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GRS
Gwinnett Retirement System

Gwinnett County
Board of Education's Retirement System

Report of the Actuary Prepared as of January 1, 2023

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September 27, 2023

Administrative Committee
Gwinnett County Board
of Education's Retirement System
437 Old Peachtree Road, NW
Suwanee, GA 30024-2978

Administrative Committee Members:

This report represents the results of the actuarial valuation of the Gwinnett County Board of Education's Retirement System as of January 1, 2023. The purpose of this report is to provide a summary of the funded status of the Plan as of January 1, 2023 and to determine the minimum required contribution amount for the 2024/2025 fiscal year. Our calculations were prepared based on member data and financial information provided by the System. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. The asset values used to determine unfunded liabilities are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts using the market value of assets would be different. The interest rate used for determining liabilities is based on the expected return on assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.

The System receives contributions from the County and Members. Members are required to contribute 1.00% of compensation which funds the long term disability benefits which are provided through the System of which the member is immediately vested. The annual contribution rate required by the Board of Education is 6.22% of compensation for the fiscal year ending June 30, 2025. This rate is sufficient to support the benefits of the System.

Since the previous valuation, the assumed rate of return for the market value of assets has remained unchanged. In our opinion, the valuation is complete and accurate, and the methodology and assumptions are reasonable as a basis for the valuation.

The System's unfunded liability was projected to be $66,642,816 as of January 1, 2023 taking into account total contributions from the County and Members of $101,455,951. The actual unfunded liability is $163,616,014 as of January 1, 2023. The increase in the unfunded liability is primarily due to a lower-than-expected rate of return on the actuarial value of assets, and larger than expected salary increases. A summary of the System's experience is presented in Section VII.

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The valuation is based on a series of actuarial assumptions, including an interest (actuarial asset return) rate of 7.15% per year. Actuarial gains and losses result when actual experience of the System (such as asset return, pay increases, turnover, deaths, etc.) is different from that expected by the actuarial assumptions.

A separate report will be required to disclose the financial reporting requirements under GASB statements 67 and 68. 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. New gains and losses are reflected in the unfunded accrued liability which is being amortized on a level dollar basis within a 30-year period.

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. 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 actuaries are members of the American Academy of Actuaries and have 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.

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

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

Sincerely yours,

Todd B. G

Todd B. Green ASA, EA, FCA, MAAA
President

Beverly V Bailey

Beverly V. Bailey, ASA, EA, FCA, MAAA
Senior Actuary

TBG:bvb

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THE GWINNETT COUNTY
BOARD OF EDUCATION'S RETIREMENT SYSTEM
REPORT OF THE ACTUARY
JANUARY 1, 2023

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	**January 1, 2023**	**January 1, 2022**
Number of active members	22,746	21,668
Annual earnable compensation	$ 1,310,795,912	$ 1,191,983,789
Number of retirees, disabilities and beneficiaries	11,549	10,945
Annual allowances	$ 121,698,617	$ 111,338,078
Assets:		
Market Value	$ 2,390,802,564	$ 2,815,522,176
Actuarial Value	2,693,760,341	2,592,867,322
Unfunded accrued liability	$ 163,616,014	$ 89,620,241
Contributions for Fiscal Year Ending June 30,	**2025**	**2024**
Actuarially Determined Contribution:		
Total Normal Rate	6.38%	6.29%
Administrative Expense Rate	0.13	0.14
Unfunded accrued liability	0.71	0.26
Total	7.22%	6.69%
Required Employer Contribution	6.22%	5.69%
Required Member Contribution	1.00	1.00
Total	7.22%	6.69%

2. Comments on the valuation results as of January 1, 2023 are given in Section IV and further discussion of the employer contribution levels is set out in Section V.

3. Schedule D of this report outlines the full set of actuarial assumptions and methods used to prepare the current valuation. The basis for the assumptions was an experience study dated May 8, 2017.

4. The actuarial cost method is the entry age normal cost method. Schedule E contains a brief description of this method.

5. The major benefit and contribution provisions of the System as reflected in the current valuation are summarized in Schedule F. There have been no changes since the previous valuation.

6. The required member contribution of 1.00% funds the long term disability benefit for which the member is immediately vested.

SECTION II – MEMBERSHIP

1. The following table shows the number of active members and their annual earnable and average compensation as of January 1, 2023 on whose account benefits may be payable under the Retirement System.

THE NUMBER AND ANNUAL EARNABLE AND AVERAGE COMPENSATION OF ACTIVE MEMBERS AS OF JANUARY 1, 2023

TOTAL NUMBER	ANNUAL COMPENSATION	AVERAGE COMPENSATION
22,746	$1,310,795,912	$57,628

2. The following table shows the number of inactive members as of January 1, 2023, together with the amount of their annual retirement allowances payable under the System as of that date and reflects a 1.2% cost of living adjustment effective July 1, 2023.

THE NUMBER AND ANNUAL RETIREMENT ALLOWANCE OF INACTIVE MEMBERS ON THE ROLL AS OF JANUARY 1, 2023

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES
Service Retirements	10,534	$ 110,932,347
Beneficiaries of Deceased Active and Retired Members	658	3,393,935
Disability Retirements	357	7,372,335
Deferred Vested Retirements not yet in Receipt of Benefits	5,035	44,258,293
Total	16,584	$ 165,956,910

SECTION III - ASSETS

1. As of January 1, 2023, the total market value of assets amounted to $2,390,802,564 as reported by the System. The actuarial value of assets used for the current valuation was $2,693,760,341. Schedule B shows the development of the actuarial value of assets as of January 1, 2023. The actuarial value of assets are $302,957,777 more than the market value of assets which indicates that actuarial losses will be recognized over the coming four year period. Absent of offsetting investment gains this will increase contributions in the future.
2. Schedule C shows receipts and disbursements of the System for the year preceding the valuation date and a reconciliation of the fund balances of the total 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 January 1, 2023.

2. The valuation balance sheet shows that the System has total prospective liabilities of $3,424,668,726, of which $1,439,516,757 is for the prospective benefits payable on account of present retired members, disabled members and beneficiaries of deceased members, $1,757,117,715 is for the prospective benefits payable on account of present active members, and $228,034,254 is on account of inactive members entitled to deferred vested benefits. Against these liabilities, the System has total present assets for valuation purposes of $2,693,760,341 as of January 1, 2023. The difference of $730,908,385 between the total liabilities and the total present assets represents the present value of contributions to be made in the future.

3. The contribution to the System consists of a normal contribution, a load for administrative expenses and an accrued liability contribution. The valuation indicates a total normal cost of $76,785,749. The normal cost rate as a percentage of valuation payroll of $1,203,105,490 is 6.38%. Valuation payroll is the total compensation of $1,310,795,912 as of the valuation date reduced for active members who are older than the fixed retirement ages of 70 for TRS Members and 75 for Non-TRS members, adjusted for decrement timing to the middle of the year. 6.38% of payroll is required to provide the benefits of the System.

4. The employer's required contribution is loaded for administrative expenses. The administrative expense load is 0.13%.

5. Prospective normal contributions at the rate of 6.38% have a present value of $567,292,371. When this amount is subtracted from $730,908,385, which is the present value of the total future contributions to be made by the employer, there remains $163,616,014 as the amount of future unfunded accrued liability contributions.

SECTION V – CONTRIBUTIONS PAYABLE TO THE SYSTEM

1. The System's funding policy provides for periodic employer contributions at rates, as determined by the Actuary, when expressed as a percent of annual covered payroll are sufficient to provide resources to pay benefits when due.
2. Employer contributions shall be a percentage of the compensation of active members consisting of a normal contribution rate, a load for administrative expenses and an unfunded accrued liability contribution rate as determined by actuarial valuation.
3. Members are required to contribute 1.00% of compensation which funds the long term disability benefit which is provided through the Retirement System. The member is immediately vested in this portion of the benefit.
4. The following table summarizes the contribution rates, which were determined by the January 1, 2023 valuation and are recommended for use.

ANNUAL REQUIRED CONTRIBUTION RATES
FOR FISCAL YEAR ENDING JUNE 30, 2025

CONTRIBUTION	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION
Normal Rate	6.38%
Administrative Expenses	0.13
Unfunded Accrued Liability	0.71
Total	7.22%
Employer Portion	6.22%
Member Portion	1.00
Total	7.22%

UNFUNDED LIABILITY BASES

Year	Description	Original Amount	Outstanding Balance as of January 1, 2022	2022 Amortization Payment	Outstanding Balance as of January 1, 2023	2023 Amortization Payment	Years Remaining as of January 1, 2023
2017	Transition Base	(55,617,963)	(32,672,675)	(7,466,721)	(27,008,179)	(7,466,721)	4
2017	Liability Gain	(10,620,724)	(10,006,633)	(812,234)	(9,851,798)	(812,234)	24
2017	Investment Loss	19,211,779	18,100,953	1,469,247	17,820,873	1,469,247	24
2017	Assumption Change	102,493,475	96,567,292	7,838,330	95,073,083	7,838,330	24
2018	Liability Loss	14,419,282	13,772,374	1,101,985	13,576,322	1,101,985	25
2018	Investment Loss	2,499,720	2,387,572	191,040	2,353,585	191,040	25
2019	Liability Loss	8,247,141	7,976,571	629,871	7,871,990	629,871	26
2019	Investment Loss	68,523,523	66,275,426	5,233,444	65,406,484	5,233,444	26
2019	Assumption Change	18,784,950	18,168,660	1,434,690	17,930,449	1,434,690	26
2020	Liability Loss	15,214,025	14,892,058	1,161,737	14,712,039	1,161,737	27
2020	Investment Loss	30,835,116	30,182,567	2,354,558	29,817,712	2,354,558	27
2020	Assumption Change	(42,250,501)	(41,356,374)	(3,226,233)	(40,856,447)	(3,226,233)	27
2021	Liability Gain	(6,979,395)	(6,907,479)	(532,845)	(6,830,420)	(532,845)	28
2021	Investment Gain	(32,859,938)	(32,521,346)	(2,508,705)	(32,158,545)	(2,508,705)	28
2021	Assumption Change	32,203,727	31,871,897	2,458,606	31,516,341	2,458,606	28
2022	Liability Gain	(13,732,015)	(13,732,015)	(1,048,376)	(13,590,519)	(1,048,376)	29
2022	Investment Gain	(73,378,607)	(73,378,607)	(5,602,119)	(72,622,507)	(5,602,119)	29
2023	Liability Loss*	4,302,136			4,302,136	328,448	30
2023	Investment Loss	66,153,415			66,153,415	5,050,509	30
Total			89,620,241	2,676,275	163,616,014	8,055,232	

* Includes differences due to timing of contributions of $(26,517,647)

SECTION VI – ADDITIONAL DISCLOSURES

1. Distribution of the number of employees by type of membership as of January 1, 2023:

GROUP	NUMBER
Retirees, disabilities and beneficiaries currently receiving benefits	11,549
Terminated employees entitled to benefits but not yet receiving benefits	5,035
Active plan members	22,746
Total	39,330

2. 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)
1/01/2017	$1,930,619,149	$1,986,085,716	$55,466,567	97.2%	$981,477,067	5.7%
1/01/2018	2,036,881,675	2,112,124,326	75,242,651	96.4	1,022,578,053	7.4
1/01/2019	2,093,186,076	2,266,892,080	173,706,004	92.3	1,062,023,886	16.4
1/01/2020	2,193,385,491	2,373,029,571	179,644,080	92.4	1,123,025,427	16.0
1/01/2021	2,368,393,528	2,542,658,107	174,264,579	93.1	1,117,073,924	15.6
1/01/2022	2,592,867,322	2,682,487,563	89,620,241	96.7	1,191,983,789	7.5
1/01/2023	2,693,760,341	2,857,376,355	163,616,014	94.3	1,310,795,912	12.5

3. Summary of actuarial methods and assumptions:

Valuation date	January 1, 2023
Actuarial cost method	Entry age
Amortization method	Level dollar open
Remaining amortization period	4 – 30 years
Asset valuation method	5-year smoothed market
Actuarial assumptions:	
Investment rate of return*	7.15%
Projected salary increase	
TRS members	3.25 – 6.86%
Non-TRS members	3.25%
Cost-of-living adjustments	2.40% annually
*Includes inflation at	2.40%

SECTION VII – EXPERIENCE

Analysis of Actuarial Gains or (Losses)

(1)	Unfunded Accrued Liability (UAL) as of January 1, 2022	$	89,620,241
(2)	Normal cost as of January 1, 2022 (Including Expenses)		70,705,223
(3)	Contributions		(101,455,951)
(4)	Interest		7,773,303
(5)	Expected UAL at January 1, 2023 (1) + (2) + (3) + (4)	$	66,642,816
(6)	Actual UAL at January 1, 2023		163,616,014
(7)	Total Gain/(Loss) (5) – (6)	$	(96,973,198)
(8)	Asset Gain/(Loss)		(66,153,415)
(9)	Plan Amendments		0
(10)	Assumption and Method Changes		0
(11)	Liability Gain/(Loss) (7) – (8) – (9) – (10)	$	(30,819,783)
	(a) Retirements		(280,065)
	(b) Terminations		8,708,519
	(c) Mortality		(2,608,110)
	(d) Disability		(796,482)
	(e) Salary Increases		(17,319,970)
	(f) New Entrants		(5,136,342)
	(g) Retiree COLA		(7,763,714)
	(h) Other		(5,623,619)

Investment (Gain) / Loss Analysis

(1)	Actuarial Value of Assets as of January 1, 2022	$	2,592,867,322
(2)	Interest on Item [(1) x 7.15%]		185,390,014
(3)	Contributions for 2022 Plan Year		101,455,951
(4)	Interest on [(3) x 7.15% x (1/2)]		3,627,050
(5)	Benefit Payments for 2022 Plan Year (Including Administrative Expenses)		(119,166,383)
(6)	Interest on Item [(5) x 7.15% x (1/2)]		(4,260,198)
(7)	Expected Actuarial Value as of January 1, 2023	$	2,759,913,756
(8)	Actuarial Value of Assets as of January 1, 2023	$	2,693,760,341
(9)	Gain / (Loss) [(8) – (7)]	$	(66,153,415)

SECTION VIII – RISK CONSIDERATIONS

A typical retirement plan faces many different risks, but the greatest risk is the inability to make benefit payments when due. If plan assets are depleted, benefits may not be paid which could create legal and litigation risk or the plan could become "pay as you go". The term "risk" is most commonly associated with an outcome with undesirable results. However, in the actuarial world, risk can be translated as uncertainty. The actuarial valuation process uses many actuarial assumptions to project how future contributions and investment returns will meet the cash flow needs for future benefit payments. Of course, we know that actual experience will not unfold exactly as anticipated by the assumptions and that uncertainty, whether favorable or unfavorable, creates risk. ASOP 51 defines risk as the potential of actual future measurements to deviate from expected results due to actual experience that is different than the actuarial assumptions.

The various risk factors for a given plan can have a significant impact – positive or negative – on the actuarial projection of liability and contribution rates.

There are a number of risks inherent in the funding of a defined benefit plan. These include:

- economic risks, such as investment return and price inflation;
- demographic risks such as mortality, payroll growth, aging population including impact of baby boomers, and retirement ages;
- contribution risk, i.e., the potential for contribution rates to be too high for the plan sponsor/employer to pay and
- external risks such as the regulatory and political environment.

There is a direct correlation between healthy, well-funded retirement plans and consistent contributions equal to the full actuarial contribution rate each year. The Plan is primarily funded by member and employer contributions to the trust fund, together with the earnings on these accumulated contributions. These contributions fund benefit accruals for current active members and administrative expenses. The remainder of the contributions amortizes the unfunded actuarial accrued liability. The required contribution rate is the sum of the rates for the normal cost for the plan and the amortization of the unfunded actuarial accrued liability. The required contribution rate is sensitive to increases in the UAAL and periods of lower than expected returns would lead to much higher contribution rates as a percentage of payroll.

The other significant risk factor for the Plan is investment return because of the volatility of returns and the size of plan assets compared to payroll. A perusal of historical returns over 10-20 years reveals that the actual return each year is rarely close to the average return for the same period. This is to be expected, given the underlying capital market assumptions and the Plan's asset allocation. To the extent market rates of interest affect the expected return on assets, there is a risk of change to the discount rate which determines the present value of liabilities and actuarial valuation results.

A key demographic risk for the Plan is improvements in mortality (longevity) greater than anticipated. While the actuarial assumptions reflect a margin for improvement in mortality experience these assumptions are refined every experience study, the risk arises because there is a possibility of some sudden shift, perhaps from a significant medical breakthrough that could quickly increase liabilities. Likewise, there is some possibility of a significant public health crisis that could result in a significant number of additional deaths in a short time period, which would also be significant, although more easily absorbed. While either of these events could happen, it represents a small probability and thus represents much less risk than the volatility associated with investment returns.

The following exhibits summarize some historical information that helps indicate how certain key risk metrics have changed over time. Many are due to the maturing of the retirement system.

Historical Asset Volatility Ratios
(in 1,000's)

As a retirement system matures, the size of the market value of assets increases relative to the covered payroll of active members, on which the Plan is funded. The size of the plan assets relative to covered payroll, sometimes referred to as the asset volatility ratio, is an important indicator of the contribution risk for the Plan. The higher this ratio, the more sensitive a plan's contribution rate is to investment return volatility. In other words, it will be harder to recover from investment losses with increased contributions.

Valuation Year	Market Value of Assets ($ Millions)	Covered Payroll ($ Millions)	Asset Volatility Ratio
2009	949	931	1.02
2010	1,164	899	1.29
2011	1,332	889	1.50
2012	1,346	866	1.55
2013	1,500	841	1.78
2014	1,696	854	1.99
2015	1,769	896	1.97
2016	1,737	945	1.84
2017	1,836	981	1.87
2018	2,068	1,023	2.02
2019	1,914	1,062	1.80
2020	2,249	1,123	2.00
2021	2,479	1,117	2.22
2022	2,816	1,192	2.36
2023	2,391	1,311	1.82

The assets at December 31, 2022 are 182% of payroll, so underperforming the investment return assumption by 1.00% (i.e., earn 6.15% for one year) is equivalent to 1.82% of payroll. While the actual impact in the first year is mitigated by the asset smoothing method and amortization of the UAL, this illustrates the risk associated with volatile investment returns.

Historical Cash Flows
(in 1,000's)

Plans with negative cash flows will experience increased sensitivity to investment return volatility. Cash flows, for this purpose, are measured as contributions less benefit payments and administrative expenses. If the Plan has negative cash flows and then experiences returns below the assumed rate, there are fewer assets to be reinvested to earn the higher returns that typically follow. The Plan has negative cash flows of around which ranges from 1% to 2% for the prior five years, so there is no immediate concern.

Valuation Year	Market Value of Assets ($ Millions)	Contributions ($ Millions)	Benefit Payments & Expenses ($ Millions)	Net Cash Flow ($ Millions)	Net Cash Flow as % of Market Value
2009	949	63	30	33	3.48
2010	1,164	64	38	26	2.23
2011	1,332	49	41	8	0.60
2012	1,346	53	44	9	0.67
2013	1,500	42	50	(8)	(0.53)
2014	1,696	35	55	(20)	(1.18)
2015	1,769	45	61	(16)	(0.90)
2016	1,737	44	67	(23)	(1.32)
2017	1,836	41	73	(32)	(1.74)
2018	2,068	46	80	(34)	(1.64)
2019	1,914	60	87	(27)	(1.41)
2020	2,249	74	94	(20)	(0.89)
2021	2,479	85	102	(17)	(0.69)
2022	2,816	93	110	(17)	(0.60)
2023	2,391	101	119	(18)	(0.75)

Liability Maturity Measurement
(in 1,000's)

Most public sector retirement systems have been in operation for many years. As a result, they have aging plan populations, and in some cases declining active populations, resulting in an increasing ratio of retirees to active members and a growing percentage of retiree liability. The retirement of the remaining baby boomers over the next decade is expected to further exacerbate the aging of the retirement system population. With more of the total liability residing with retirees, investment volatility has a greater impact on the funding of the system since it is more difficult to restore the system financially after losses occur when there is comparatively less payroll over which to spread costs. The following two tables demonstrate the ratio of the System's retiree liability compared to the total accrued liability and the ratio of the number of retirees and beneficiaries to the number of active members.

Valuation Year	Retiree Liability ($ Millions)	Total Actuarial Liability ($ Millions)	Retiree Percentage
2009	430	1,145	0.38
2010	483	1,240	0.39
2011	538	1,348	0.40
2012	598	1,337	0.45
2013	709	1,458	0.49
2014	779	1,540	0.51
2015	865	1,657	0.52
2016	953	1,776	0.54
2017	1,080	1,986	0.54
2018	1,173	2,112	0.56
2019	1,281	2,267	0.57
2020	1,342	2,373	0.57
2021	1,454	2,543	0.57
2022	1,543	2,682	0.58
2023	1,668	2,857	0.58

Historical Member Statistics

Valuation Year	Active Count	Retiree Count	Active to Retiree Ratio
2009	20,478	5,947	3.44
2010	20,551	6,435	3.19
2011	20,425	6,976	2.93
2012	19,991	7,593	2.63
2013	19,586	8,542	2.29
2014	19,906	9,329	2.13
2015	20,254	10,256	1.97
2016	20,596	11,187	1.84
2017	20,865	12,078	1.73
2018	20,953	12,992	1.61
2019	21,239	13,845	1.53
2020	21,508	14,624	1.47
2021	21,059	15,303	1.38
2022	21,668	15,898	1.36
2023	22,746	16,584	1.37

SCHEDULE A

VALUATION BALANCE SHEET
SHOWING THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF THE GWINNETT COUNTY BOARD OF EDUCATION'S RETIREMENT SYSTEM AS OF JANUARY 1, 2023

ASSETS		
Actuarial Value of Assets		$ 2,693,760,341
Present value of future employer contributions		
Normal contributions	$ 567,292,371	
Unfunded accrued liability contributions	163,616,014	
Total Prospective Contributions		730,908,385
Total Assets		$ 3,424,668,726
LIABILITIES		
Present value of prospective benefits payable on account of present retired members, disabled members and beneficiaries of deceased members		$ 1,439,516,757
Present value of prospective benefits payable on account of present active and inactive members and members entitled to deferred vested benefits		$ 1,985,151,969
Total Liabilities		$ 3,424,668,726

SCHEDULE B

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS
AS OF JANUARY 1, 2023

Valuation date January 1:	2022	2023	2024	2025	2026	2027
A. Actuarial Value Beginning of Year	$2,368,393,528	$2,592,867,322				
B. Market Value End of Year	2,815,522,176	2,390,802,564				
C. Market Value Beginning of Year	2,479,304,515	2,815,522,176				
D. Cash Flow						
D1. Contributions	$ 92,561,909	$ 101,455,951				
D2. Transfers	0	0				
D3. Benefit Payments	(108,557,371)	(117,406,453)				
D4. Administrative Expenses	(1,619,745)	(1,759,930)				
D5. Investment Expenses	(5,691,240)	(4,897,430)				
D6. Net	$ (23,306,447)	(22,607,862)				
E. Investment Income						
E1. Market Total: B.-C.-D6.	$ 359,524,108	$ (402,111,750)				
E2. Assumed Rate	7.15%	7.15%				
E3. Amount for Immediate Recognition	182,331,769	205,574,118				
E4. Amount for Phased-In Recognition	177,192,339	(607,685,868)				
F. Phased-In Recognition of Investment Income						
F1. Current Year: 0.20*E4.	$ 35,438,468	$ (121,537,174)	$ 0	$ 0	$ 0	$ 0
F2. First Prior Year	16,720,842	35,438,468	(121,537,174)	0	0	0
F3. Second Prior Year	43,433,824	16,720,842	35,438,468	(121,537,174)	0	0
F4. Third Prior Year	(56,129,195)	43,433,824	16,720,842	35,438,468	(121,537,174)	0
F5. Fourth Prior Year	25,984,533	(56,129,197)	43,433,826	16,720,842	35,438,467	(121,537,172)
F6. Total Recognized Investment Gain	$ 65,448,472	$ (82,073,237)	$ (25,944,038)	$ (69,377,864)	$ (86,098,707)	$ (121,537,172)
G. Actuarial Value End of Year:						
A.+D6.+E3.+F6.	$2,592,867,322	$2,693,760,341				
H. Difference Between Market & Actuarial Values	$ 222,654,854	$ (302,957,777)	$(277,013,739)	$ (207,635,875)	$ (121,537,172)	$ 0
I. Market Value Rate of Return	14.32%	-14.50%				
J. Actuarial Value Rate of Return	10.26%	4.59%				

The Actuarial Valuation of Assets recognizes assumed investment income (line E3) fully each year. Differences between actual and assumed investment income (line E4) are phased in over a closed 5 year period. During periods when investment performance exceeds the assumed rate, Actuarial Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Actuarial Value of Assets will tend to be greater than market value. If assumed rates are exactly realized for 4 consecutive years, actuarial value will become equal to market value.

SCHEDULE C

TOTAL FUND SUMMARY OF RECEIPTS AND DISBURSEMENTS

	YEAR ENDING	
Receipts for the Year	January 1, 2023	January 1, 2022
Contributions:		
Employer	$ 88,097,797	$ 80,353,739
Members	13,358,154	12,208,170
Subtotal	$ 101,455,951	$ 92,561,909
Investment Income	(407,009,180)	353,832,868
TOTAL	$ (305,553,229)	$ 446,394,777
Disbursements for the Year		
Benefit Payments	$ 117,406,453	$ 108,557,371
Expenses	1,759,930	1,619,745
TOTAL	$ 119,166,383	$ 110,177,116
Excess of Receipts over Disbursements	$ (424,719,612)	$ 336,217,661
Reconciliation of Asset Balances		
Asset Balance as of the Beginning of Year (Market Value)	$ 2,815,522,176	$ 2,479,304,515
Adjustments	0	0
Excess of Receipts over Disbursements	(424,719,612)	336,217,661
Asset Balance as of the End of Year (Market Value)	$ 2,390,802,564	$ 2,815,522,176

SCHEDULE D

OUTLINE OF ACTUARIAL ASSUMPTIONS AND METHODS

INTEREST RATE: 7.15% per annum, compounded annually, net of investment expenses and including inflation at 2.40%.

SALARY INCREASES: Sample rates below, plus an annual wage inflation rate of 2.40% and wage growth rate of 0.85%.

Annual Merit Rates		
Service	TRS Members	Non-TRS Members
0	3.50%	0.00%
1	2.25	0.00
2	2.00	0.00
3	1.75	0.00
4	1.50	0.00
5	1.25	0.00
6	1.00	0.00
7	0.75	0.00
8	0.50	0.00
9 - 14	0.25	0.00
15+	0.00	0.00

SERVICE RETIREMENT:

Annual Rates			
Age	TRS Members		Non-TRS Members
	< 30 years of Service	30+ years of Service	
40	10.0%	20.0%	
45	10.0	20.0	
50	10.0	35.0	
55	10.0	35.0	
60	26.0	40.0	13.0%
65	36.0	40.0	18.0
70	100.0	100.0	18.0
75	100.0	100.0	100.0

DISABILITY RETIREMENT:

Annual Rates of Disability		
Age	TRS	PSERS
20	0.01%	0.10%
25	0.02	0.10
30	0.04	0.10
35	0.05	0.20
40	0.07	0.30
45	0.10	0.40
50	0.13	0.50
55	0.16	0.60
60	0.20	0.70
64	0.20	0.70
65	0.20	0.70

WITHDRAWAL:

Annual Rates of Withdrawal		
Service	TRS Members	Non-TRS Members
0	15.63%	20.00%
1	13.00	16.00
2	11.00	12.10
3	9.44	9.90
4	8.09	8.50
5	7.04	6.82
6	6.28	6.09
7	5.52	5.64
8	4.76	5.18
9	4.25	4.82
10	3.75	4.45
11	3.75	4.70
12	3.75	4.40
13	3.75	4.20
14	3.75	4.00
15+	3.75	3.80

MORTALITY RATES:

TRS Members: The Pub-2010 Teachers Headcount Weighted Below Median Healthy Retiree mortality table (ages set forward one year and adjusted 106%) with the MP-2019 Projection scale applied generationally is used for death after service retirement and beneficiaries. The rates of improvement have been reduced by 20% for all years prior to the ultimate rate. The Pub-2010 Teachers Mortality Table for Disabled Retirees (ages set forward one year and adjusted 106%) with the MP-2019 Projection scale applied generationally is used for death after disability retirement. The rates of improvement have been reduced by 20% for all years prior to the ultimate rate. The representative rates shown below are based on a projection to 2015. Actual mortality rates are projected generationally to the year of the measurement.

Age	Service Retirement *		Disability Retirement *	
	Men	Women	Men	Women
40	0.07%	0.05%	0.84%	0.74%
45	0.11	0.07	1.21	1.10
50	0.18	0.11	1.84	1.62
55	0.52	0.39	2.48	1.97
60	0.64	0.41	3.06	2.25
65	0.84	0.53	3.72	2.62
70	1.46	0.93	4.63	3.37
75	2.70	1.79	6.18	4.78
80	4.96	3.43	8.86	7.23
85	9.05	6.59	13.02	11.20
90	16.07	12.31	18.80	16.08
95	26.12	21.73	27.04	22.76

* Rates as of 2015

Non-TRS Members: The RP-2000 Blue Collar Mortality Table projected to 2025 using the BB projection is used for deaths. The RP-2000 Disability Mortality Table projected to 2025 using the BB projection is used for death after disability retirement. Representative values of the assumed annual rates of death after service retirement and after disability retirement are shown below:

Age	Service Retirement		Disability Retirement	
	Men	Women	Men	Women
40	.13%	.08%	2.09%	.69%
45	.17	.13	2.09	.69
50	.22	.18	2.69	1.07
55	.39	.25	3.29	1.46
60	.69	.38	3.53	1.70
65	1.15	.77	3.71	2.07
70	1.83	1.38	4.29	2.78
75	2.96	2.28	5.62	3.86
80	4.83	3.62	7.50	5.35
85	7.89	6.15	9.70	7.41
90	13.78	10.37	13.91	10.62
95	22.32	16.57	23.01	16.73

POST RETIREMENT INCREASES (COLA): Increases of 2.40% annually after the current year were anticipated.

ASSETS: For funding purposes, the value of assets is equal to the actuarial value. The actuarial value of assets recognizes a portion of the difference between the market value of assets and the expected market value of assets, based on the assumed valuation rate of return. The amount recognized each year is 20% of the difference between actual market value return and expected market value return.

SPOUSES: 100% of active members were assumed to be married with the husband 3 years older than his wife.

ADMINISTRATIVE EXPENSES LOAD: The administrative expenses from the previous year are added to the normal cost.

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 7.15%), 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 and post-retirement cost-of-living adjustments 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 normal contributions, together with the current actuarial value of assets held, from the present value of expected benefits to be paid from the System.
5. The initial unfunded liability as of January 1, 2017 is amortized using a 10-year closed period. New sources of unfunded accrued liability resulting from all benefit changes, assumption and method changes, and experience gains and/or loss that have occurred since the previous valuation are amortized using a 30-year closed period.

SCHEDULE F

SUMMARY OF MAIN PLAN PROVISIONS
AS INTERPRETED FOR VALUATION PURPOSES

Effective January 1, 1983, the Board of Education of Gwinnett County Public Schools withdrew from coverage under the Social Security System and the Gwinnett County Board of Education's Retirement System was adopted to provide certain replacement benefits for those which would have been provided by Social Security.

The following summary describes the main benefit and contribution provisions of the System as interpreted for the valuation.

Years of Service	Aggregate period of employment consisting of years of service and parts thereof.
Earnings	Total compensation paid to an employee by employer during a calendar year, as reported on the Employee's Federal Withholding Tax Form W-2.
Accrued Retirement Benefit	2.2% of Earnings up to the Earnings Breakpoint for the year plus 1.6% of earnings in excess of such Earnings Break Point.
Earnings Break Point	$9,000
Service Retirement Benefit	
Condition for Allowance	Any member may retire on a service retirement allowance upon the attainment of age 65.
Amount of Allowance	Accrued Retirement Benefit.

Early Retirement

Condition for Allowance

A participant may retire early on the first day of any month on or after attaining eligibility for early retirement under the Teachers' Retirement System of Georgia or Public School Employees' Retirement System of Georgia, or any successors thereto.

Amount of Allowance

Accrued retirement benefit multiplied by the applicable early retirement commencement factor.

Death Benefit

Condition for Allowance

5 years of service if hired before July 1, 2012.

9 years and 9 months of service if hired after July 1, 2012 or if a non-vested former employee who is rehired after July 1, 2012.

Amount of Allowance

The spouse's monthly benefit shall be the actuarial equivalent of 50% of the participants accrued retirement benefits as of the time of death.

Vesting Benefit

Condition for Allowance

5 years of service if hired before July 1, 2012.

9 years and 9 months of service if hired after July 1, 2012 or if a non-vested former employee who is rehired after July 1, 2012.

Amount of Allowance

Accrued retirement benefit commencing as of the member's normal retirement date.

Disability Benefit

Condition for Allowance

None.

Amount of Allowance

60% of the participants earnings in the calendar year preceding disability. Benefits of this plan shall be the amounts necessary, when added to benefits available under other plans, to provide the 60% benefit level. Other plans shall include Teacher's Retirement System, Public Schools Employees Retirement Systems, Workers' Compensation, Social Security and any successor thereto.

A person entitled to Disability Benefits shall continue to receive retirement benefit accruals. His earnings shall be considered equal to his earnings in the last complete calendar year preceding disability.

Normal Form of Retirement Income	The normal form of retirement income payable under this Plan is a single life annuity. Participants may elect to receive an actuarially equivalent joint and survivor optional form of payment.
Cost-of-Living Adjustment	The retirement allowances of members or of any beneficiary of a member shall be subject to an adjustment every July 1st. The committee shall determine a current average cost of living index calculated by averaging the 12 preceding monthly consumer price indices for all urban consumers for the previous calendar year. The maximum increase in retirement allowances shall not exceed 3%.
Contributions by Employer	The actuary shall calculate the amount of contributions which are sufficient to fund the benefits provided by the Retirement Fund. The employer may rely upon the amounts determined by the actuary of the amount of contributions needed to carry out the Plan.
Contributions by Employee	1.00% of compensation for the purpose of funding the long term disability benefit in which they are immediately vested.

SCHEDULE G

SCHEDULE OF ACTIVE PARTICIPANT DATA – TOTAL PARTICIPANTS
AS OF JANUARY 1, 2023

Attained Age	Completed Years of Service										
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	≥ 40	Total
Under 25	427	294									721
Avg. Pay	43,697	49,165									45,927
25 to 29	514	1,196	266	1							1,977
Avg. Pay	46,458	53,636	57,903	28,102							52,331
30 to 34	452	714	879	114	1						2,160
Avg. Pay	43,409	52,903	61,030	64,371	33,371						54,820
35 to 39	411	693	653	360	176	2					2,295
Avg. Pay	42,215	52,049	62,765	68,786	74,013	28,234					57,626
40 to 44	445	839	722	276	661	141					3,084
Avg. Pay	44,620	51,176	60,969	68,019	77,220	83,763					61,102
45 to 49	380	746	745	327	582	494	64				3,338
Avg. Pay	43,998	51,110	59,568	63,036	76,180	86,729	96,467				63,869
50 to 54	326	672	750	405	714	464	253	30			3,614
Avg. Pay	43,398	49,167	56,677	59,980	70,382	82,535	89,479	74,635			62,926
55 to 59	216	474	532	389	712	424	152	34	11	1	2,945
Avg. Pay	44,517	47,683	51,889	53,755	61,173	71,600	73,509	68,642	59,345	40,675	57,334
60 to 64	124	254	306	268	420	287	95	26	8	2	1,790
Avg. Pay	41,159	42,810	48,222	45,890	55,033	56,934	68,624	59,627	75,962	72,214	51,010
65 to 69	45	102	115	119	95	70	25	12	7	2	592
Avg. Pay	36,144	36,044	44,659	39,861	46,255	55,792	54,567	48,925	54,920	53,928	43,793
70 & up	27	36	55	38	31	20	11	4	5	3	230
Avg. Pay	32,057	33,507	30,877	32,324	44,362	50,114	51,389	29,407	55,710	32,928	36,679
Total	3,367	6,020	5,023	2,297	3,392	1,902	600	106	31	8	22,746
Avg. Pay	43,791	50,649	57,761	58,767	68,140	76,033	80,724	64,414	62,048	48,968	57,628

Average Age: 45.92 Average Service: 8.98

SCHEDULE OF ACTIVE PARTICIPANT DATA – PSERS MEMBERS
AS OF JANUARY 1, 2023

Attained Age	Completed Years of Service										
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	≥ 40	Total
Under 25	22	16									38
Avg. Pay	18,155	21,309									19,483
25 to 29	42	20	4	1							67
Avg. Pay	23,576	22,468	29,470	28,102							23,665
30 to 34	67	66	26	7	1						167
Avg. Pay	21,507	24,904	27,551	17,029	33,371						23,674
35 to 39	91	76	34	10	10	1					222
Avg. Pay	21,709	24,439	28,186	24,576	22,028	22,230					23,782
40 to 44	97	135	76	21	16	5					350
Avg. Pay	22,531	26,541	30,282	32,607	30,426	35,036					26,905
45 to 49	95	164	90	49	43	5	1				447
Avg. Pay	24,055	28,091	31,056	29,824	34,518	37,883	40,675				28,776
50 to 54	83	196	133	79	89	26	7	4			617
Avg. Pay	24,759	28,026	32,210	32,778	31,139	34,488	38,027	36,376			29,986
55 to 59	70	160	133	97	129	44	23	9	5	1	671
Avg. Pay	26,729	29,457	32,982	32,048	31,771	34,066	34,282	29,776	42,590	40,675	31,277
60 to 64	49	120	108	114	112	58	22	9	3		595
Avg. Pay	24,753	26,858	32,554	32,246	31,334	29,953	35,230	38,632	40,228		30,450
65 to 69	24	64	53	65	38	26	8	6	3	2	289
Avg. Pay	23,358	25,173	30,001	30,903	33,293	35,315	35,848	39,588	39,171	53,928	30,116
70 & up	14	22	38	27	17	8	6	4	1	3	140
Avg. Pay	21,480	26,343	28,183	28,798	30,232	33,279	27,086	29,407	40,004	32,928	28,056
Total	654	1,039	695	470	455	173	67	32	12	6	3,603
Avg. Pay	23,360	27,046	31,275	31,276	31,611	32,972	34,622	34,885	40,929	41,219	28,886

Average Age: 52.90 Average Service: 8.02

SCHEDULE OF ACTIVE PARTICIPANT DATA – TRS MEMBERS
AS OF JANUARY 1, 2023

Attained Age	Completed Years of Service										
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	≥ 40	Total
Under 25	405	278									683
Avg. Pay	45,085	50,769									47,398
25 to 29	472	1,176	262								1,910
Avg. Pay	48,494	54,166	58,337								53,336
30 to 34	385	648	853	107							1,993
Avg. Pay	47,221	55,755	62,051	67,468							57,430
35 to 39	320	617	619	350	166	1					2,073
Avg. Pay	48,046	55,449	64,664	70,049	77,145	34,238					61,250
40 to 44	348	704	646	255	645	136					2,734
Avg. Pay	50,777	55,901	64,579	70,936	78,381	85,555					65,480
45 to 49	285	582	655	278	539	489	63				2,891
Avg. Pay	50,646	57,597	63,486	68,890	79,504	87,229	97,353				69,295
50 to 54	243	476	617	326	625	438	246	26			2,997
Avg. Pay	49,764	57,872	61,951	66,572	75,971	85,387	90,943	80,521			69,707
55 to 59	146	314	399	292	583	380	129	25	6		2,274
Avg. Pay	53,045	56,971	58,192	60,966	67,679	75,947	80,503	82,634	73,308		65,022
60 to 64	75	134	198	154	308	229	73	17	5	2	1,195
Avg. Pay	51,879	57,095	56,768	55,989	63,650	63,767	78,688	70,742	97,403	72,214	61,246
65 to 69	21	38	62	54	57	44	17	6	4		303
Avg. Pay	50,758	54,354	57,190	50,643	54,895	67,892	63,375	58,262	66,732		56,838
70 & up	13	14	17	11	14	12	5		4		90
Avg. Pay	43,447	44,765	36,899	40,979	61,519	61,338	80,553		59,636		50,091
Total	2,713	4,981	4,328	1,827	2,937	1,729	533	74	19	2	19,143
Avg. Pay	48,716	55,573	62,014	65,839	73,799	80,341	86,519	77,184	75,386	72,214	63,037

Average Age: 44.61

Average Service: 9.16

SCHEDULE H

RECONCILIATION OF PARTICIPANT DATA

	Actives	Retired	Beneficiary	Term Vested	Disabled	Total
Number of members as of						
January 1, 2022	**21,668**	**10,008**	**599**	**4,953**	**338**	**37,566**
Changes in status during the year:						
Service Retirement	(579)	709		(129)	(1)	
Disability Retirement	(33)			(1)	34	
Vested Termination	(370)			372	(2)	
Return to Work	327			(71)	(6)	250
Correction						
Terminated Non-Vested					(1)	(1)
No longer participating due to:						
Death	(26)	(182)	(14)	(51)	(5)	(278)
Data Correction						
Withdrawal	(1,737)					(1,737)
Lump Sum	(10)	(1)	(10)	(39)		(60)
New Member due to:						
Initial Participation	3,506			1		3,507
Death of Member			83			83
Data Correction						
Number of members as of	**22,746**	**10,534**	**658**	**5,035**	**357**	**39,330**
January 1, 2023						