New Incremental 6/30/2015	(449,597)	19	(45,144)
New Incremental 6/30/2016	<u>(854,468)</u>	20	<u>(83,816)</u>
Total UAAL	\$(6,637,794)		\$(691,074)
Final Amortization Payment			\$(392,184)
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 has been set to such that the total ADEC equals \$0.



SECTION V – CONTRIBUTIONS PAYABLE BY EMPLOYERS

1. The contributions of employers consist of a normal contribution and an accrued liability contribution as determined by actuarial valuation.
2. The normal contribution rate is calculated as the level dollar which, if applied to each 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. On the basis of the valuation, the normal contribution rate was determined to be \$12.90 per active member, or \$2,889 based on 224 active members as of June 30, 2016.
3. An additional contribution of \$389,295, or \$1,737.92 per active member, is required for administrative expenses for the fiscal year ending June 30, 2019.
4. The total normal contribution including administrative expenses is, therefore, \$392,184, or \$1,750.82 per active member.
5. If the unfunded accrued liability is amortized in accordance with the funding policy, the employer contribution would be less than \$0. Since the funding policy also states that the employer contribution cannot be less than \$0, the accrued liability contribution has been adjusted accordingly. The annual accrued liability contribution determined by the June 30, 2016 valuation is, therefore, (\$392,184), or (\$1,750.82) per active member.
6. The following table summarizes the employer contribution rates, which were determined by the June 30, 2016 valuation and are recommended for use.

**ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION RATES (ADEC)
FOR FISCAL YEAR ENDING JUNE 30, 2019**

CONTRIBUTION	PER ACTIVE MEMBER	ANNUAL AMOUNT
Normal	\$ 1,750.82	\$ 392,184
Accrued Liability	<u>(1,750.82)</u>	<u>(392,184)</u>
Total	\$ 0.00	\$ 0



SECTION VI – ACCOUNTING INFORMATION

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

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

**NUMBER OF ACTIVE AND RETIRED MEMBERS
AS OF JUNE 30, 2016**

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits	256
Terminated employees entitled to benefits but not yet receiving benefits	154
Active plan members	<u>224</u>
Total	634

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

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Entry Age (b)	Unfunded AAL (UAAL) (b - a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b - a) / c)
6/30/2011	\$ 29,278,000	\$ 25,244,775	\$(4,033,226)	116.0%	\$ 3,780,486	(106.7)%
6/30/2012	28,990,000	24,965,602	(4,024,398)	116.1	3,815,170	(105.5)
6/30/2013	29,481,000	24,903,501	(4,577,499)	118.4	3,867,195	(118.4)
6/30/2014	30,538,000	24,913,237	(5,624,763)	122.6	3,849,853	(146.1)
6/30/2015	31,635,000	25,690,270	(5,944,730)	123.1	3,763,866	(157.9)
6/30/2016	32,171,000	25,533,206	(6,637,794)	126.0	3,874,858	(171.3)



3. The following shows the schedule of employer contributions.

<u>Year Ending</u>	<u>Annual Required Contribution</u>	<u>Amount Contributed</u>	<u>Percentage Contributed</u>
6/30/2011	\$ 0	\$ 75,000	N/A
6/30/2012	0	76,000	N/A
6/30/2013	0	128,000	N/A
6/30/2014	0	45,000	N/A
6/30/2015	0	0	N/A
6/30/2016	0	0	N/A

4. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at June 30, 2016. Additional information as of the latest actuarial valuation follows.

Valuation date	6/30/2016
Actuarial cost method	Entry age
Amortization method	Level dollar, open
Remaining amortization period	N/A*
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return**	7.50%
Projected salary increases**	N/A
Cost-of-living adjustments	3.00% Annually

*The remaining amortization period is infinite.

**Includes inflation at 2.75%



SECTION VII – EXPERIENCE

1. Section 47-6-22 of the act governing the operation of the System provides that as an aid to the Board in adopting service and mortality tables, the actuary will prepare an experience investigation at least once in each five-year period. The last experience investigation was prepared for the five-year period ending June 30, 2014, and based on the results of the investigation, various assumptions and methods were revised and adopted by the Board on December 17, 2015. The next experience investigation will be prepared for the period July 1, 2014 through June 30, 2019.
2. The following table shows the estimated gain or loss from various factors that resulted in a decrease of \$693,064 in the unfunded actuarial accrued liability (UAAL) from (\$5,944,730) to (\$6,637,794) during the fiscal year ending June 30, 2016.
3. The most significant item contributing to the \$693.1 thousand decrease in the UAAL was a gain of \$418.2 thousand due to the assumed COLAs not being granted July 1, 2016 or January 1, 2017. In addition, there was a \$198.9 thousand gain due to the difference between actual and expected turnover and retirements. The effect of the July 2016 one-time bonus payment was an increase in the UAAL of approximately \$51.5 thousand. The return on the actuarial value of assets was slightly lower than the assumed rate of 7.50%, resulting in a loss of \$24.1 thousand due to valued asset growth.



ANALYSIS OF THE CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY

(in thousands of dollars)

ITEM	AMOUNT OF INCREASE/ (DECREASE)
Interest (7.50%) added to previous UAAL	\$ (445.9)
Accrued liability contribution	338.3
Experience:	
Valuation asset growth	24.1
Pensioners' mortality	(66.1)
Turnover and retirements	(198.9)
New entrants	26.8
Method changes	0.0
Amendments (one-time bonus payment)	51.5
No 7/1/16, 1/1/17 COLAs	(418.2)
Assumption changes	0.0
Miscellaneous changes	<u>(4.7)</u>
Total	\$ (693.1)



SCHEDULE A

**VALUATION BALANCE SHEET
SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF
THE GEORGIA LEGISLATIVE RETIREMENT SYSTEM
AS OF JUNE 30, 2016**

ACTUARIAL LIABILITIES		
(1)	Present value of prospective benefits payable on account of present retired members, beneficiaries of deceased members, and members entitled to deferred vested benefits	
-	Service and disability benefits	\$ 12,181,704
-	Death and survivor benefits	3,257,722
-	Deferred vested benefits	<u>3,762,243</u>
	Total	\$ 19,201,669
(2)	Present value of prospective benefits payable on account of present active members	<u>8,111,789</u>
(3)	TOTAL ACTUARIAL LIABILITIES	<u>\$ 27,313,458</u>
PRESENT AND PROSPECTIVE ASSETS		
(4)	Actuarial value of assets	\$ 32,171,000
(5)	Present value of total future contributions = (3)-(4)	\$ (4,857,542)
(6)	Present value of future member contributions	1,718,484
(7)	Present value of future employer contributions = (5)-(6)	\$ (6,576,026)
(8)	Prospective normal contributions	61,768
(9)	Prospective unfunded actuarial accrued liability contributions = (7)-(8)	<u>(6,637,794)</u>
(10)	TOTAL PRESENT AND PROSPECTIVE ASSETS	<u>\$ 27,313,458</u>



SCHEDULE B

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

(1)	Actuarial Value Beginning of Year	\$	31,635,000
(2)	Market Value End of Year	\$	30,975,000
(3)	Market Value Beginning of Year	\$	32,359,000
(4)	Cash Flow		
	(a) Contributions	\$	328,000
	(b) Benefit Payments		(1,762,000)
	(c) Administrative Expenses		(313,000)
	(d) Investment Expenses		(14,000)
	(e) Net: (4)(a) + (4)(b) + (4)(c) + (4)(d)	\$	(1,761,000)
(5)	Investment Income		
	(a) Market Total: (2) – (3) – (4)(e)	\$	377,000
	(b) Assumed Rate		7.50%
	(c) Amount for Immediate Recognition: [(3) x (5)(b)] + [(4)(a) + (4)(b) + (4)(c)] x (5)(b) x 0.5] – (4)(d)	\$	2,375,000
	(d) Amount for Phased-In Recognition: (5)(a) – (5)(c)		(1,998,000)
(6)	Phased-In Recognition of Investment Income		
	(a) Current Year: (5)(d) / 5	\$	(400,000)
	(b) First Prior Year		(242,000)
	(c) Second Prior Year		564,000
	(d) Third Prior Year		0
	(e) Fourth Prior Year		0
	(f) Total Recognized Investment Gain	\$	(78,000)
(7)	Actuarial Value End of Year: (1) + (4)(e) + (5)(c) + (6)(f)	\$	32,171,000
(8)	Difference Between Market & Actuarial Values: (2) – (8)	\$	(1,196,000)
(9)	Rate of Return on Actuarial Value		7.42%



SCHEDULE C

**SUMMARY OF RECEIPTS AND DISBURSEMENTS
(Market Value)**

	YEAR ENDING	
	June 30, 2016 (\$1,000's)	June 30, 2015 (\$1,000's)
<u>Receipts for the Year</u>		
Contributions:		
Members	\$ 328	\$ 327
Nonemployer	0	0
Employer	<u>0</u>	<u>0</u>
Subtotal	\$ 328	\$ 327
Investment Earnings	<u>363</u>	<u>1,189</u>
TOTAL	\$ 691	\$ 1,516
<u>Disbursements for the Year</u>		
Benefit Payments	\$ 1,724	\$ 1,756
Refunds to Members	38	26
Administrative Expenses	<u>313</u>	<u>169</u>
TOTAL	\$ 2,075	\$ 1,951
<u>Excess of Receipts over Disbursements</u>	\$ (1,384)	\$ (435)
<u>Reconciliation of Asset Balances</u>		
Asset Balance as of the Beginning of Year	\$ 32,359	\$ 32,794
Excess of Receipts over Disbursements	<u>(1,384)</u>	<u>(435)</u>
Asset Balance as of the End of Year	\$ <u>30,975</u>	\$ <u>32,359</u>
Rate of Return	1.15%	3.72%



SCHEDULE D

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

Adopted by the Board December 17, 2015.

VALUATION INTEREST RATE: 7.50% per annum, compounded annually, net of investment expenses, composed of a 2.75% inflation assumption and a 4.75% real rate of investment return assumption.

SALARY INCREASES: None.

SEPARATIONS BEFORE SERVICE RETIREMENT: Representative values of the assumed annual rates of separation before service retirement are as follows:

Age	Annual Rates of		
	Withdrawal	Death	
		Men	Women
20	8.0%	.032%	.018%
25	8.0	.035	.019
30	8.0	.041	.025
35	8.0	.072	.044
40	8.0	.100	.066
45	8.5	.140	.104
50	8.5	.198	.156
55	9.0	.281	.223
60	9.0	.409	.306
65	9.0	.560	.430

SERVICE RETIREMENT: The assumed annual rates of retirement are shown below:

Age	Annual Rate	Age	Annual Rate
60	10%	66	12%
61	10%	67	15%
62	15%	68	12%
63	10%	69	12%
64	10%	70-74	20%
65	12%	75	100%

DEATHS AFTER RETIREMENT: Since the System has minimal post-retirement mortality experience, the System uses the same mortality tables used for the Employees' Retirement System of Georgia. The RP-2000 Combined Mortality Table projected to 2025 with projection scale BB and set forward 2 years for both males and females is used for the period after service retirement and for dependent beneficiaries. Since there are no disability retirements in the System, there are no disability mortality rates utilized at this time. There is a margin for future mortality improvement in the tables used by the System. Based on the results of the most recent experience study adopted by the Board on December 17, 2015, the numbers of expected future deaths are 9-12% less than the actual number of deaths that occurred during the study period for healthy retirees.



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

Age	Men	Women	Age	Men	Women
40	.113%	.079%	65	1.130%	.899%
45	.161	.123	70	1.870	1.528
50	.247	.187	75	3.215	2.522
55	.425	.292	80	5.516	4.163
60	.699	.492	85	9.563	7.124

ADMINISTRATIVE EXPENSES: Budgeted administrative expenses for the fiscal year are added to the normal cost.

AMORTIZATION METHOD: Level dollar amortization.

ASSET METHOD: The actuarial value of assets, as developed in Schedule B. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected value of assets, based on the assumed valuation rate of return. The actuarial value was set equal to the market value as of June 30, 2013. The amount recognized each year beginning June 30, 2014 will be 20% of the difference between market value and expected actuarial value

COST-OF-LIVING ALLOWANCE (COLA): 1.5% semi-annually.

PERCENT MARRIED: 90% of active members are assumed to be married with the male three years older than his spouse.

VALUATION METHOD: Entry age actuarial cost method. See Schedule E for a brief description of this method.



SCHEDULE E

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 7.50%), of each member's expected benefits at retirement or death is determined, based on age, service and sex. The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service, disability or survivor's benefit. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members, beneficiaries and members entitled to deferred vested benefits to obtain the present value of all expected benefits payable from the System on account of the present group of members and beneficiaries.
2. The employer contributions required to support the benefits of the System are determined following a level funding approach, and consist of a normal contribution and an 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 F

FUNDING POLICY OF THE LRS BOARD OF TRUSTEES

The purpose of this Funding Policy is to state the overall objectives for the Georgia Legislative Retirement System (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 LRS Board of Trustees 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 is expected to receive throughout retirement. In meeting this objective, the System will strive to meet the following funding objectives:

- To develop a pattern of contributions expressed as both a total dollar amount and as a dollar amount per active member 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 a 100% funded ratio; in the event that the funded ratio falls below 100%, the objective will be to obtain 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 increase 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 Contributions**
 - **Employer Normal Contributions** – the contribution 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 contributions will be determined as the summation of the employer Normal Contribution, a contribution for administrative expenses, the amortization cost for the Transitional UAAL and the individual amortization cost for each of the New Incremental UAAL bases.
- Employer Contributions will be expressed as both a total dollar amount and as a dollar amount per active member. In no event shall the employer contributions be less than \$0.
- The valuation methodology, including the amortization of the Unfunded Actuarial Accrued Liability (UAAL), would be expected to maintain reasonably stable contributions as a dollar per active member.
- In no event will the employer contribution as determined above be less than \$0.

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 Entry Age Normal (EAN) actuarial cost method.
- The long-term annual investment rate of return assumption will be 7.50% net of investment expenses.
- The actuarial value of assets will be determined by recognizing the annual differences between actual and expected market value of assets over a five-year period, beginning with the June 30, 2013 actuarial valuation.
 - Prior to the June 30, 2013 valuation, the differences between actual and expected market value of assets were recognized over a seven-year period. For the June 30, 2013 valuation, all then-current deferred gains and losses will be recognized immediately, and the initial new five-year period will begin immediately thereafter.

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 (for the UAAL as of the June 30, 2013 valuation date, and for each successive year of gains and losses incurred in years following the June 30, 2013 valuation date). However in no event shall the employer contributions 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 30-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.



SCHEDULE G

AMORTIZATION OF TRANSITIONAL UAAL

Valuation Date	Amortization Period	Balance of Transitional UAAL	Expected UAAL Contribution
6/30/2013	20	\$ (4,577,499)	\$ (449,017)
6/30/2014	19	(4,471,795)	(449,017)
6/30/2015	18	(4,358,162)	(449,017)
6/30/2016	17	(4,236,007)	(449,017)
6/30/2017	16	(4,104,691)	(449,017)
6/30/2018	15	(3,963,526)	(449,017)
6/30/2019	14	(3,811,774)	(449,017)
6/30/2020	13	(3,648,640)	(449,017)
6/30/2021	12	(3,473,271)	(449,017)
6/30/2022	11	(3,284,749)	(449,017)
6/30/2023	10	(3,082,088)	(449,017)
6/30/2024	9	(2,864,228)	(449,017)
6/30/2025	8	(2,630,028)	(449,017)
6/30/2026	7	(2,378,264)	(449,017)
6/30/2027	6	(2,107,616)	(449,017)
6/30/2028	5	(1,816,671)	(449,017)
6/30/2029	4	(1,503,904)	(449,017)
6/30/2030	3	(1,167,680)	(449,017)
6/30/2031	2	(806,239)	(449,017)
6/30/2032	1	(417,690)	(449,017)
6/30/2033	0	0	0



SCHEDULE G
(Continued)

AMORTIZATION OF 2014 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2014	Expected UAAL Contribution
6/30/2014	20	\$ (1,152,968)	\$ (113,097)
6/30/2015	19	(1,126,343)	(113,097)
6/30/2016	18	(1,097,722)	(113,097)
6/30/2017	17	(1,066,954)	(113,097)
6/30/2018	16	(1,033,878)	(113,097)
6/30/2019	15	(998,322)	(113,097)
6/30/2020	14	(960,099)	(113,097)
6/30/2021	13	(919,009)	(113,097)
6/30/2022	12	(874,838)	(113,097)
6/30/2023	11	(827,354)	(113,097)
6/30/2024	10	(776,308)	(113,097)
6/30/2025	9	(721,434)	(113,097)
6/30/2026	8	(662,444)	(113,097)
6/30/2027	7	(599,031)	(113,097)
6/30/2028	6	(530,861)	(113,097)
6/30/2029	5	(457,578)	(113,097)
6/30/2030	4	(378,799)	(113,097)
6/30/2031	3	(294,112)	(113,097)
6/30/2032	2	(203,073)	(113,097)
6/30/2033	1	(105,207)	(113,097)
6/30/2034	0	0	0



SCHEDULE G
(Continued)

AMORTIZATION OF 2015 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2015	Expected UAAL Contribution
6/30/2015	20	\$ (460,224)	\$ (45,144)
6/30/2016	19	(449,597)	(45,144)
6/30/2017	18	(438,172)	(45,144)
6/30/2018	17	(425,890)	(45,144)
6/30/2019	16	(412,688)	(45,144)
6/30/2020	15	(398,495)	(45,144)
6/30/2021	14	(383,238)	(45,144)
6/30/2022	13	(366,836)	(45,144)
6/30/2023	12	(349,204)	(45,144)
6/30/2024	11	(330,250)	(45,144)
6/30/2025	10	(309,875)	(45,144)
6/30/2026	9	(287,971)	(45,144)
6/30/2027	8	(264,424)	(45,144)
6/30/2028	7	(239,112)	(45,144)
6/30/2029	6	(211,901)	(45,144)
6/30/2030	5	(182,649)	(45,144)
6/30/2031	4	(151,203)	(45,144)
6/30/2032	3	(117,399)	(45,144)
6/30/2033	2	(81,060)	(45,144)
6/30/2034	1	(41,995)	(45,144)
6/30/2035	0	0	0



SCHEDULE G
(Continued)

AMORTIZATION OF 2016 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2016	Expected UAAL Contribution
6/30/2016	20	\$ (854,468)	\$ (83,816)
6/30/2017	19	(834,736)	(83,816)
6/30/2018	18	(813,525)	(83,816)
6/30/2019	17	(790,723)	(83,816)
6/30/2020	16	(766,210)	(83,816)
6/30/2021	15	(739,860)	(83,816)
6/30/2022	14	(711,532)	(83,816)
6/30/2023	13	(681,081)	(83,816)
6/30/2024	12	(648,345)	(83,816)
6/30/2025	11	(613,154)	(83,816)
6/30/2026	10	(575,324)	(83,816)
6/30/2027	9	(534,657)	(83,816)
6/30/2028	8	(490,939)	(83,816)
6/30/2029	7	(443,943)	(83,816)
6/30/2030	6	(393,422)	(83,816)
6/30/2031	5	(339,112)	(83,816)
6/30/2032	4	(280,729)	(83,816)
6/30/2033	3	(217,967)	(83,816)
6/30/2034	2	(150,498)	(83,816)
6/30/2035	1	(77,969)	(83,816)
6/30/2036	0	0	0



SCHEDULE H

SUMMARY OF MAIN SYSTEM PROVISIONS AS INTERPRETED FOR VALUATION PURPOSES

The Georgia Legislative Retirement System (LRS) is a cost-sharing multiple employer defined benefit pension plan established by the Georgia General Assembly in 1979 for the purpose of providing retirement allowances and other benefits for all members of the Georgia General Assembly.

Normal Retirement Benefit

Eligibility	Age 65 and 8 years of creditable service or age 62 and 8 years of membership service (for eligible purposes, 4 legislative terms are equivalent to 8 years of membership service).
Benefit	Monthly benefit is \$36 multiplied by years of creditable service. For members with retirement dates prior to July 1, 2013, a one-time 1.75% increase is made at time of retirement. Members receiving benefits in July 2016 with retirement dates on or before December 1, 2015 and membership dates before July 1, 2009 received a bonus in July 2016 equal to 3% of their annual benefit amount.

Early Retirement Benefit

Eligibility	Age 60 and 8 years of membership service.
Benefit	Accrued benefit reduced by 5% for each year member is under age 62.

Disability Retirement Benefit

No special benefit. Benefit is same as early or normal retirement.

Involuntary Retirement Benefit

N/A

Deferred Vested Retirement Benefit

Eligibility	8 years of creditable service. Member contributions not withdrawn.
Benefit	Accrued benefit deferred to age 65 or reduced benefit payable at age 60.

Death Benefit

Eligibility	If less than 15 years of creditable service, a refund of accumulated contributions. If at least 15 years of creditable service or eligible for retirement, the benefit below.
Benefit	Benefit equal to retirement benefit immediately prior to death under 100% joint and survivorship option.



Termination Benefit

Eligibility

Termination with less than 8 years of creditable service.

Benefit

Return of the member's accumulated contributions.

Payment Options

- (1) Life annuity. Guaranteed payment of accumulated member contributions.
- (2) 100% joint and survivorship annuity.
- (3) 50% joint and survivorship annuity.

Post-Retirement Adjustments

The Board may from time to time grant a Cost of Living Adjustment.

Contributions

By Members

Members contribute 8 ½ % of salary.

By Employers

Employer contributions are actuarially determined and approved and certified by the Board to the legislative fiscal officer.



SCHEDULE I

**NUMBER OF ACTIVE MEMBERS
BY AGE AND SERVICE AS OF JUNE 30, 2016**

Attained Age	Years of Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25										0
25 to 29	1	3								4
30 to 34	1	5	1							7
35 to 39		7	4	1						12
40 to 44	1	11	13		1					26
45 to 49	3	8	8	4						23
50 to 54	4	11	7	2	2					26
55 to 59		9	7	9	4	3				32
60 to 64	1	10	13	7	8	2				41
65 to 69		5	8	5	1	3	1	1	2	26
70 & Up	1	1	6	5	7	3	3	1		27
Total	12	70	67	33	23	11	4	2	2	224

Average Age: 55.4
Average Service: 9.3



SCHEDULE I
(Continued)

**NUMBER OF RETIRED MEMBERS
AND THEIR BENEFITS BY AGE**

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	0	\$ 0	\$ 0
50 - 54	0	0	0
55 - 59	0	0	0
60 - 64	10	45,055	4,506
65 - 69	38	210,024	5,527
70 - 74	52	329,953	6,345
75 - 79	36	233,631	6,490
80 - 84	31	204,582	6,599
85 - 89	16	152,718	9,545
90 - 94	11	96,147	8,741
95 & Over	1	24,162	24,162
Total	195	\$ 1,296,272	\$ 6,648

**NUMBER OF BENEFICIARIES
AND THEIR BENEFITS BY AGE**

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	2	\$ 6,323	\$ 3,161
50 - 54	1	4,726	4,726
55 - 59	1	5,100	5,100
60 - 64	5	21,858	4,372
65 - 69	5	19,835	3,967
70 - 74	9	58,982	6,554
75 - 79	9	65,457	7,273
80 - 84	8	50,777	6,347
85 - 89	15	127,359	8,491
90 - 94	5	62,911	12,582
95 & Over	1	5,255	5,255
Total	61	\$ 428,583	\$ 7,026



SCHEDULE I
(Continued)

**NUMBER OF DEFERRED VESTED MEMBERS
AND THEIR BENEFITS BY AGE**

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 45	3	\$ 13,104	\$ 4,368
45-49	9	38,124	4,236
50-54	14	76,752	5,482
55-59	26	118,330	4,551
60-64	22	119,806	5,446
65-69	3	13,967	4,656
70 & Over	0	0	0
Total	77	\$ 380,083	\$ 4,936



SCHEDULE J

CAFR SCHEDULES

GA LRS: Solvency Test							
Actuarial Valuation as of 6/30	Actuarial Accrued Liability for:			Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets		
	Active Member Contributions	Retirants & Beneficiaries	Active Members (Employer Funded Portion)		(1)	(2)	(3)
	(1)	(2)	(3)				
2016	\$3,630	\$19,202	\$2,701	\$32,171	100%	100.0%	100.0%
2015	3,287	19,873	2,530	31,635	100%	100.0%	100.0%
2014	3,430	19,006	2,477	30,538	100%	100.0%	100.0%
2013	2,951	19,623	2,330	29,481	100%	100.0%	100.0%
2012	3,185	19,200	2,581	28,990	100%	100.0%	100.0%
2011	2,921	19,759	2,564	29,278	100%	100.0%	100.0%
2010	3,166	19,208	2,629	29,581	100%	100.0%	100.0%
2009	2,908	18,465	2,150	30,303	100%	100.0%	100.0%
2008	2,853	19,366	2,235	30,706	100%	100.0%	100.0%
2007	2,484	19,847	2,026	30,049	100%	100.0%	100.0%
2006	2,507	18,734	2,166	29,172	100%	100.0%	100.0%

All dollar amounts are in thousands.

GA LRS: Schedule of Retirants Added to and Removed from Rolls									
Year Ended	Added to Rolls		Removed from Rolls		Roll End of Year			% Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances (in thousands)	Number	Annual Allowances (in thousands)	Number	Annual Allowances (in thousands)			
June 30, 2016	9	58	13	\$ 111	256	\$ 1,725	-3.0%	\$6,738	
June 30, 2015	13	87	12	112	260	1,778	-1.4%	6,838	
June 30, 2014	6	30	7	61	259	1,803	-1.7%	6,961	
June 30, 2013	32	200	15	140	260	1,834	3.4%	7,054	
June 30, 2012	10	66	11	82	243	1,774	-0.9%	7,300	
June 30, 2011	18	104	10	86	244	1,790	1.0%	7,336	
June 30, 2010	10	106	3	36	236	1,772	4.1%	7,508	
June 30, 2009	10	117	7	54	229	1,702	3.8%	7,432	
June 30, 2008	13	130	11	100	226	1,639	1.9%	7,252	
June 30, 2007	17	151	9	74	224	1,609	5.0%	7,183	
June 30, 2006	13	103	21	165	216	1,532	-3.9%	7,093	