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April 20, 2023

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

Dear Mr. Potvin:

Enclosed is the "Employees' Retirement System of Georgia Report of the Actuary on the Valuation Prepared as of June 30, 2022".

The valuation indicates that employer contributions for the fiscal year ending June 30, 2025 at the rate 24.45% of compensation for Old Plan Members, 29.20% of compensation for New Plan Members and 25.51% of compensation for GSEPS Members are sufficient to support the benefits of the System. The valuation takes into account the effect of all amendments to the System enacted through the 2022 session of the General Assembly.

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

Sincerely yours,

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

Cathy Turcot
Principal and Managing Director

Ben Mobley, ASA, FCA, MAAA
Consulting Actuary

Enclosure

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EMPLOYEES' RETIREMENT SYSTEM OF GEORGIA

EMPLOYEES' RETIREMENT SYSTEM OF GEORGIA

REPORT OF THE ACTUARY ON THE VALUATION
PREPARED AS OF JUNE 30, 2022

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The experience and dedication you deserve

April 20, 2023

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

Attention: Mr. James Potvin, Executive Director

Members of the Board:

Section 47-2-26 of the law governing the operation of the Employees' Retirement System (ERS) of Georgia provides that the actuary shall make annual 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, 2022. The report indicates that annual employer contributions at the rate of 24.45% of compensation for Old Plan Members, 29.20% of compensation for New Plan Members, and 25.51% of compensation for GSEPS Members for the fiscal year ending June 30, 2025 are sufficient to support the benefits of the System.

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 2022 session of the General Assembly.

In addition, the results of the valuation reflect an actual cost-of-living adjustment (COLA) of 1.50% for certain retirees and beneficiaries effective July 1, 2022, rather than the anticipated 1.05% COLA.

Effective with the June 30, 2022 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, 2022 was less than 7.20%, the assumed rate of return used in the current valuation remained at 7.20%.**

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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 funding and 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.

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.

We have provided the following information and supporting schedules for the Actuarial Section of the Annual Comprehensive 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 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 System and on actuarial assumptions that are internally consistent and reasonably based on the actual experience of the System.

In order to prepare the results in this report, we have utilized actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and 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

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

Cathy Turcot

Cathy Turcot
Principal and Managing Director

Ben Mobley

Ben Mobley, ASA, FCA, MAAA
Consulting Actuary

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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 (all dollar amounts are in thousands):

Valuation Date	**June 30, 2022**	**June 30, 2021**
Number of active members	52,526	53,330
Annual earnable compensation	$ 2,572,445	$ 2,477,691
Number of retired members and beneficiaries	54,378	53,863
Annual allowances	$ 1,421,659*	$ 1,416,618
Number of deferred vested members	6,793	6,620
Annual allowances	$ 81,896	$ 79,118
Assets:		
Fair Value	$ 13,830,510	$ 16,547,905
Actuarial Value	14,632,266	14,383,600
Valuation Interest Rate	**7.20%**	**7.20%**
Unfunded actuarial accrued liability	$ 5,628,490	$ 5,702,095
Blended Amortization period (years)	18.0	20.0
Funded Ratio based on Actuarial Value of Assets	72.2%	71.6%
Contribution Rates for Fiscal Year Ending	**June 30, 2025**	**June 30, 2024**
Actuarially Determined Employer Contribution Rates (ADEC):		
Old Plan (employed prior to 7/1/1982)		
Initial Normal Rate**	7.14%	7.29%
Employer Rate Paid on Behalf of Employee	(4.75)	(4.75)
Normal Rate**	2.39%	2.54%
Accrued Liability Rate	22.06%	22.06%
Total	24.45%	24.60%
New Plan (employed 7/1/1982 through 12/31/2008)		
Normal Rate**	7.14%	7.29%
Accrued Liability Rate	22.06%	22.06%
Total	29.20%	29.35%
GSEPS (employed on and after 1/1/2009)		
Normal Rate**	3.45%	3.45%
Accrued Liability Rate	22.06%	22.06%
Total	25.51%	25.51%

* Does not reflect the COLA granted by the Board effective July 1, 2022.
** The normal contribution rate includes administrative expenses.

2. The major benefit and contribution provisions of the System are summarized in Schedule H. The valuation takes into account the effect of amendments of the System enacted through the 2022 session of the General Assembly. The valuation reflects that the Board granted a 1.5% cost-of-living adjustment (COLA) for certain retirees and beneficiaries effective July 1, 2022, rather than the anticipated 1.05% COLA.

3. The Board Funding Policy as adopted by the Board on April 21, 2022 is shown in Schedule F.

4. Schedule D of this report outlines the full set of actuarial assumptions used to prepare the current valuation. Effective with the June 30, 2022 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, 2022 was less than 7.20%, the assumed rate of return used in the current valuation remained at 7.20%.**

5. In addition, the funding policy provides that the Actuarial Accrued Liability and Normal Cost of the System will include a prefunded variable Cost-of-Living Adjustment (COLA) for eligible retirees and beneficiaries of the System. Under the policy, future COLAs are provided through a profit-sharing mechanism using the System's asset performance. More information, including definitions and the methodology in determining the annual COLA rate, is provided in the Appendix of the Funding Policy in Schedule F of this report.

6. The entry age actuarial cost method was used to prepare the valuation. Schedule E contains a brief description of this method.

7. Comments on the valuation results as of June 30, 2022 are given in Section IV and further discussion of the employer contribution levels is set out in Section V.

8. We have prepared the Solvency Test and the Schedule of Retirants Added to and Removed from Rolls for the System's Annual Comprehensive Financial Report. These tables are shown in Schedule K.

9. The funded 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 fair value of assets. The funded 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 funded 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 for the valuation were furnished by the Retirement System office. The following table shows the number of active members, their annual compensation and average annual compensation as of June 30, 2022 on whose account benefits may be payable under the Retirement System.

THE NUMBER, ANNUAL COMPENSATION AND AVERAGE ANNUAL COMPENSATION OF ACTIVE MEMBERS AS OF JUNE 30, 2022

GROUP	NUMBER	ANNUAL COMPENSATION ($1,000's)	AVERAGE ANNUAL COMPENSATION
Old Plan	17	$ 1,709	$ 100,529
New Plan	16,810	961,166	57,178
GSEPS	35,699	1,609,570	45,087
Total	52,526	$ 2,572,445	$ 48,975

2. Data was provided by the Retirement System for inactive members who are eligible for deferred vested benefits. The valuation included 6,793 deferred vested members with annual allowances totaling $81,896,255. In addition, there are 63,844 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, 2022, together with the amount of their annual retirement allowances payable under the System as of that date.

THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF RETIRED MEMBERS AND BENEFICIARIES RECEIVING BENEFITS AS OF JUNE 30, 2022

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES* ($1,000's)
Service Retirements	42,581	$ 1,168,390
Disability Retirements	5,349	151,416
Beneficiaries of Deceased Members	6,448	101,853
Total	54,378	$ 1,421,659

* Does not reflect the COLA granted by the Board effective July 1, 2022.

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 (all amounts are in thousands).

   (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 annuity which these contributions provide is then paid from the Pension Accumulation Fund. On June 30, 2022, the value of assets credited to the Annuity Savings Fund amounted to $489,693.

   (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 annuity portion of the allowance. On June 30, 2022, the fair value of assets credited to the Pension Accumulation Fund amounted to $13,340,817.

2. As of June 30, 2022, the total fair value of assets amounted to $13,830,510 as reported by the Auditor of the System.

3. The actuarial value of assets used for the current valuation was determined to be $14,632,266 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, 2022.

4. 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 fair 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, 2022 (all amounts are in thousands). Schedule A also shows a breakdown of the total and accrued liabilities of the System by Plan.

2. The valuation balance sheet shows that the System has total prospective liabilities of $21,109,749, of which $14,904,964 is for the prospective benefits payable on account of present retired members, beneficiaries of deceased members, and members entitled to deferred vested benefits, and $6,204,785 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 $14,632,266 as of June 30, 2022. The difference of $6,477,483 between the total liabilities and the total present assets represents the present value of contributions to be made in the future.

3. The employer's contributions to the System consist of normal contributions and accrued liability contributions. The valuation indicates that employer normal contributions at the rate of 2.39% (7.14% less 4.75% Employer paid on behalf of Employee) of compensation for Old Plan members, 7.14% of compensation for New Plan members, and 3.45% of compensation for GSEPS members are required.

4. Administrative expenses each year are assumed to be 0.35% of payroll and have been added to the normal contribution rates shown in 3. above.

5. Prospective employer and employee normal contributions (excluding administrative expenses) have a present value of $848,993. When this amount is subtracted from $6,477,483, which is the present value of the total future contributions to be made in the future, there remains $5,628,490 as the unfunded actuarial accrued liability.

Section IV – Comments on Valuation

6. The funding policy adopted by the Board, as shown in Schedule F, provides that the unfunded actuarial accrued liability as of June 30, 2021 (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 combine to 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.
7. The funding policy also provides that the Actuarial Accrued Liability and Normal Cost of the System will include a prefunded variable Cost-of-Living Adjustment (COLA) for eligible retirees and beneficiaries of the System. Under this structure, future COLAs are provided through a profit-sharing mechanism using the System's asset performance. More information, including definitions and the methodology in determining the annual COLA rate, is provided in the Appendix of the Funding Policy in Schedule F of this report.
8. We have determined that an accrued liability contribution rate of 22.06% of active member's compensation will comply with the Board's funding policy for this year's valuation.
9. Schedule G of this report shows the amortization schedule for the Transitional UAAL.

10. The following table shows the components of the total UAAL and the derivation of the UAAL contribution rate in accordance with the funding policy (all dollar amounts are in thousands):

TOTAL UAAL AND UAAL CONTRIBUTION RATE
($1,000's)

	Remaining Balance UAAL	Remaining Amortization Period	Amortization Payment
Transitional	$ 5,566,013	18.0	$ 561,553
New Incremental 6/30/2022	62,477	20.0	5,989
Total	$ 5,628,490		$ 567,542
Blended Amortization Period (years)			18.0
Estimated Payroll			$ 2,572,445
UAAL Contribution Rate			22.06%

Section V – Contributions Payable by Employers

1. The following table summarizes the employer contribution rates, which were determined by the June 30, 2022 valuation and are recommended for use.

ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION RATES (ADEC)
FOR FISCAL YEAR ENDING JUNE 30, 2025

	Old Plan	New Plan	GSEPS
Normal Rate			
Initial Normal Rate*	7.14%	7.14%	3.45%
Employer Paid on behalf of Employee	(4.75)	(0.00)	(0.00)
Employer Normal Rate	2.39%	7.14%	3.45%
Accrued Liability Rate	22.06%	22.06%	22.06%
Total	24.45%	29.20%	25.51%

* Includes administrative expense assumption rate of 0.35%.

2. Schedule J summarizes the contribution rates required for groups of members with special benefits.

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, 2022

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits	54,378
Terminated employees entitled to benefits but not yet receiving benefits	70,637
Active plan members	52,526
Total	177,541

2. The schedule of funding progress is shown below.

SCHEDULE OF FUNDING PROGRESS
(Dollar amounts in thousands)

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) - Entry Age (b)	Unfunded AAL (UAAL) (b – a)	Funded Ratio (a / b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll ((b – a) / c)
6/30/2017*	$ 13,088,185	$ 17,514,898	$ 4,426,713	74.7%	$ 2,546,492	173.8%
6/30/2018*	13,412,046	17,812,441	4,400,395	75.3	2,634,129	167.1
6/30/2019	13,481,219	17,829,220	4,348,001	75.6	2,611,965	166.5
6/30/2020#	13,556,622	18,375,797	4,819,175	73.8	2,612,773	184.4
6/30/2021*	14,383,600	20,085,695	5,702,095	71.6	2,477,691	230.1
6/30/2022	14,632,266	20,260,756	5,628,490	72.2	2,572,445	218.8

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

3. The following shows the schedule of employer and non-employer contributions (all dollar amounts are in thousands).

Year Ending	Actuarially Determined Employer Contribution	Percentage Contributed
6/30/2017	$ 624,623	100.1%
6/30/2018	650,072	100.3
6/30/2019	649,209	100.0
6/30/2020	643,857	100.0
6/30/2021	615,967	100.0
6/30/2022	619,723	100.0

An employer group within ERS did not contribute the full ADEC every year. However, this employer has made the additional contributions required and repaid this shortfall as of June 30, 2018.

4. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at June 30, 2022. Additional information as of the latest actuarial valuation follows.

Valuation date	6/30/2022
Actuarial cost method	Entry age
Amortization method	Level dollar, closed
Remaining amortization period	18.0 years
Asset valuation method	5-year smoothed fair
Actuarial assumptions:	
Investment rate of return*	7.20%
Projected salary Increases*	3.00% - 6.75%
Cost-of-living adjustments	1.05% annually

* Includes inflation at 2.50%

Section VII – Experience

1. Section 47-2-26 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, 2019, and based on the results of the investigation, various new actuarial assumptions and methods were adopted by the Board on December 17, 2020. The next experience investigation will be prepared for the period July 1, 2019 through June 30, 2024.
2. The following table shows the estimated gain or loss from various factors that resulted in a decrease of $73,605,000 in the unfunded actuarial accrued liability (UAAL) from $5,702,095,000 to $5,628,490,000 during the fiscal year ending June 30, 2022.
3. The breakdown of the major reasons for the $73.6 million decrease in the UAAL are as follows:
   - The return on the actuarial value of assets was higher than the assumed rate of 7.20%, resulting in a decrease in the UAAL of $105.9 million due to valuation asset growth.
   - There was also a decrease in the UAAL of $117.1 million because the accrued liability contribution was greater than the interest on the prior year UAAL. This occurred due to the level dollar funding method used to amortize the UAAL (more payment applied to principal balance).
   - Partially offsetting these decreases to the UAAL was an increase in the UAAL of $103.8 million due to salary increases that were greater than expected.
   - There was also an increase in the UAAL of $60.0 million due to the actual 1.50% COLA for certain retirees and beneficiaries effective July 2022, rather than the anticipated 1.05% COLA.
   - There were other less significant gains due to mortality and turnover and retirement.

ANALYSIS OF THE CHANGE IN UNFUNDED ACTUARIAL ACCRUED LIABILITY
(in millions of dollars)

ITEM	AMOUNT OF INCREASE/ (DECREASE)
Interest (7.20%) added to previous UAAL	$ 410.6
Accrued liability contribution	(527.7)
Experience:	
Valuation asset growth	(105.9)
Pensioners' mortality	(31.9)
Turnover and retirements	(0.7)
New entrants	12.5
Salary increases	103.8
Method changes	0.0
Amendments (1.5% COLA)	60.0
Assumption change	0.0
Data changes	5.7
Miscellaneous changes	0.0
Total	$ (73.6)

Section VIII – Risk Assessment

Overview

Actuarial Standards of Practice (ASOP) No. 51, issued by the Actuarial Standards Board, provides guidance on assessing and disclosing risks related to pension plan funding. This guidance is binding on all credentialed actuaries practicing in the United States. This standard was issued as final in September 2017 with application to measurement dates on or after November 1, 2018.

The term "risk" frequently has a negative connotation, but from an actuarial perspective, it may be thought of as simply the fact that what actually happens in the real world will not always match what was expected, based on actuarial assumptions. Of course, when actual experience is better than expected, the favorable risk is easily absorbed. The risk of unfavorable experience will likely be unpleasant, and so there is an understandable focus on aspects of risk that are negative.

Risk usually can be reduced or eliminated at some cost. Consumers, for example, buy auto and home insurance to reduce the risk of accidents or catastrophes. Another way to express this concept, however, is that there is generally some reward for assuming risk. Thus, retirement plans invest not just in US Treasury bonds which have almost no risk, but also in equities which are considerably riskier – because they have an expected reward of a higher return that justifies the risk.

Under ASOP 51, the actuary is called on to identify the significant risks to the pension plan and provide information to help those sponsoring and administering the plan understand the implications of these risks. In this section, we identify some of the key risks for the System and provide information to help interested parties better understand these risks.

Investment Risk

The investment return on assets is the most obvious risk – and usually the largest risk – to funding a pension plan. To illustrate the magnitude of this risk, the following chart shows the Asset Volatility Ratio (AVR), defined as the fair value of assets divided by covered payroll.

($ in thousands)

Valuation	Fair Value of Assets	Covered Payroll	Asset Volatility Ratio
2017	$13,098,299	$2,546,492	5.14
2018	$13,517,186	$2,634,129	5.13
2019	$13,617,472	$2,611,965	5.21
2020	$13,502,286	$2,612,773	5.17
2021	$16,547,905	$2,477,691	6.68
2022	$13,830,510	$2,572,445	5.38

The asset volatility ratio is especially useful to compare across plans or through time. It is also frequently useful to consider how the AVR translates into changes in the Required Contribution Rate (actuarially determined employer contribution rate). For example, in the table below with an AVR of 6.00, if the market value return is 10% below assumed, or negative 2.80% (7.20% minus 10.00%) for the System, there will be an increase in the Required Contribution Rate of 1.15% of payroll in the first year. Without asset smoothing or without returns above the expected return in the next four years, the impact on the Required Contribution Rate would be 5.75%. A higher AVR would produce more volatility in the Required Contribution Rate.

AVR	Unsmoothed Amortization	Smoothed Amortization
5.0	4.79%	0.96%
6.0	5.75%	1.15%
7.0	6.71%	1.34%

Section VIII – Risk Assessment

Sensitivity Measures

Valuations are generally performed with a single set of assumptions that reflects the best estimate of future conditions, in the opinion of the actuary and typically the governing board. Note that under actuarial standards of practice, the set of economic assumptions used for funding must be consistent. To enhance the understanding of the importance of an assumption, a sensitivity test can be performed where the valuation results are recalculated using a different assumption or set of assumptions.

The following tables contains the key measures for the System using the valuation assumption for investment return of 7.20%, along with the results if the assumption were 6.20% or 8.20%. In this analysis, only the investment return assumption is changed. Consequently, there may be inconsistencies between the investment return and other economic assumptions such as inflation or payroll increases. In addition, simply because the valuation results under alternative assumptions are shown here, it should not be implied that CMC believes that either assumption (6.20% or 8.20%) would comply with actuarial standards of practice.

($ in thousands)

As of June 30, 2022	Current Discount Rate (7.2%)	-1% Discount Rate (6.2%)	+1% Discount Rate (8.2%)
Accrued Liability	$20,260,756	$22,427,604	$18,436,213
Unfunded Liability	$5,628,490	$7,795,338	$3,803,947
Funded Ratio (AVA)	72.2%	65.2%	79.4%
ADEC Rate*			
Old Plan	24.45%	32.14%	16.41%
New Plan	29.20%	36.89%	21.16%
GSEPs	25.51%	31.83%	18.45%

* Contribution rates are determined based on the Board’s current Funding Policy.

Mortality Risk

The mortality assumption is a significant assumption for valuation results, second only to the investment assumption in most situations. The System's mortality assumption utilizes a mortality table (with separate rates for males and females, as well as different rates by status) and a projection scale for how the mortality table is expected to improve through time.

The future, however, is not known, and actual mortality improvements may occur at a faster rate than expected, or at a slower rate than expected (or even decline). Although changes in mortality will affect the benefits paid, this assumption is carefully studied during the regular experience studies that the System conducts so that incremental changes can be made to smoothly reflect unfolding experience. The next experience investigation will be prepared for the period July 1, 2019 through June 30, 2024.

Contribution Risk

The System is primarily funded by member and employer contributions to the trust fund, together with the earnings on those accumulated contributions. Each year in the valuation, the Required Contribution Rate is determined, based on the System's funding policy. This rate is the sum of the rates for the normal cost for the plan, the amortization of the UAAL, and the administrative expenses. Since the Required Contribution Rate has always been made and that procedure is expected to continue, there is no Contribution Risk at this time.

Schedule A – Valuation Balance Sheet and Breakdown of Liabilities

**THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF
THE EMPLOYEES' RETIREMENT SYSTEM OF GEORGIA
AS OF JUNE 30, 2022
(Dollar amounts in thousands)**

	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	$ 13,325,775	
	- Death and survivor benefits	885,932	
	- Deferred vested benefits	693,257	
	Total		$ 14,904,964
(2)	Present value of prospective benefits payable on account of present active members		6,204,785
(3)	TOTAL ACTUARIAL LIABILITIES		$ 21,109,749
	PRESENT AND PROSPECTIVE ASSETS		
(4)	Actuarial value of assets		$ 14,632,266
(5)	Present value of total future contributions = (3)-(4)	$ 6,477,483	
(6)	Present value of future member contributions and employer normal contributions		848,993
(7)	Prospective unfunded accrued liability contributions = (5)-(6)		5,628,490
(8)	TOTAL PRESENT AND PROSPECTIVE ASSETS		$ 21,109,749

Schedule A – Valuation Balance Sheet and Breakdown of Liabilities

BREAKDOWN OF TOTAL AND ACCRUED LIABILITIES OF
THE EMPLOYEES' RETIREMENT SYSTEM OF GEORGIA
AS OF JUNE 30, 2022
(Dollar amounts in thousands)

	Total Liability	Accrued Liability
Active Members		
Old Plan / New Plan	$ 5,077,015	$ 4,689,702
GSEPS	1,127,770	666,090
Sub-Total	$ 6,204,785	$ 5,355,792
Retirees, Beneficiaries, and Deferred Vested Members		
Old Plan / New Plan	$ 14,794,655	$ 14,794,655
GSEPS	47,771	47,771
Sub-Total	$ 14,842,426	$ 14,842,426
Supplemental Guaranteed Lifetime Income (SGLI)	273	273
Inactive members due a refund	62,265	62,265
Total Actuarial Liability	$ 21,109,749	$ 20,260,756
Actuarial Value of Assets		14,632,266
Unfunded Actuarial Accrued Liability		$ 5,628,490

The total liability is the present value of future benefits for all current members as of the valuation date. The accrued liability is the present value of benefits that have been accrued as of the valuation date. Since all inactive members and retirees have accrued their full benefits, the total liability and accrued liability are the same. The difference between the total liability and the accrued liability is the present value of future normal costs for active members.

Schedule B – Development of Actuarial Value of Assets

(Dollar amounts in thousands)

(1)	Actuarial Value Beginning of Year		$	14,383,600
(2)	Fair Value End of Year		$	13,830,510
(3)	Fair Value Beginning of Year		$	16,547,905
(4)	Cash Flow			
	(a)	Contributions	$	655,863
	(b)	Benefit Payments		(1,510,086)
	(c)	Administrative Expenses		(7,577)
	(d)	Investment Expenses		(8,912)
	(e)	Net: (4)(a) + (4)(b) + (4)(c) + (4)(d)	$	(870,712)
(5)	Investment Income			
	(a)	Fair Total: (2) – (3) – (4)(e)	$	(1,846,683)
	(b)	Assumed Rate of Return for Current Year		7.20%
	(c)	Amount for Immediate Recognition: [(3) x (5)(b)] + [{(4)(a) + (4)(b) + (4)(c)} x (5)(b) x 0.5] – (4)(d)	$	1,169,336
	(d)	Amount for Phased-In Recognition: (5)(a) – (5)(c)		(3,016,019)
(6)	Phased-In Recognition of Investment Income			
	(a)	Current Year: (5)(d) / 5	$	(603,204)
	(b)	First Prior Year		577,408
	(c)	Second Prior Year		(52,068)
	(d)	Third Prior Year		(17,026)
	(e)	Fourth Prior Year		44,932
	(f)	Total Recognition of Investment Income	$	(49,958)
(7)	Actuarial Value End of Year: (1) + (4)(e) + (5)(c) + (6)(f)		$	14,632,266
(8)	Difference Between Fair & Actuarial Values: (2) – (7)		$	(801,756)
(9)	Rate of Return on Actuarial Value*			7.96%

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

Schedule C – Summary of Receipts and Disbursements

FAIR VALUE OF ASSETS

	YEAR ENDING	
Receipts for the Year	June 30, 2022 ($1,000's)	June 30, 2021 ($1,000's)
Contributions:		
Members	$ 36,130	$ 35,027
Non-employer	8,313	9,048
Employer	611,410	606,919
Subtotal	$ 655,853	$ 650,994
Administrative Expense Allotment	10	10
Net Investment Earnings	(1,855,595)	3,843,581
TOTAL	$ (1,199,732)	$ 4,494,585
Disbursements for the Year		
Benefit Payments	$ 1,502,904	$ 1,434,775
Refunds to Members	7,182	6,604
Administration Expense	7,577	7,587
TOTAL	$ 1,517,663	$ 1,448,966
Excess of Receipts over Disbursements	$ (2,717,395)	$ 3,045,619
Reconciliation of Asset Balances		
Asset Balance as of the Beginning of Year	$ 16,547,905	$ 13,502,286
Excess of Receipts over Disbursements	(2,717,395)	3,045,619
Asset Balance as of the End of Year	$ 13,830,510	$ 16,547,905
Estimated Rate of Return*	(11.51)%	29.33%

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

Schedule D – Outline of Actuarial Assumptions and Methods

Actuarial assumptions and methods adopted by the Board on December 17, 2020. Valuation interest rate adopted by the Board April 21, 2022.

VALUATION INTEREST RATE: 7.20% per annum, compounded annually, net of investment expenses, composed of a 2.50% inflation assumption and a 4.70% real rate of investment return assumption.

SALARY INCREASES:

Service	Assumed Annual Rate of Salary Increase
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

RATES OF DISABILITY: Representative values of the assumed annual rates of disability are as follows.

	Non-Law Enforcement		Law Enforcement
Age	Male	Female	
20	0.000%	0.000%	0.000%
25	0.000	0.000	0.000
30	0.010	0.005	0.050
35	0.040	0.010	0.125
40	0.200	0.085	1.125
45	0.375	0.215	2.625
50	0.625	0.365	3.625
55	0.875	0.565	4.125
60	--	--	--

RATES OF WITHDRAWAL: Representative values of the assumed annual rates of withdrawal are as follows.

Age	Non-Law Enforcement Years of Service 0-4	5-9	10 & Over
		Male	
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	--
		Female	
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	--

Age	Law Enforcement Years of Service 0-9	10 & Over
20	11.00%	
25	6.50	3.00%
30	5.25	3.00
35	5.25	3.00
40	5.25	2.50
45	5.25	2.50
50	5.25	2.50
55	--	--

Schedule D – Outline of Actuarial Assumptions and Methods

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

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%	3.80%	60.0%	42.0%	75.0%
52	5.0	3.80	50.0	42.0	60.0
55	6.0	5.80	50.0	40.0	15.0
57	6.0	7.30	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 D – Outline of Actuarial Assumptions and Methods

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%

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

Schedule D – Outline of Actuarial Assumptions and Methods

ADMINISTRATIVE EXPENSES: A rate of 0.35% of payroll is added to the normal contribution rate.

AMORTIZATION METHOD: Level dollar amortization.

ASSET METHOD: Actuarial value, as developed in Schedule B. The actuarial value of assets recognizes a portion of the difference between the fair value of assets and the expected fair value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between fair value and expected fair value.

COST-OF-LIVING ALLOWANCE (COLA): Beginning July 1, 2022 and each July 1 thereafter, a COLA increase will be determined as described in the Appendix of the Board Funding Policy shown in Schedule F of this report.

The assumed COLA is 1.05% annually and was determined based on the 30-year average annual COLA calculated under the median projection output of a stochastic projection of assets and liabilities prepared using the following parameters:

- For the actual fair value of asset returns, 1,000 annual returns are randomly sampled for each year of the projection period from a normal distribution of returns with a geometric mean return of 7.0% and an annual standard deviation of 12.0%.

- For the Variable COLA model, 1,000 rates of change in the CPI are randomly generated for each year of the projection period from a normal distribution with a geometric mean rate of CPI change of 2.5% and an annual standard deviation of 2.5%.

- The generated rates of return and CPI change are organized into 1,000 scenarios of projected years of rates. We verify the medians of the geometric means and annual standard deviation of the 1,000 generated scenarios is representative of the distributions from which they are generated.

- Valuation results are determined for each of the 1,000 annual scenarios for each year of the projection, including expected annual COLAs following the procedure outlined in the Appendix of the Board Funding Policy shown in Schedule F.

DEATH BENEFITS: It is assumed that 100% of the membership will select a beneficiary with the male three years older than the female.

VESTED TERMINATION BENEFITS: It is assumed that 75% of active members who terminate with 10 or more years of service before retirement will receive a benefit beginning at age 60 and 25% will receive a refund of member contributions.

Schedule D – Outline of Actuarial Assumptions and Methods

SICK LEAVE: Assumed load on service at retirement for the practice of allowing members to convert forfeited sick leave is as follows:

- Old Plan members who retire with 34 years of service – 4.00%
- Old Plan members who retire on normal retirement – 2.00%
- Old Plan members who retire on early retirement – 1.50%
- All New Plan and GSEPS retirements – 3.25%
- All Law Enforcement retirements – 7.00%

VALUATION METHOD: Entry age Normal 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 7.20%), of each active member's expected benefit at retirement or death is determined, based on his age, service, sex and compensation. The calculations take into account the probability of a member's death or termination of employment prior to becoming eligible for a benefit, as well as the possibility of his terminating with a service, disability or survivor's benefit. Future salary increases are also anticipated. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members and beneficiaries and inactive members to obtain the present value of all expected benefits payable from the System on account of the present group of members and beneficiaries.
2. The employer contributions required to support the benefits of the System are determined following a level funding approach and consist of a normal contribution and an accrued liability contribution.
3. The normal contribution is determined using the "entry age normal" method. Under this method, a calculation is made to determine the uniform and constant percentage rate of employer contribution which, if applied to the compensation of the average new member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf.
4. The unfunded accrued liability is determined by subtracting the present value of prospective employer normal contributions and member contributions, together with the current actuarial value of assets held, from the present value of expected benefits to be paid from the System.

Schedule F – Board Funding Policy

Funding Policy of the ERS Board of Trustees

The purpose of this Funding Policy is to state the overall objectives for the Employees' Retirement System of Georgia (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 ERS Board of Trustees that the Funding Policy outlined herein will remain unchanged until the objectives below are met.

This Funding Policy supercedes and replaces the Funding policy that was originally adopted by the Board of Trustees on December 19, 2013 and most recently amended on June 18, 2020.

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 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 an increasing funded ratio (ratio of actuarial value of assets to actuarial accrued liabilities) that reflects a trend of improved actuarial condition. The long-term objective is 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 within 20 years of the valuation date for the first valuation conducted following the adoption of this Policy (i.e. the June 30, 2021 valuation date).
- **Unfunded Actuarial Accrued Liability (UAAL)**
  - **Transitional UAAL** – The UAAL established as of the initial valuation date for which this funding policy is adopted (June 30, 2021) shall be known as the Transitional UAAL.
  - **New Incremental UAAL** – Each subsequent valuation will produce a New Incremental UAAL consisting of all benefit, assumption and method changes and experience gains and/or losses that have occurred since the previous valuations.

Schedule F – Board Funding Policy

- **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 Rates**
  - **Employer Normal Contribution Rate** – the contribution rate determined as of the valuation date each year based on the provisions of Georgia Code Section 47-2-55 (1).
  - 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.
  - The required employer contribution rate shall not be less than the Employer Normal Contribution Rate unless the funded ratio is greater than or equal to 105%, as determined by the actuarial valuation in which the employer contribution rate is set.
  - In no event shall the employer contribution rate decrease by more than 2% from one fiscal year to the next fiscal year, unless the Board specifically elects to suspend the 2% maximum for a given valuation year.
  - 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), is expected to maintain reasonably stable contribution rates over time.

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:
  - Effective with the June 30, 2021 valuation date, 7.20% net of investment expenses.
  - Effective with the June 30, 2022 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 Accrued Liability and Normal Cost of the System will include an amount sufficient to amortize and prefund a variable Cost-of-Living Adjustment (COLA) for eligible retirees and beneficiaries of the System, as described in the Appendix.
- 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.

Schedule F – Board Funding Policy

The employer contribution rates determined in an annual actuarial valuation will be at least sufficient to:

1. Satisfy the annual normal cost of the System, and
2. Amortize the UAAL as a level dollar amount over a period not to exceed 20 years (for the UAAL as of the June 30, 2021 valuation date, and for each successive year of gains and losses incurred in years following the June 30, 2021 valuation date).

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 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.

Adopted: April 21, 2022

APPENDIX

Beginning with the June 30, 2021 actuarial valuation, the Actuarial Accrued Liability and the Normal Cost of the System will include an amount sufficient to amortize and prefund a variable Cost-of-Living Adjustment (COLA) for eligible retirees and beneficiaries of the System. The manner in which such prefunded COLA will be calculated is described in this Appendix.

Effective July 1, 2022, unless otherwise noted.

Definitions

1. Actuarial Rate of Return: based on the approximate five-year average annual investment rate of return and assumptions regarding the System's cash flows; calculated by the System's actuaries in the annual valuation (see valuation Schedule B – Development of Actuarial Value of Assets).

2. COLA Rate: the percentage increase to be applied to the payee's monthly retirement benefit under the System.

3. Excess Return: the difference between the Actuarial Rate of Return and the Hurdle Rate.

4. Hurdle Rate: the minimum investment performance, as measured against the Actuarial Rate of Return, required in order for a COLA to be considered in a given year.

5. Normal Retirement Date: Generally, age 60 (55 for certain law enforcement members) with 10 years of service or any age with 30 years of service.

6. Retirement Date: the effective date of a member's retirement.

7. Shareable Portion: determined by multiplying the Excess Return by a factor which is dependent on the System's funding ratio.

8. Supplemental Guaranteed Lifetime Income (SGLI): monthly payments from the System which are funded entirely by one or more rollovers from either or both of a retiree's Peach State Reserves 401(k) or 457 plans, and not based on the retiree's years of service as a member of the System.

Determination of COLA

1. The COLA for a given fiscal year will be effective no earlier than July 1 following the approval of the most recent actuarial valuation.

2. The Hurdle Rate is set at 6.00%.

3. Determine the Excess Return as the difference between the Actuarial Rate of Return in the most recent actuarial valuation and the Hurdle Rate.
    a. If the Actuarial Rate of Return is below the Hurdle Rate, the Excess Return is 0%, and no COLA will be paid for that year.
    b. If the Actuarial Rate of Return is above the Hurdle Rate, the Excess Return is greater than 0%. Continue to Step 4.

4. Determine the Shareable Portion by multiplying the Excess Return by the factor returned from the following table, based on the most recent approved actuarial valuation:

System Funding Ratio	Factor
< 70.00%	0.00
70.00% - 79.99%	0.25
80.00% - 89.99%	0.50
90.00% - 99.99%	0.75
>= 100.00%	1.00

5. Determine the SSA OASDI COLA rate for the current calendar year, as published on www.ssa.gov (generally in October or November of the preceding calendar year).

6. The COLA Rate is the lesser of the Shareable Portion and the SSA COLA rate as determined in Step 5, rounded to the nearest 0.25%.
    a. However, in no event shall the COLA Rate be less than 0% or greater than 3%.

7. The COLA will be paid to all statutorily eligible retirees who have surpassed the later of their Retirement Date or Normal Retirement Date by at least 12 months.
    a. The COLA will also be paid to beneficiaries of deceased members or retirees who have otherwise met the requirements of this Step 7.
    b. A statutorily eligible individual is one who first became a member of this System before July 1, 2009.

8. The COLA will also be paid to Disabled retirees (who are statutorily eligible per Step 7b above) who have surpassed the later of their Disability Retirement Date or their 44th birthday by at least 12 months.
    a. The COLA will also be paid to beneficiaries of deceased Disabled retirees who have otherwise met the requirements of this Step 8.

9. In no event will the COLA Rate be added or applied to that portion of a retiree's or beneficiary's monthly benefit payment which is in excess of one-twelfth (1/12) of the Social Security Wage Base for that calendar year, as published on www.ssa.gov.

10. In no event will the COLA Rate be added or applied in any fashion to any retiree's SGLI payments.

Schedule G – Amortization of UAAL

AMORTIZATION OF TRANSITIONAL UAAL
(Dollar amounts in thousands)

Valuation Date	Amortization Period	Balance of Transitional UAAL	Annual Amortization Payment
6/30/2021	20	$5,702,095	$546,633
6/30/2022	**18**	**5,566,013**	**561,553**
6/30/2023	17	5,405,213	561,553
6/30/2024	16	5,232,836	561,553
6/30/2025	15	5,048,048	561,553
6/30/2026	14	4,849,954	561,553
6/30/2027	13	4,637,598	561,553
6/30/2028	12	4,409,953	561,553
6/30/2029	11	4,165,916	561,553
6/30/2030	10	3,904,310	561,553
6/30/2031	9	3,623,867	561,553
6/30/2032	8	3,323,233	561,553
6/30/2033	7	3,000,953	561,553
6/30/2034	6	2,655,469	561,553
6/30/2035	5	2,285,110	561,553
6/30/2036	4	1,888,085	561,553
6/30/2037	3	1,462,474	561,553
6/30/2038	2	1,006,220	561,553
6/30/2039	1	517,115	554,347
6/30/2040	0	0	0
6/30/2041	0	0	0

Schedule G – Amortization of UAAL

AMORTIZATION OF 2022 INCREMENTAL UAAL
(Dollar amounts in thousands)

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2022	Annual Amortization Payment
6/30/2022	**20**	**$62,477**	**$5,989**
6/30/2023	19	60,986	5,989
6/30/2024	18	59,388	5,989
6/30/2025	17	57,674	5,989
6/30/2026	16	55,837	5,989
6/30/2027	15	53,868	5,989
6/30/2028	14	51,757	5,989
6/30/2029	13	49,495	5,989
6/30/2030	12	47,069	5,989
6/30/2031	11	44,468	5,989
6/30/2032	10	41,681	5,989
6/30/2033	9	38,692	5,989
6/30/2034	8	35,489	5,989
6/30/2035	7	32,055	5,989
6/30/2036	6	28,373	5,989
6/30/2037	5	24,427	5,989
6/30/2038	4	20,196	5,989
6/30/2039	3	15,661	5,989
6/30/2040	2	10,799	5,989
6/30/2041	1	5,587	5,989
6/30/2042	0	0	0

AS INTERPRETED FOR VALUATION PURPOSES

The Employees' Retirement System of Georgia (ERS) was established February 3, 1949 to provide retirement benefits and other benefits to employees of the State of Georgia. The commencement date was January 1, 1950. "Old Plan" means the plan applicable to members beginning employment prior to July 1, 1982, "New Plan" means the plan applicable to members employed on or after July 1, 1982 and before January 1, 2009, and "GSEPS" means the plan applicable to members employed on or after January 1, 2009. The following summary describes the main provisions of the System.

Normal Retirement Benefit

Eligibility

A member is eligible for normal retirement upon the attainment of age 60 and 10 years of creditable service (prior service plus membership service plus purchased service plus forfeited leave – minimum 960 hours) or 30 years of creditable service regardless of age. Certain Law Enforcement positions are eligible with attainment of age 55 and 10 years of creditable service.

Benefit

Old Plan

(A) x (B) x (C), where

(A) = Average final compensation (the average annual compensation of a member during the 24 consecutive calendar months of his creditable service that will yield the highest average)

(B) = Creditable service, and

(C) = .0115 + .0003 x (creditable service up to 35 years).

The minimum benefit is 2.00% of average final compensation times years of creditable service.

New Plan

2.00% of average final compensation multiplied by years of creditable service.

GSEPS

1.00% of average final compensation multiplied by years of creditable service.

Uniform division and judicial members may be eligible for additional minimum benefits.

With all plans, for members with retirement dates prior to July 1, 2013, a one-time 3.0% increase on the first $37,500 is made at time of retirement.

Early Retirement Benefit

Eligibility	A member is eligible for early retirement upon the attainment of 25 years of creditable service regardless of age.
Benefit	The annual early retirement benefit is determined in the same manner as the normal retirement benefit based on creditable service and average final compensation as of the early retirement date. If the member is less than age 60, the retirement benefit is reduced by the lesser of: (i) 7% for each year by which his age is less than 60, and (ii) 7% for each year by which his creditable service at retirement is less than 30. Uniform division and judicial members may be eligible for additional minimum benefits.

Disability Retirement Benefit

Old Plan and New Plan

Eligibility	A member is eligible for disability retirement after having at least 13 years and 4 months of service and being certified by the medical board as permanently disabled for the further performance of the duties of the position held at the time of disability.
Benefit	The annual disability retirement benefit is an immediate benefit with the amount depending upon service at the time of disability. Uniform division members may be eligible for an additional benefit if disabled in line of duty.

Service at Disability	Benefit
(1) 13 years 4 months to 18 years	75% of what the normal retirement benefit would have been had the member continued to work until age 60 with no further change in compensation
(2) Over 18 years to 22 years 9 months	100% of age 60 benefit

(3) Over 22 years 9 months to 27 years 6 months	75% of age 65 benefit
(4) Over 27 years 6 months	100% of age 65 benefit

GSEPS

Eligibility	A member is eligible for disability retirement after having at least 15 years of service and being certified by the medical board as permanently disabled for the further performance of the duties of the position held at the time of disability.
Benefit	The annual disability retirement benefit is an immediate benefit equal to 1.00% of average final compensation multiplied by years of credited service at disability.

Involuntary Retirement Benefit

Eligibility	Member prior to April 1, 1972, termination is involuntary and without prejudice, and member has more than 18 years of membership service. For members prior to February 13, 1962, the service requirement is more than 18 years of creditable service.
Benefit	Computed as for disability retirement.

Deferred Vested Retirement Benefit

Eligibility	10 years of creditable service. Member contributions not withdrawn.
Benefit	Accrued benefit deferred to age 60.

Death Benefit

Old Plan and New Plan

Eligibility	Benefit
(1) Before retirement, before age 60, before completing 13 years 4 months service	Refund of all employee contributions plus allowable interest.
(2) Before retirement, before age 60, after completing 13 years 4 months service	Benefit equal to disability retirement immediately prior to death under Option 2.

(3) Before retirement, after age 60, more than 10 years creditable service (5 years service if member prior to July 1, 1968)	Benefit equal to retirement immediately prior to death under Option 2.
(4) After retirement	Payments continued to spouse as determined by options (if any) elected before retirement.
GSEPS	
Eligibility	15 years of creditable service.
Benefit	Benefit equal to disability retirement immediately prior to death under Option 2.
Termination Benefit	
Eligibility	Termination with less than 10 years creditable service.
Benefit	Return of all member contributions and employer contributions made on behalf of member with allowable interest. Life insurance premiums paid by the employee are not refundable.
Payment Options	At application for retirement, a member must choose one of the following methods of payment. All forms are of equivalent actuarial value.
Maximum Benefit	Life annuity, payable to members for the member's life with the final payment (for month of member's death) going to member's designated beneficiary.
Option 1	Full cash refund, paying a reduced retirement benefit to members so that, upon member's death, the beneficiary receives a lump sum cash settlement equal to the difference between the member's accumulated contributions at retirement and the benefit payments due to member contributions received prior to member's death.
Option 2	Joint and 100% to survivor. Member receives a reduced benefit for life with the same benefit continuing for life of beneficiary upon member's death.
Option 3	Joint and 50% to survivor. Member receives a reduced benefit for life with one-half members' benefit continuing to beneficiary for life upon member's death.
Other Options	Other options are available with certain restrictions.

Schedule H – Summary of Main System Provisions

Post-Retirement Adjustments	As outlined in the Appendix of the Funding Policy adopted by the Board, shown in Schedule F.
Contributions	
By Members	Old Plan 4% of annual compensation up to $4,200 plus 6% of annual compensation over $4,200. A member with 34 or more years of service may cease contributing until age 65, when he must resume contributing if he continues employment and wishes to receive additional service credit. The State pays member contributions except for 1.25% of annual compensation. These State contributions paid on behalf of members are included in the member's account for refund purposes. Covered tax officials and their employees and covered employees of State Courts continue to pay their full member contributions. New Plan and GSEPS Member contributions are 1.25% of annual compensation.
By Employers	The employers contribute at a specified percentage of active member payroll determined annually by actuarial valuation. The State contribution is not subject to refund upon member termination.

Schedule I – Tables of Membership Data

The Number and Average Annual Compensation of Active Members by Age and Service as of June 30, 2022

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	No.	Avg. Pay
Under 25	526	946	19							1,491	$33,242
25 to 29	776	3,003	681	8						4,468	$39,405
30 to 34	617	2,542	2,231	291	22					5,703	$43,812
35 to 39	445	1,910	1,991	1,003	527	20				5,896	$47,479
40 to 44	404	1,705	1,608	965	1,437	474	9			6,602	$49,486
45 to 49	314	1,479	1,438	856	1,266	1,401	374	1		7,129	$51,808
50 to 54	306	1,391	1,352	851	1,211	1,218	1,043	166	3	7,541	$52,929
55 to 59	216	1,215	1,139	745	1,112	1,000	778	393	74	6,672	$51,879
60 to 64	153	766	907	595	776	646	431	230	128	4,632	$52,199
65 to 69	62	274	398	285	287	182	122	75	51	1,736	$55,738
70 & up	23	87	104	138	135	67	42	37	23	656	$56,752
Total	3,842	15,318	11,868	5,737	6,773	5,008	2,799	902	279	52,526	$48,975
Avg. Pay	$35,302	$41,889	$48,806	$54,168	$54,354	$57,566	$60,770	$65,611	$70,046		

Average Age: 45.5
Average Service: 9.9

Schedule I – Tables of Membership Data

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

Attained Age	Number of Members	Total Annual Benefits*	Average Annual Benefits
Under 50	77	$ 2,228,704	$ 28,944
50 - 54	562	17,113,554	30,451
55 - 59	2,067	61,296,909	29,655
60 - 64	6,318	157,277,674	24,894
65 - 69	9,542	240,019,067	25,154
70 - 74	10,127	285,163,627	28,159
75 - 79	7,153	216,304,758	30,240
80 - 84	3,938	115,259,558	29,269
85 - 89	1,907	53,499,195	28,054
90 - 94	702	16,227,070	23,115
95 & Over	188	3,999,895	21,276
Total	42,581	$ 1,168,390,011	$ 27,439

** Does not reflect the COLA granted by the Board effective July 1, 2022.*

Average Age: 71.2

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

Attained Age	Number of Members	Total Annual Benefits*	Average Annual Benefits
Under 50	830	$ 6,805,401	$ 8,199
50 - 54	355	3,414,970	9,620
55 - 59	402	4,606,712	11,459
60 - 64	516	6,882,284	13,338
65 - 69	666	10,768,886	16,169
70 - 74	932	17,402,060	18,672
75 - 79	979	19,364,195	19,780
80 - 84	801	15,690,217	19,588
85 - 89	585	10,031,450	17,148
90 - 94	274	4,887,698	17,838
95 & Over	108	1,998,635	18,506
Total	6,448	$ 101,852,508	$ 15,796

**Does not reflect the COLA granted by the Board effective July 1, 2022.*

Average Age: 69.1

Schedule I – Tables of Membership Data

NUMBER OF DISABLED RETIREES AND THEIR BENEFITS BY AGE

Attained Age	Number of Members	Total Annual Benefits*	Average Annual Benefits
Under 50	256	$ 8,991,542	$ 35,123
50 - 54	473	15,801,602	33,407
55 - 59	741	19,582,494	26,427
60 - 64	945	22,703,336	24,025
65 - 69	1,007	26,624,648	26,440
70 - 74	954	30,666,101	32,145
75 - 79	654	19,337,694	29,568
80 - 84	230	5,737,144	24,944
85 - 89	66	1,467,374	22,233
90 - 94	19	381,395	20,073
95 & Over	4	123,072	30,768
Total	5,349	$ 151,416,402	$ 28,307

Does not reflect the COLA granted by the Board effective July 1, 2022.

Average Age: 65.4

NUMBER OF DEFERRED VESTED AND THEIR BENEFITS BY AGE

Attained Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 35	28	$ 152,301	$ 5,439
35 - 39	324	2,982,297	9,205
40 - 44	873	9,653,032	11,057
45 - 49	1,181	14,547,772	12,318
50 - 54	1,651	21,032,117	12,739
55 - 59	1,902	24,548,935	12,907
60 - 64	652	7,099,038	10,888
65 & Over	182	1,880,763	10,334
Total	6,793	$ 81,896,255	$ 12,056

Average Age: 51.9

Schedule J – Special Contribution Rates

Groups that have Age 55 Retirement and Line-of-Duty Disability Benefits:

Public Safety #466

Revenue Agents #474

DNR Game Wardens #462

GBI Officers/Agents #471

PLAN	Additional Rate	Total Rate
Old Plan	0.00%	24.45%
New Plan	8.32%	37.52%
GSEPS	2.65%	28.16%

Groups that have Line-of-Duty Disability Benefits:

Deputy DNR Game Wardens #462

Probation Officers #467

Parole Officers – Pardons and Paroles #465

Dept of Community Supervision #477

PLAN	Additional Rate	Total Rate
Old Plan	0.00%	24.45%
New Plan	0.02%	29.22%
GSEPS	0.03%	25.54%

Group that has Age 55 Retirement:

Special Investigators Department of Revenue #474

PLAN	Additional Rate	Total Rate
New Plan	8.09%	37.29%
GSEPS	2.42%	27.93%

Appellate Court Judges: Total rate equal to 55.85% of payroll

GA ERS: Solvency Test

Actuarial Valuation as of 6/30	Actuarial Accrued Liability for: Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Members (Employer Funded Portion) (3)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets (1)	(2)	(3)
2022	$371,979	$14,904,964	$4,983,813	$14,632,266	100%	95.7%	0.0%
2021	371,048	14,782,338	4,932,309	14,383,600	100%	94.8%	0.0%
2020	372,510	13,406,538	4,596,749	13,556,622	100%	98.3%	0.0%
2019	371,147	13,077,253	4,380,820	13,481,219	100%	100.0%	0.7%
2018	372,375	12,927,796	4,512,270	13,412,046	100%	100.0%	2.5%
2017	368,935	12,729,977	4,415,986	13,088,185	100%	99.9%	0.0%
2016	368,281	12,592,980	4,238,427	12,854,518	100%	99.2%	0.0%
2015	367,462	12,520,321	4,211,744	12,675,649	100%	98.3%	0.0%
2014	385,058	12,108,737	4,498,168	12,376,120	100%	99.0%	0.0%
2013	405,841	11,935,364	4,641,244	12,129,803	100%	98.2%	0.0%

All dollar amounts are in thousands.

GA ERS: Schedule of Retirants Added to and Removed from Rolls

	Added to Rolls		Removed from Rolls		Roll End of Year			
Year Ended	Number	Annual Allowances* (in thousands)	Number	Annual Allowances* (in thousands)	Number	Annual Allowances* (in thousands)	% Increase in Annual Allowances	Average Annual Allowances
June 30, 2022	2,331	$48,423	1,816	$43,382	54,378	$1,421,659	0.4%	$26,144
June 30, 2021	2,724	58,426	1,893	45,432	53,863	1,416,618	0.9%	26,300
June 30, 2020	2,553	53,509	1,606	38,185	53,032	1,403,624	1.1%	26,467
June 30, 2019	2,777	58,673	1,357	32,574	52,085	1,388,300	1.9%	26,655
June 30, 2018	2,612	50,005	1,422	33,530	50,665	1,362,201	1.2%	26,886
June 30, 2017	2,630	45,833	1,420	32,372	49,475	1,345,726	1.0%	27,200
June 30, 2016	2,572	51,031	1,342	30,724	48,265	1,332,265	1.5%	27,603
June 30, 2015	2,656	54,003	1,350	30,927	47,035	1,311,958	1.8%	27,893
June 30, 2014	2,440	51,178	1,059	22,997	45,729	1,288,882	2.2%	28,185
June 30, 2013	3,664	88,855	1,176	26,334	44,348	1,260,701	5.2%	28,427

** Does not reflect any increases after the valuation date.*