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EMPLOYEES'
RETIREMENT SYSTEM
OF GEORGIA

**GEORGIA PUBLIC SCHOOL EMPLOYEES
RETIREMENT SYSTEM**

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





Cavanaugh Macdonald

CONSULTING, LLC

The experience and dedication you deserve

April 15, 2021

Board of Trustees
Georgia Public School Employees Retirement System
Two Northside 75, Suite 300
Atlanta, GA 30318

Attention: Mr. James Potvin, Executive Director

Members of the Board:

Section 47-4-60 of the law governing the operation of the Georgia Public School Employees Retirement System (PSERS) provides that the employer contribution shall be actuarially determined and approved 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, 2020. Based on a monthly benefit accrual rate of \$15.50, which became effective July 1, 2019, the valuation indicates that annual employer contributions of \$32,169,000 or \$926.09 per active member for the fiscal year ending June 30, 2023 are sufficient to support the benefits of the System.

Since the previous valuation, various economic and demographic assumptions and actuarial methods have been revised to reflect the results of the experience investigation for the five-year period ending June 30, 2019. A complete list of these changes is provided on page 2 of this report.

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 2020 session of the General Assembly.

The results of the valuation reflect that the Board did not grant the anticipated cost-of-living increases (COLAs) to retired members on July 1, 2020 and on January 1, 2021.

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



April 15, 2021
Board of Trustees
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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 financial reporting purposes meet the parameters set by Actuarial Standards of Practice (ASOPS). The funding objective of the plan is that contribution rates over time will remain level as a dollar per active member. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a dollar per active member. Gains and losses are reflected in the total unfunded accrued liability which is being amortized as a level dollar per active member in accordance with the funding policy adopted by the Board.

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

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

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

The System is currently 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 currently operating on an actuarially sound basis. Assuming that contributions to the System are made by the employer from year to year in the future at the rates recommended on the basis of the successive actuarial valuations, the continued sufficiency of the retirement fund to provide the benefits called for under the System may be safely anticipated.

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

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



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

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

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

Sincerely yours,

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

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

A handwritten signature in blue ink that reads "Cathy Turcot".

Cathy Turcot
Principal and Managing Director

A handwritten signature in blue ink that reads "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:

Valuation Date	June 30, 2020	June 30, 2019
Number of active members	34,736	34,767
Retired members and beneficiaries:		
Number	19,161	18,928
Annual allowances	\$ 66,056,908	\$ 63,862,000*
Deferred Vested Members:		
Number	5,421	5,256
Annual allowances	\$ 14,720,151	\$ 13,989,940
Assets:		
Fair Value	\$ 958,248,000	\$ 941,587,000
Actuarial Value	961,431,000	931,032,000
Valuation Interest Rate	7.30%	7.30%
Unfunded actuarial accrued liability	\$ 195,565,762	\$ 177,626,248
Blended Amortization period (years)	19.1	19.6
Funded Ratio based on Actuarial Value of Assets	83.1%	84.0%
Contributions for Fiscal Year Ending	June 30, 2023	June 30, 2022
Actuarially Determined Employer Contribution (ADEC):		
Per active member:		
Normal**	\$ 370.50	\$ 389.97
Unfunded Actuarial Accrued Liability	<u>555.59</u>	<u>498.55</u>
Total	\$ 926.09	\$ 888.52
Annual Amount:		
Normal**	\$ 12,870,000	\$ 13,558,000
Unfunded Actuarial Accrued Liability	<u>19,299,000</u>	<u>17,333,000</u>
Total	\$ 32,169,000	\$ 30,891,000

*Does not reflect the COLA granted by the Board on January 1, 2020 or increases in benefit accrual rates after June 30, 2019.

**The normal contribution includes administrative expenses.





Section I – Summary of Principal Results

2. The major benefit and contribution provisions of the System as reflected in the valuation are summarized in Schedule H. The valuation takes into account the effect of amendments of the System enacted through the 2020 session of the General Assembly. There have been no changes since the previous valuation.
3. Schedule D of this report outlines the full set of actuarial assumptions used to prepare the current valuation. Since the previous valuation, various economic and demographic assumptions and actuarial methods have been revised to reflect the results of the experience investigation for the five-year period ending June 30, 2019. These revised assumptions were adopted by the Board on December 17, 2020 and are summarized below.

Summary of Assumptions and Methods	
Economic Assumptions	
Price Inflation	Lowered assumption from 2.75% to 2.50%.
Investment Return	Lowered long-term assumption from 7.50% to 7.00%.
Demographic Assumptions	
Withdrawal	Increased rates at most ages for each service band.
Pre-Retirement Mortality	Changed to the Pub-2010 Below-Median General Employee table, with no adjustments, projected generationally with the MP-2019 scale.
Disability Retirement	Changed assumed rates to better match experience.
Service Retirement	Decreased rates at all ages and extended fixed retirement from age 75 to age 80.
Post-Retirement Mortality	Changed to the Pub-2010 family of mortality tables, with adjustments as outlined in Schedule D to better fit actual experience, projected generationally with the MP-2019 scale.
Other Actuarial Assumptions and Methods	
Administrative Expenses	Changed from budgeting expenses to \$1,400,000.
Amortization Method	No change to current method.
Asset Smoothing	No change to current method.
Cost of Living	No change to current assumption.
Option Factors	Changed option factors to reflect change in mortality rate tables.
Termination Benefits	Changed assumption to better match experience.
All others	No change to other actuarial methods.





Section I – Summary of Principal Results

4. In addition, the Board amended the PSERS Funding Policy on December 17, 2020. The PSERS funding policy states that beginning with the June 30, 2017 valuation, the long-term annual expected return on assets assumption shall be reduced by 0.10% per year from the immediate prior valuation when the actual rate of return for the fiscal year exceeds the assumed rate. The minimum return assumption stated in the funding policy is 7.00%. The Board policy will continue to require a reduction in the rate of return used in future valuations until a 7.00% return, which is now the long-term annual expected rate of return assumption recommended in the latest experience study, is achieved. The asset return assumption used in the prior actuarial valuation was 7.30%. Since the actual rate of return for the year ending June 30, 2020 was less than 7.30%, the assumed rate of return used in the current valuation remained at 7.30%. The new Board Funding Policy is shown in Schedule F.
5. The entry age actuarial cost method was used to prepare the valuation. Schedule E contains a brief description of this method.
6. The valuation reflects that the Board did not grant the anticipated cost-of-living increases to retired members on July 1, 2020 and on January 1, 2021.
7. Comments on the valuation results as of June 30, 2020 are given in Section IV, and further discussion of the contributions is set out in Section V.
8. We have prepared the Solvency Test and Schedule of Retirants Added to and Removed from Rolls for the System's Comprehensive Annual Financial Report. These tables are shown in Schedule J.
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 of the valuation were furnished by the Retirement System office. The valuation included 34,736 active members. This is a slight decrease from last year's valuation.
2. Data was provided by the Retirement System for inactive members who are eligible for deferred vested benefits. The valuation included 5,421 deferred vested members with annual allowances totaling \$14,720,151. In addition, there are 44,853 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, 2020, together with the amount of their annual allowances payable under the System as of that date.

**THE NUMBER AND ANNUAL RETIREMENT ALLOWANCES OF
RETIRED MEMBERS AND BENEFICIARIES ON THE ROLL
AS OF JUNE 30, 2020**

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES
Service Retirements	16,995	\$ 58,555,349
Disability Retirements	988	4,887,587
Beneficiaries of Deceased Members	<u>1,178</u>	<u>2,613,972</u>
Total	19,161	\$ 66,056,908





Section III – Assets

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

The Annuity Savings Fund is the fund to which are credited all contributions made by members together with regular interest thereon. When a member retires, or if a death benefit allowance becomes payable to his beneficiary, his accumulated contributions are transferred from the Annuity Savings Fund to the Pension Accumulation Fund. The portion of the allowance which these contributions provide is then paid from the Pension Accumulation Fund. On June 30, 2020, the value of assets credited to the Annuity Savings Fund amounted to \$31,162,000.
 - (b) Pension Accumulation Fund

The Pension Accumulation Fund is the fund to which all income from investments and all contributions made by employers of members of the System and by the State for members of local retirement funds are credited. All retirement allowance and death benefit allowance payments are disbursed from this fund. Upon the retirement of a member, or upon his death if a death benefit allowance is payable, his accumulated contributions are transferred from the Annuity Savings Fund to this fund to provide the member-contributed portion of the allowance. On June 30, 2020, the fair value of assets credited to the Pension Accumulation Fund amounted to \$927,086,000.
2. As of June 30, 2020, the total fair value of assets amounted to \$958,248,000 as reported by the Auditor of the System.
3. The actuarial value of assets used for the current valuation was determined to be \$961,431,000 based on a 5-year smoothing of investment gains and losses. Schedule B shows the development of the actuarial value of assets as of June 30, 2020.
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, 2020.
2. The valuation balance sheet shows that the System has total prospective liabilities of \$1,221,906,802, of which \$721,553,727 is for the prospective benefits payable on account of present retired members, beneficiaries of deceased members, and members entitled to deferred vested benefits, and \$500,353,075 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 \$961,431,000 as of June 30, 2020. The difference of \$260,475,802 between the total liabilities and the total present assets represents the present value of contributions to be made in the future. Of this amount, \$11,483,100 is the present value of future contributions expected to be made by or on behalf of members, and the balance of \$248,992,702 represents the present value of future contributions payable by the employers to the Pension Accumulation Fund.
3. The employer's contributions to the System consist of normal contributions and unfunded actuarial accrued liability (UAAL) contributions. The valuation indicates that annual employer normal contributions at the rate of \$330.20 per active member are required to provide the currently accruing benefits of the System. An additional \$40.30 per active member is required to fund the administrative expenses of the System.
4. Prospective normal contributions (net of expenses) have a present value of \$53,426,940. When this amount is subtracted from \$248,992,702, which is the present value of the total future contributions to be made by the employers, the result is a prospective unfunded actuarial accrued liability of \$195,565,762.





Section IV – Comments on Valuation

5. The funding policy adopted by the Board, as shown in Schedule F, provides that the unfunded actuarial accrued liability as of June 30, 2013 (Transitional UAAL) will be amortized as a level dollar amount over a closed 25-year period. In each subsequent valuation, all benefit changes, assumption and method changes, and experience gains and/or losses that have occurred since the previous valuation will determine a New Incremental UAAL. Each New Incremental UAAL will be amortized as a level dollar amount over a closed 25-year period from the date it is established.
6. The total accrued liability contribution rate is \$555.59 per active member, determined in accordance with the Board's funding policy.
7. Schedule G of this report shows the amortization schedules for the Transitional UAAL and New Incremental UAALs.
8. The following table shows the components of the total UAAL and the derivation of the UAAL contribution rate in accordance with the funding policy.

TOTAL UAAL AND UAAL CONTRIBUTION RATE

	Remaining Balance UAAL	Remaining Amortization Period (years)	Amortization Payment
Transitional	\$159,123,309	18	\$16,163,032
New Incremental 6/30/2014	(19,077,974)	19	(1,887,586)
New Incremental 6/30/2015	5,293,819	20	511,410
New Incremental 6/30/2016	(4,613,771)	21	(436,120)
New Incremental 6/30/2017	17,904,197	22	1,659,121
New Incremental 6/30/2018	9,233,283	23	840,217
New Incremental 6/30/2019	5,397,008	24	483,019
New Incremental 6/30/2020	<u>22,305,891</u>	25	<u>1,966,092</u>
Total UAAL	\$195,565,762		\$19,299,185
Blended Amortization Period (years)			19.1
UAAL Contribution Rate per active member			\$555.59





Section V – Contributions Payable by Employers

1. The contributions of employers consist of a normal contribution and an unfunded actuarial accrued liability contribution (UAAL) as determined by actuarial valuation.
2. The normal contribution rate is calculated as the level dollar which, if applied for the average member during the entire period of his anticipated covered service, would be required in addition to the contributions of the member to meet the cost of all benefits payable on his behalf. On the basis of the valuation, the normal contribution rate was determined to be \$330.20 per active member, or \$11,470,000 based on 34,736 active members as of June 30, 2020.
3. An additional \$1,400,000, or \$40.30 per active member, is required to fund the administrative expenses of the System.
4. The total normal contribution including administrative expenses is, therefore, \$12,870,000, or \$370.50 per active member.
5. The UAAL contribution is the level annual amount which will be sufficient to amortize the UAAL in accordance with the Board's funding policy. The annual UAAL contribution determined on this basis by the June 30, 2020 valuation is \$19,299,000, or \$555.59 per active member.
6. The following table summarizes the employer contribution rates which were determined by the June 30, 2020 valuation and are recommended for use.

**ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION (ADEC)
FOR FISCAL YEAR ENDING JUNE 30, 2023**

CONTRIBUTION	PER ACTIVE MEMBER	ANNUAL AMOUNT
Normal	\$ 370.50	\$ 12,870,000
Unfunded Actuarial Accrued Liability	<u>555.59</u>	<u>19,299,000</u>
Total	\$ 926.09	\$ 32,169,000

7. Schedule K shows the allocation of the actuarially determined employer contribution for fiscal year ending June 30, 2023 by school system.





Section VI – Accounting Information

The information required under 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, 2020

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits	19,161
Terminated employees entitled to benefits but not yet receiving benefits	50,274
Active plan members	<u>34,736</u>
Total	104,171

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)
6/30/2015	\$ 805,277	\$ 967,409	\$ 162,132	83.2%	N/A	N/A
6/30/2016	834,554	988,883	154,329	84.4	N/A	N/A
6/30/2017*	865,786	1,035,935	170,149	83.6	N/A	N/A
6/30/2018*	905,046	1,081,184	176,138	83.7	N/A	N/A
6/30/2019	931,032	1,108,658	177,626	84.0	N/A	N/A
6/30/2020**	961,431	1,156,997	195,566	83.1	N/A	N/A

* Reflects change in assumed rate of return

**Reflects changes in assumptions.





Section VI – Accounting Information

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

<u>Fiscal Year Ending</u>	<u>Actuarially Determined Employer Contribution (ADEC)</u>	<u>Percentage Contributed</u>
6/30/2015	\$ 28,461	100%
6/30/2016	28,580	100
6/30/2017	26,277	100
6/30/2018	29,276	100
6/30/2019	30,263	100
6/30/2020	32,496	100

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

Valuation date	6/30/2020
Actuarial cost method	Entry age
Amortization method	Level dollar, closed
Remaining amortization period	19.1 years
Asset valuation method	5-year smoothed fair
Actuarial assumptions:	
Investment rate of return*	7.30%
Projected salary increases	N/A
Cost-of-living adjustments	1.50% semi-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 assumptions and methods were revised and 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 an increase of \$17,939,514 in the unfunded actuarial accrued liability (UAAL) from \$177,626,248 to \$195,565,762 during the fiscal year ending June 30, 2020.
3. The breakdown of the major reasons for the \$17,939.5 thousand increase in the UAAL are as follows:
 - There was a \$34,145.2 thousand increase in the UAAL due to the assumption changes resulting from the experience investigation for the five-year period ending June 30, 2019.
 - There was a loss of \$3,100.0 thousand for valuation asset growth, because the rate of return on the actuarial value of assets was less than the assumed rate of 7.30% for the fiscal year ending June 30, 2020.
 - There was also a small loss of \$814.7 thousand due to turnover and retirements.
 - Partially offsetting these increases to the UAAL was a \$13,371.6 thousand gain because the Board did not grant the full anticipated COLAs to retired members on July 1, 2020 and January 1, 2021.
 - In addition, the accrued liability contribution was greater than the interest on the prior year UAAL by \$7,433.8 thousand which lowered the UAAL. This occurred due to the level dollar funding method used to amortize the UAAL (more payment applied to principal balance).
 - There was also a gain for pensioner mortality of \$2,626.4 thousand that offset some of the increases to the UAAL.





Section VII – Experience

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

ITEM	AMOUNT OF INCREASE/ (DECREASE)
Interest (7.30%) added to previous UAAL	\$ 12,966.7
Accrued liability contribution	(20,400.5)
Experience:	
Valuation asset growth	3,100.0
Pensioners' mortality	(2,626.4)
Turnover and retirements	814.7
New entrants	3,516.1
Assumption and method changes	34,145.2
7/1/2020, 1/1/2021 COLAs	(13,371.6)
Miscellaneous Changes	<u>(204.7)</u>
Total	\$ 17,939.5





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.





Section VIII – Risk Assessment

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, based on the current valuation, if the market value return had been 10% below assumed, or negative 2.70% (7.30% minus 10.00%) for the System, there would have been an increase in the expected Required Contribution Amount of approximately \$1,630,000.

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 7.30%, along with the results if the assumption were 6.30% or 8.30%. 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. In addition, simply because the valuation results under alternative assumptions are shown here, it should not be implied that Cavanaugh Macdonald Consulting (CMC) believes that either assumption (6.30% or 8.30%) would comply with actuarial standards of practice.

As of June 30, 2020	Current Discount Rate (7.30%)	-1% Discount Rate (6.30%)	+1% Discount Rate (8.30%)
Accrued Liability*	\$1,156,997	\$1,292,457	\$1,043,979
Unfunded Liability*	\$195,566	\$331,026	\$82,548
Funded Ratio (AVA)	83.1%	74.4%	92.1%
ADEC Rate**	\$926.09	\$1,287.65	\$587.11

* \$ in thousands

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





Section VIII – Risk Assessment

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. Since the last valuation, an experience investigation was prepared for the five-year period ending June 30, 2019 and based on the results of the investigation, a new mortality table with generational approach to future improvements in mortality was adopted. 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 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

THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF THE GEORGIA PUBLIC SCHOOL EMPLOYEES RETIREMENT SYSTEM AS OF JUNE 30, 2020

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	\$ 576,144,901
-	Death and survivor benefits	25,125,895
-	Deferred vested benefits	<u>120,282,931</u>
	Total	\$ 721,553,727
(2)	Present value of prospective benefits payable on account of present active members	<u>500,353,075</u>
(3)	TOTAL ACTUARIAL LIABILITIES	<u>\$1,221,906,802</u>
PRESENT AND PROSPECTIVE ASSETS		
(4)	Actuarial value of assets	\$ 961,431,000
(5)	Present value of total future contributions = (3)-(4)	\$ 260,475,802
(6)	Present value of future member contributions	11,483,100
(7)	Present value of future employer contributions = (5)-(6)	\$ 248,992,702
(8)	Prospective normal contributions	53,426,940
(9)	Prospective unfunded actuarial accrued liability contributions = (7)-(8)	<u>195,565,762</u>
(10)	TOTAL PRESENT AND PROSPECTIVE ASSETS	<u>\$1,221,906,802</u>





Schedule B – Development of Actuarial Value of Assets

(1)	Actuarial Value Beginning of Year	\$ 931,032,000
(2)	Fair Value End of Year	\$ 958,248,000
(3)	Fair Value Beginning of Year	\$ 941,587,000
(4)	Cash Flow	
	(a) Contributions	\$ 34,834,000
	(b) Benefit Payments	(66,662,000)
	(c) Administrative Expenses	(1,424,000)
	(d) Investment Expenses	<u>(404,000)</u>
	(e) Net: (4)(a) + (4)(b) + 4(c) + 4(d)	\$ (33,656,000)
(5)	Investment Income	
	(a) Fair Total: (2) – (3) – (4)(e)	\$ 50,317,000
	(b) Assumed Rate of Return for Current Year	7.30%
	(c) Amount for Immediate Recognition: [(3) x (5)(b)] + {[4(a) + 4(b) + 4(c)]x (5)(b) x 0.5} - 4(d)	\$ 67,926,000
	(d) Amount for Phased-In Recognition: (5)(a) - (5)(c)	(17,609,000)
(6)	Phased-In Recognition of Investment Income	
	(a) Current Year: (5)(d) / 5	\$ (3,522,000)
	(b) First Prior Year	(994,000)
	(c) Second Prior Year	3,075,000
	(d) Third Prior Year	7,737,000
	(e) Fourth Prior Year	<u>(10,167,000)</u>
	(f) Total Recognized Investment Gain	\$ (3,871,000)
(7)	Actuarial Value End of Year: (1) + (4)(e) + (5)(c) + (6)(f)	\$ 961,431,000
(8)	Difference Between Fair & Actuarial Values: (2) – (7)	\$ (3,183,000)
(9)	Rate of Return on Actuarial Value*	6.96%

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





Schedule C – Summary of Receipts and Disbursements

FAIR VALUE OF ASSETS

<u>Receipts for the Year</u>	YEAR ENDING	
	<u>June 30, 2020</u> (\$1,000's)	<u>June 30, 2019</u> (\$1,000's)
Contributions:		
Members	\$ 2,338	\$ 2,256
Employer	<u>32,496</u>	<u>30,263</u>
Subtotal	\$ 34,834	\$ 32,519
Investment Earnings (Net of Investment Expenses)	<u>49,913</u>	<u>60,553</u>
TOTAL	\$ 84,747	\$ 93,072
<u>Disbursements for the Year</u>		
Benefit Payments	\$ 66,090	\$ 63,637
Refunds to Members	572	609
Administrative Expenses	<u>1,424</u>	<u>1,377</u>
TOTAL	\$ 68,086	\$ 65,623
<u>Excess of Receipts over Disbursements</u>	\$ 16,661	\$ 27,449
<u>Reconciliation of Asset Balances</u>		
Asset Balance as of the Beginning of Year	\$ 941,587	\$ 914,138
Excess of Receipts over Disbursements	<u>16,661</u>	<u>27,449</u>
Asset Balance as of the End of Year	<u>\$ 958,248</u>	<u>\$ 941,587</u>
Rate of Return*	5.40%	6.75%

* 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 March 15, 2018.

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

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

Annual Rates of Withdrawal				
Age	Years of Service			Disability
	<u>0-4</u>	<u>5-9</u>	<u>10 & Over</u>	
				<u>Males</u>
20	34.00%			0.0000%
25	31.00	19.00%		0.0000
30	27.50	17.00	12.50%	0.0000
35	24.50	15.50	9.00	0.0018
40	22.00	13.50	8.25	0.0110
45	21.00	12.50	7.00	0.0330
50	18.50	11.00	7.00	0.0770
55	15.25	9.00	6.00	0.2250
60	13.50	9.00		0.2500
				<u>Females</u>
20	35.00%			0.0000%
25	31.00	20.00%		0.0000
30	25.00	16.50	10.00%	0.0000
35	22.00	15.00	10.00	0.0018
40	20.00	14.00	9.00	0.0110
45	18.00	12.00	8.00	0.0330
50	16.25	10.00	7.00	0.0770
55	13.50	9.00	6.00	0.2250
60	13.00	9.00		0.2500





Schedule D – Outline of Actuarial Assumptions and Methods

RETIREMENT:

Age	Annual Rate	Age	Annual Rate
60	12.0%	71	25.0%
61	12.0	72	25.0
62	21.0	73	25.0
63	17.0	74	25.0
64	15.0	75	25.0
65	26.0	76	25.0
66	26.0	77	25.0
67	22.0	78	25.0
68	22.0	79	25.0
69	23.5	80 & Over	100.0
70	25.0		

RATES OF DEATH BEFORE RETIREMENT: The Pub-2010 Below-Median 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	0.0410%	0.0130%	45	0.1430%	0.0720%
25	0.0410	0.0120	50	0.2180	0.1070
30	0.0520	0.0190	55	0.3200	0.1570
35	0.0680	0.0300	60	0.4660	0.2380
40	0.0960	0.0470	65	0.6820	0.3800

* 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 Below-Median Annuitant	Male: +2; Female: +2	Male: 101%; Female: 103%
Disability Retirees	General Disabled	Male: -3; Female: 0	Male: 103%; Female: 106%
Beneficiaries	General Below-Median Contingent Survivors	Male: +2; Female: +2	Male: 104%; Female: 99%





Schedule D – Outline of Actuarial Assumptions and Methods

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

Age	Annual Rates of Death*					
	Service Retirement		Disability Retirement		Beneficiaries	
	Males	Females	Males	Females	Males	Females
50	0.7989%	0.4532%	1.2576%	1.5720%	0.9984%	0.5930%
55	0.9837	0.5037	1.8725	1.8465	1.1523	0.7742
60	1.1726	0.6015	2.3484	2.0734	1.4258	1.0237
65	1.5736	0.8827	2.7573	2.3914	1.9978	1.4147
70	2.5785	1.5296	3.4536	3.0337	3.0680	2.0731
75	4.3329	2.6770	4.4743	4.2432	4.7414	3.1878
80	7.4043	4.7679	6.0986	6.3674	7.3944	5.1450
85	12.4301	8.7849	8.8220	9.8909	11.8154	8.7684
90	19.3173	15.3594	12.9831	14.4849	19.0320	14.3778

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

ADMINISTRATIVE EXPENSES: Administrative expenses equal to \$1,400,000 are added to the normal cost contribution.

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.

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

COST-OF-LIVING ADJUSTMENT (COLA): 1.50% semi-annually.

TERMINATING VESTED MEMBERS: 25% of active vested members who terminate are assumed to elect a refund in lieu of a benefit. Benefits are assumed to begin at age 65.





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





Schedule F – Board Funding Policy

Funding Policy of the PSERS Board of Trustees

The purpose of this Funding Policy is to state the overall objectives for the Public-School Employees Retirement System (System), the benchmarks that will be used to measure progress in achieving those goals, and the methods and assumptions that will be employed to develop the benchmarks. It is the intent of the PSERS Board of Trustees that the Funding Policy outlined herein will remain unchanged until the objectives below are met.

I. Funding Objectives

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

- To develop a pattern of contributions expressed as both a total dollar amount and as a dollar amount per active member and measured by valuations prepared in accordance with applicable State laws and the principles of practice prescribed by the Actuarial Standards Board.
- To maintain 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 25 years of the valuation date for the first valuation conducted following the adoption of this Policy (i.e. the June 30, 2013 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 shall be known as the Transitional UAAL.
 - **New Incremental UAAL** – Each subsequent valuation will produce a New Incremental UAAL consisting of all benefit changes, assumption and method changes and experience gains and/or losses that have occurred since the previous valuations.





Schedule F – Board Funding Policy

- **UAAL Amortization Period**
 - The transitional UAAL will be amortized over a closed 25-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 25-year period beginning with the year it is incurred.
 - Effective with the June 30, 2020 valuation date, any New Incremental UAAL which is attributable to the granting of any post-retirement benefit adjustment (PRBA), including COLAs and one-time (non-compounded) payments, shall be amortized over a closed 15-year period. The amortization period shall begin with the year such PRBA is granted by the Board.
- **Employer Contributions**
 - **Employer Normal Contributions** – the contribution determined as of the valuation date each year to fund the employer portion of the annual normal cost of the System based on the assumptions and methods adopted by the Board.
 - In each valuation subsequent to the adoption of this funding policy the required employer contributions will be determined as the summation of the employer Normal Contribution, a contribution for administrative expenses, the amortization cost for the Transitional UAAL and the individual amortization cost for each of the New Incremental UAAL bases.
 - Employer Contributions will be expressed as both a total dollar amount and as a dollar amount per active member. In no event shall the employer contributions be less than \$0.
 - The valuation methodology, including the amortization of the Unfunded Actuarial Accrued Liability (UAAL), would be expected to maintain reasonably stable contributions as a dollar per active member.

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, 2013 valuation date, 7.50% net of investment expenses.
 - Effective with the June 30, 2017 valuation date, reduced by 0.10% (10 basis points) from the immediate prior actuarial valuation, as long as the following conditions are met:
 - The actual rate of return for the fiscal year ending with the current valuation date exceeds the assumed rate of return from the immediate prior actuarial valuation, and
 - The assumed rate of return does not decrease below 7.00% net of investment expenses.





Schedule F – Board Funding Policy

- The actuarial value of assets will be determined by recognizing the annual differences between actual and expected market value of assets over a five-year period, beginning with the June 30, 2013 actuarial valuation.
 - Prior to the June 30, 2013 valuation, the differences between actual and expected market value of assets were recognized over a seven-year period. For the June 30, 2013 valuation, all then-current deferred gains and losses will be recognized immediately, and the initial new five-year period will begin immediately thereafter.

The employer contributions determined in an annual actuarial valuation will be at least sufficient to satisfy the annual normal cost of the System and amortize the UAAL as a level dollar amount over a period not to exceed 25 years (for the UAAL as of the June 30, 2013 valuation date, and for each successive year of gains and losses incurred in years following the June 30, 2013 valuation date). However in no event shall the employer contributions be less than \$0.

The actuary shall conduct an investigation into the System's experience at least every five years and utilize the results of the investigation to form the basis for recommended assumptions and methods. Any changes to the recommended assumptions and methods that are approved by the Board will be reflected in this Policy.

IV. Funding Policy Progress

The Board will periodically have actuarial projections of the valuation results performed to assess the current and expected future progress towards the overall funding goals of the System. These periodic projections will provide the expected valuation results over at least a 30-year period. The projected measures of funding progress and the recent historical trend provided in valuations will provide important information for the Board's assessment of the System's funding progress.

Adopted: December 17, 2020





Schedule G – Amortization of UAAL

AMORTIZATION OF TRANSITIONAL UAAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of Transitional UAAL</u>	<u>Annual Amortization Payment</u>
6/30/2013	25	\$182,988,036	\$16,415,980
6/30/2014	24	180,296,159	16,415,980
6/30/2015	23	177,402,391	16,415,980
6/30/2016	22	174,291,591	16,415,980
6/30/2017	21	170,947,481	16,287,231
6/30/2018	20	167,310,363	16,163,032
6/30/2019	19	163,360,988	16,163,032
6/30/2020	18	159,123,309	16,163,032
6/30/2021	17	154,576,279	16,163,032
6/30/2022	16	149,697,315	16,163,032
6/30/2023	15	144,462,188	16,163,032
6/30/2024	14	138,844,896	16,163,032
6/30/2025	13	132,817,542	16,163,032
6/30/2026	12	126,350,190	16,163,032
6/30/2027	11	119,410,723	16,163,032
6/30/2028	10	111,964,674	16,163,032
6/30/2029	9	103,975,064	16,163,032
6/30/2030	8	95,402,212	16,163,032
6/30/2031	7	86,203,541	16,163,032
6/30/2032	6	76,333,368	16,163,032
6/30/2033	5	65,742,673	16,163,032
6/30/2034	4	54,378,856	16,163,032
6/30/2035	3	42,185,481	16,163,032
6/30/2036	2	29,101,990	16,163,032
6/30/2037	1	15,063,403	16,163,032
6/30/2038	0	0	0





Schedule G – Amortization of UAAL

AMORTIZATION OF 2014 INCREMENTAL UAAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 6/30/2014</u>	<u>Annual Amortization Payment</u>
6/30/2014	25	(\$21,380,749)	(\$1,918,081)
6/30/2015	24	(21,066,224)	(1,918,081)
6/30/2016	23	(20,728,109)	(1,918,081)
6/30/2017	22	(20,364,636)	(1,902,575)
6/30/2018	21	(19,969,044)	(1,887,586)
6/30/2019	20	(19,539,198)	(1,887,586)
6/30/2020	19	(19,077,974)	(1,887,586)
6/30/2021	18	(18,583,080)	(1,887,586)
6/30/2022	17	(18,052,059)	(1,887,586)
6/30/2023	16	(17,482,273)	(1,887,586)
6/30/2024	15	(16,870,894)	(1,887,586)
6/30/2025	14	(16,214,883)	(1,887,586)
6/30/2026	13	(15,510,983)	(1,887,586)
6/30/2027	12	(14,755,699)	(1,887,586)
6/30/2028	11	(13,945,280)	(1,887,586)
6/30/2029	10	(13,075,699)	(1,887,586)
6/30/2030	9	(12,142,639)	(1,887,586)
6/30/2031	8	(11,141,466)	(1,887,586)
6/30/2032	7	(10,067,207)	(1,887,586)
6/30/2033	6	(8,914,527)	(1,887,586)
6/30/2034	5	(7,677,702)	(1,887,586)
6/30/2035	4	(6,350,588)	(1,887,586)
6/30/2036	3	(4,926,595)	(1,887,586)
6/30/2037	2	(3,398,651)	(1,887,586)
6/30/2038	1	(1,759,167)	(1,887,586)
6/30/2039	0	0	0





Schedule G – Amortization of UAAL

AMORTIZATION OF 2015 INCREMENTAL UAAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 6/30/2015</u>	<u>Annual Amortization Payment</u>
6/30/2015	25	\$5,795,541	\$519,922
6/30/2016	24	5,710,285	519,922
6/30/2017	23	5,618,634	515,598
6/30/2018	22	5,518,815	511,410
6/30/2019	21	5,410,279	511,410
6/30/2020	20	5,293,819	511,410
6/30/2021	19	5,168,858	511,410
6/30/2022	18	5,034,775	511,410
6/30/2023	17	4,890,904	511,410
6/30/2024	16	4,736,530	511,410
6/30/2025	15	4,570,887	511,410
6/30/2026	14	4,393,152	511,410
6/30/2027	13	4,202,442	511,410
6/30/2028	12	3,997,810	511,410
6/30/2029	11	3,778,241	511,410
6/30/2030	10	3,542,642	511,410
6/30/2031	9	3,289,845	511,410
6/30/2032	8	3,018,594	511,410
6/30/2033	7	2,727,542	511,410
6/30/2034	6	2,415,242	511,410
6/30/2035	5	2,080,145	511,410
6/30/2036	4	1,720,586	511,410
6/30/2037	3	1,334,779	511,410
6/30/2038	2	920,808	511,410
6/30/2039	1	476,617	511,410
6/30/2040	0	0	0





Schedule G – Amortization of UAAL

AMORTIZATION OF 2016 INCREMENTAL UAAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 6/30/2016</u>	<u>Annual Amortization Payment</u>
6/30/2016	25	(\$4,944,605)	(\$443,584)
6/30/2017	24	(4,871,867)	(439,795)
6/30/2018	23	(4,792,589)	(436,120)
6/30/2019	22	(4,706,329)	(436,120)
6/30/2020	21	(4,613,771)	(436,120)
6/30/2021	20	(4,514,457)	(436,120)
6/30/2022	19	(4,407,893)	(436,120)
6/30/2023	18	(4,293,550)	(436,120)
6/30/2024	17	(4,170,859)	(436,120)
6/30/2025	16	(4,039,213)	(436,120)
6/30/2026	15	(3,897,956)	(436,120)
6/30/2027	14	(3,746,387)	(436,120)
6/30/2028	13	(3,583,754)	(436,120)
6/30/2029	12	(3,409,248)	(436,120)
6/30/2030	11	(3,222,004)	(436,120)
6/30/2031	10	(3,021,090)	(436,120)
6/30/2032	9	(2,805,510)	(436,120)
6/30/2033	8	(2,574,193)	(436,120)
6/30/2034	7	(2,325,990)	(436,120)
6/30/2035	6	(2,059,668)	(436,120)
6/30/2036	5	(1,773,904)	(436,120)
6/30/2037	4	(1,467,279)	(436,120)
6/30/2038	3	(1,138,271)	(436,120)
6/30/2039	2	(785,245)	(436,120)
6/30/2040	1	(406,449)	(436,120)
6/30/2041	0	0	0





Schedule G – Amortization of UAAL

AMORTIZATION OF 2017 INCREMENTAL UAAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 6/30/2017</u>	<u>Annual Amortization Payment</u>
6/30/2017	25	\$18,819,066	\$1,673,487
6/30/2018	24	18,538,189	1,659,121
6/30/2019	23	18,232,356	1,659,121
6/30/2020	22	17,904,197	1,659,121
6/30/2021	21	17,552,082	1,659,121
6/30/2022	20	17,174,263	1,659,121
6/30/2023	19	16,768,863	1,659,121
6/30/2024	18	16,333,869	1,659,121
6/30/2025	17	15,867,120	1,659,121
6/30/2026	16	15,366,299	1,659,121
6/30/2027	15	14,828,918	1,659,121
6/30/2028	14	14,252,308	1,659,121
6/30/2029	13	13,633,605	1,659,121
6/30/2030	12	12,969,737	1,659,121
6/30/2031	11	12,257,407	1,659,121
6/30/2032	10	11,493,076	1,659,121
6/30/2033	9	10,672,950	1,659,121
6/30/2034	8	9,792,954	1,659,121
6/30/2035	7	8,848,719	1,659,121
6/30/2036	6	7,835,554	1,659,121
6/30/2037	5	6,748,428	1,659,121
6/30/2038	4	5,581,942	1,659,121
6/30/2039	3	4,330,303	1,659,121
6/30/2040	2	2,987,294	1,659,121
6/30/2041	1	1,546,245	1,659,121
6/30/2042	0	0	0





Schedule G – Amortization of UAAL

AMORTIZATION OF 2018 INCREMENTAL UAAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 6/30/2018</u>	<u>Annual Amortization Payment</u>
6/30/2018	25	\$9,532,508	\$840,217
6/30/2019	24	9,388,164	840,217
6/30/2020	23	9,233,283	840,217
6/30/2021	22	9,067,096	840,217
6/30/2022	21	8,888,777	840,217
6/30/2023	20	8,697,441	840,217
6/30/2024	19	8,492,137	840,217
6/30/2025	18	8,271,846	840,217
6/30/2026	17	8,035,474	840,217
6/30/2027	16	7,781,846	840,217
6/30/2028	15	7,509,704	840,217
6/30/2029	14	7,217,695	840,217
6/30/2030	13	6,904,370	840,217
6/30/2031	12	6,568,172	840,217
6/30/2032	11	6,207,432	840,217
6/30/2033	10	5,820,357	840,217
6/30/2034	9	5,405,026	840,217
6/30/2035	8	4,959,376	840,217
6/30/2036	7	4,481,194	840,217
6/30/2037	6	3,968,104	840,217
6/30/2038	5	3,417,559	840,217
6/30/2039	4	2,826,824	840,217
6/30/2040	3	2,192,965	840,217
6/30/2041	2	1,512,834	840,217
6/30/2042	1	783,054	840,217
6/30/2043	0	0	0





Schedule G – Amortization of UAAL

AMORTIZATION OF 2019 INCREMENTAL UAAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 6/30/2019</u>	<u>Annual Amortization Payment</u>
6/30/2019	25	\$5,479,988	\$483,019
6/30/2020	24	5,397,008	483,019
6/30/2021	23	5,307,971	483,019
6/30/2022	22	5,212,435	483,019
6/30/2023	21	5,109,924	483,019
6/30/2024	20	4,999,930	483,019
6/30/2025	19	4,881,906	483,019
6/30/2026	18	4,755,266	483,019
6/30/2027	17	4,619,382	483,019
6/30/2028	16	4,473,579	483,019
6/30/2029	15	4,317,131	483,019
6/30/2030	14	4,149,263	483,019
6/30/2031	13	3,969,141	483,019
6/30/2032	12	3,775,869	483,019
6/30/2033	11	3,568,489	483,019
6/30/2034	10	3,345,970	483,019
6/30/2035	9	3,107,207	483,019
6/30/2036	8	2,851,015	483,019
6/30/2037	7	2,576,120	483,019
6/30/2038	6	2,281,159	483,019
6/30/2039	5	1,964,665	483,019
6/30/2040	4	1,625,066	483,019
6/30/2041	3	1,260,678	483,019
6/30/2042	2	869,689	483,019
6/30/2043	1	450,157	483,019
6/30/2044	0	0	0





Schedule G – Amortization of UAAL

AMORTIZATION OF 2020 INCREMENTAL UAAL

<u>Valuation Date</u>	<u>Amortization Period</u>	<u>Balance of New Incremental UAAL 6/30/2020</u>	<u>Annual Amortization Payment</u>
6/30/2020	25	\$22,305,891	\$1,966,092
6/30/2021	24	21,968,129	1,966,092
6/30/2022	23	21,605,710	1,966,092
6/30/2023	22	21,216,835	1,966,092
6/30/2024	21	20,799,572	1,966,092
6/30/2025	20	20,351,849	1,966,092
6/30/2026	19	19,871,442	1,966,092
6/30/2027	18	19,355,965	1,966,092
6/30/2028	17	18,802,858	1,966,092
6/30/2029	16	18,209,375	1,966,092
6/30/2030	15	17,572,567	1,966,092
6/30/2031	14	16,889,273	1,966,092
6/30/2032	13	16,156,097	1,966,092
6/30/2033	12	15,369,400	1,966,092
6/30/2034	11	14,525,275	1,966,092
6/30/2035	10	13,619,528	1,966,092
6/30/2036	9	12,647,661	1,966,092
6/30/2037	8	11,604,848	1,966,092
6/30/2038	7	10,485,910	1,966,092
6/30/2039	6	9,285,290	1,966,092
6/30/2040	5	7,997,024	1,966,092
6/30/2041	4	6,614,714	1,966,092
6/30/2042	3	5,131,496	1,966,092
6/30/2043	2	3,540,004	1,966,092
6/30/2044	1	1,832,332	1,966,092
6/30/2045	0	0	0





Schedule H – Summary of Main System Provisions

AS INTERPRETED FOR VALUATION PURPOSES

The Public School Employees' Retirement System (PSERS) is a cost-sharing multiple employer defined benefit pension plan established by the Georgia General Assembly in 1969 for the purpose of providing retirement allowances and other benefits for public school employees who are not eligible for membership in the Teachers Retirement System of Georgia.

Normal Retirement Benefit

Eligibility	Age 65 and 10 years of creditable service.
Benefit	Monthly benefit is \$15.00 multiplied by years of creditable service for members retiring on or before August 1, 2012 and \$15.50 multiplied by years of creditable service for members retiring after August 1, 2012. For members with retirement dates prior to July 1, 2013, a one-time 1.75% increase was made at time of retirement.

Early Retirement Benefit

Eligibility	Age 60 and 10 years of creditable service.
Benefit	Accrued benefit reduced by 6% for each year member is under age 65.

Disability Retirement Benefit

Eligibility	15 years of creditable service.
Benefit	Accrued benefit payable immediately.

Deferred Vested Retirement Benefit

Eligibility	10 years of creditable service. Member contributions not withdrawn.
Benefit	Accrued benefit deferred to age 65 or reduced benefit payable at age 60.

Death Benefit

Eligibility	Death in service and the member is at least age 60 and has at least 10 years of creditable service.
Benefit	Benefit payable to beneficiary under the joint and survivor annuity payment option. If the member dies in service under age 60 or with less than 10 years of creditable service, his beneficiary receives a refund of the member's accumulated contributions.





Schedule H – Summary of Main System Provisions

Termination Benefit

Eligibility	Less than 10 years of creditable service.
Benefit	Return of the member's accumulated contributions.

Payment Options

- (1) Life annuity. Guaranteed payment of accumulated member contributions.
- (2) Joint and survivorship annuity.
- (3) Certain and life annuity.

Post-Retirement Adjustments

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

Contributions

By Members	Members who joined the System prior to July 1, 2012 contribute \$4 per month. Members joining the System on or after July 1, 2012 contribute \$10 per month.
By Employers	Employer contributions are actuarially determined and approved and certified by the Board.





Schedule I – Tables of Membership Data

NUMBER OF ACTIVE MEMBERS BY AGE AND SERVICE AS OF JUNE 30, 2020

Attained Age	Years of Service									Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & Up	
Under 25	146	311	4							461
25 to 29	192	733	121							1,046
30 to 34	231	1,164	303	67	5					1,770
35 to 39	282	1,389	496	172	63	3				2,405
40 to 44	236	1,372	658	319	151	42				2,778
45 to 49	275	1,488	894	602	378	145	39	3		3,824
50 to 54	297	1,601	1,044	841	625	400	126	42	3	4,979
55 to 59	272	1,728	1,233	1,054	938	644	314	144	59	6,386
60 to 64	201	1,486	1,191	928	697	501	301	206	129	5,640
65 to 69	109	827	778	569	304	197	151	117	94	3,146
70 & Over	62	499	554	514	282	165	69	66	90	2,301
Total	2,303	12,598	7,276	5,066	3,443	2,097	1,000	578	375	34,736

Average Age: 53.3
Average Service: 9.1





Schedule I – Tables of Membership Data

NUMBER OF RETIRED MEMBERS AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	0	\$ 0	\$ 0
50 – 54	0	0	0
55 – 59	0	0	0
60 – 64	1,077	2,812,675	2,612
65 – 69	3,197	9,817,958	3,071
70 – 74	4,252	13,794,919	3,244
75 – 79	3,606	12,252,059	3,398
80 – 84	2,610	9,715,591	3,722
85 – 89	1,499	6,421,172	4,284
90 – 94	578	2,809,003	4,860
95 & Over	176	931,972	5,295
Total	16,995	\$ 58,555,349	\$ 3,445

NUMBER OF BENEFICIARIES AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	163	\$ 223,817	\$ 1,373
50 – 54	76	120,612	1,587
55 – 59	110	198,944	1,809
60 – 64	111	242,868	2,188
65 – 69	156	357,624	2,292
70 – 74	149	330,001	2,215
75 – 79	154	383,945	2,493
80 – 84	121	341,216	2,820
85 – 89	77	229,236	2,977
90 – 94	42	133,027	3,167
95 & Over	19	52,682	2,773
Total	1,178	\$ 2,613,972	\$ 2,219





Schedule I – Tables of Membership Data

NUMBER OF DISABLED RETIREES AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	3	\$ 10,456	\$ 3,485
50 – 54	21	83,405	3,972
55 – 59	91	374,445	4,115
60 – 64	206	890,463	4,323
65 – 69	201	922,502	4,590
70 – 74	164	830,453	5,064
75 – 79	160	909,195	5,682
80 – 84	97	596,042	6,145
85 – 89	36	212,039	5,890
90 – 94	9	58,587	6,510
95 & Over	0	0	0
Total	988	\$ 4,887,587	\$ 4,947

NUMBER OF DEFERRED VESTED MEMBERS AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 35	10	\$ 20,832	\$ 2,083
35 – 39	73	156,877	2,149
40 – 44	206	490,042	2,379
45 – 64	499	1,232,177	2,469
50 – 54	1,033	2,758,076	2,670
55 – 59	1,659	4,627,613	2,789
60 – 64	1,274	3,579,865	2,810
65 – 69	431	1,187,203	2,755
70 – 74	159	445,306	2,801
75 & Over	77	222,160	2,885
Total	5,421	\$ 14,720,151	\$ 2,715





Schedule J – Comprehensive Annual Financial Report Schedules

COMPREHENSIVE ANNUAL FINANCIAL REPORT SCHEDULES

GA PSERS: Solvency Test							
Actuarial Valuation as of 6/30	Actuarial Accrued Liability for:			Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets		
	Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Members (Employer Funded Portion) (3)		(1)	(2)	(3)
2020	\$19,898	\$721,554	\$415,545	\$961,431	100%	100.0%	52.9%
2019	19,109	695,624	393,925	931,032	100%	100.0%	54.9%
2018	18,570	674,222	388,392	905,046	100%	100.0%	54.6%
2017	18,077	640,197	377,661	865,786	100%	100.0%	54.9%
2016	17,413	609,807	361,663	834,554	100%	100.0%	57.3%
2015	17,196	585,471	364,742	805,277	100%	100.0%	55.5%
2014	16,995	566,344	341,026	765,450	100%	100.0%	53.4%
2013	17,016	549,796	343,444	727,268	100%	100.0%	46.7%
2012	16,917	537,284	341,123	710,915	100%	100.0%	45.9%
2011	16,627	532,509	336,790	719,601	100%	100.0%	50.6%

All dollar amounts are in thousands.

GA PSERS: Schedule of Retirants Added to and Removed from Rolls								
Year Ended	Added to Rolls		Removed from Rolls		Roll End of Year		% Increase in Annual Allowances	Average Annual Allowances
	Number	Annual Allowances (in thousands)	Number	Annual Allowances (in thousands)	Number	Annual Allowances (in thousands)		
June 30, 2020	1,165	\$5,679	932	\$3,484	19,161	\$66,057	3.4%	\$3,447
June 30, 2019	1,301	5,319	795	3,101	18,928	63,862	3.6%	3,374
June 30, 2018	1,258	5,436	885	3,354	18,422	61,644	3.5%	3,346
June 30, 2017	1,253	4,322	756	2,927	18,049	59,562	2.4%	3,300
June 30, 2016	1,363	3,927	763	2,890	17,552	58,167	1.8%	3,314
June 30, 2015	1,247	3,482	690	2,679	16,952	57,130	1.4%	3,370
June 30, 2014	1,345	3,749	647	2,604	16,395	56,327	2.1%	3,436
June 30, 2013	1,298	3,803	650	2,738	15,697	55,182	2.0%	3,515
June 30, 2012	1,133	3,192	684	2,834	15,049	54,117	0.7%	3,596
June 30, 2011	1,174	3,168	731	3,072	14,600	53,759	0.2%	3,682





Schedule K – Allocation of Contributions

ALLOCATION OF 2022-2023 ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION BY SCHOOL SYSTEM

System Number	System Name	Contribution
1	Appling	\$ 61,123
2	Atkinson	33,340
3	Bacon	37,044
4	Baker	8,335
5	Baldwin	103,723
6	Banks	66,679
7	Barrow	250,973
8	Bartow	296,352
9	Ben Hill	65,753
10	Berrien	53,714
11	Bibb	579,738
12	Bleckley	75,014
13	Brantley	93,536
14	Brooks	50,935
15	Bryan	177,811
16	Bulloch	263,012
17	Burke	118,541
18	Butts	82,423
19	Calhoun	18,522
20	Camden	200,964
21	Candler	37,970
22	Carroll	237,082
23	Catoosa	285,239
24	Charlton	36,118
25	Chatham	852,938
26	Chattahoochee	16,670
27	Chattooga	47,231
28	Cherokee	662,161
29	Clarke	395,445
30	Clay	9,261
31	Clayton	1,103,913
32	Clinch	25,931
33	Cobb	2,151,333
34	Coffee	125,950
35	Colquitt	187,998
36	Columbia	591,778
37	Cook	69,457
38	Coweta	580,665
39	Crawford	50,009





Schedule K – Allocation of Contributions

ALLOCATION OF 2022-2023 ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION BY SCHOOL SYSTEM

System Number	System Name	Contribution
40	Crisp	\$ 97,240
41	Dade	45,379
42	Dawson	83,349
43	Decatur	134,284
44	Dekalb	1,963,334
45	Dodge	68,531
46	Dooly	47,231
47	Dougherty	346,361
48	Douglas	455,641
49	Early	46,305
50	Echols	12,965
51	Effingham	217,633
52	Elbert	62,975
53	Emanuel	91,684
54	Evans	41,674
55	Fannin	81,497
56	Fayette	356,548
57	Floyd	143,545
58	Forsyth	960,365
59	Franklin	87,979
61	Gilmer	76,866
62	Glascok	18,522
63	Glynn	324,135
64	Gordon	93,536
65	Grady	88,906
66	Greene	50,935
67	Gwinnett	3,231,166
68	Habersham	187,072
69	Hall	457,493
70	Hancock	37,970
71	Haralson	45,379
72	Harris	114,836
73	Hart	102,797
74	Heard	37,970
75	Henry	496,389
76	Houston	750,141
77	Irwin	23,152
78	Jackson	204,668





Schedule K – Allocation of Contributions

ALLOCATION OF 2022-2023 ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION BY SCHOOL SYSTEM

System Number	System Name	Contribution
79	Jasper	\$ 63,901
80	Jeff Davis	63,901
81	Jefferson	71,310
82	Jenkins	28,709
83	Johnson	28,709
84	Jones	117,615
85	Lamar	59,270
86	Lanier	30,561
87	Laurens	162,067
88	Lee	152,806
89	Liberty	264,865
90	Lincoln	42,601
91	Long	87,053
92	Lowndes	244,490
93	Lumpkin	101,871
94	Macon	38,896
95	Madison	97,240
96	Marion	32,413
97	McDuffie	100,019
98	McIntosh	33,340
99	Meriwether	97,240
100	Miller	28,709
101	Mitchell	46,305
102	Monroe	137,989
103	Montgomery	22,226
104	Morgan	62,975
105	Murray	100,019
106	Muscogee	708,466
107	Newton	438,971
108	Oconee	162,994
109	Oglethorpe	64,827
110	Paulding	519,542
111	Peach	54,640
112	Pickens	89,832
113	Pierce	64,827
114	Pike	37,970
115	Polk	102,797
116	Pulaski	37,044
117	Putnam	86,127





Schedule K – Allocation of Contributions

ALLOCATION OF 2022-2023 ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION BY SCHOOL SYSTEM

System Number	System Name	Contribution
118	Quitman	\$ 10,187
119	Rabun	72,236
120	Randolph	18,522
121	Richmond	693,649
122	Rockdale	359,327
123	Schley	20,374
124	Screven	49,083
125	Seminole	38,896
126	Spalding	243,564
127	Stephens	96,314
128	Stewart	12,039
129	Sumter	123,171
130	Talbot	18,522
131	Taliaferro	6,483
132	Tattnall	71,310
133	Taylor	37,044
134	Telfair	40,748
135	Terrell	42,601
136	Thomas	130,580
137	Tift	96,314
138	Toombs	45,379
139	Towns	36,118
140	Treutlen	20,374
141	Troup	422,301
142	Turner	27,783
143	Twiggs	22,226
144	Union	74,088
145	Upton	137,989
146	Walker	250,047
147	Walton	325,061
148	Ware	158,363
149	Warren	18,522
150	Washington	60,196
151	Wayne	134,284
152	Webster	2,778
153	Wheeler	25,005
154	White	69,457
155	Whitfield	184,294
156	Wilcox	30,561





Schedule K – Allocation of Contributions

ALLOCATION OF 2022-2023 ACTUARIALLY DETERMINED EMPLOYER CONTRIBUTION BY SCHOOL SYSTEM

System Number	System Name	Contribution
157	Wilkes	\$ 49,083
158	Wilkinson	37,970
159	Worth	59,270
205	Bremen	17,596
206	Buford	84,275
207	Calhoun	28,709
209	Carrollton	82,423
210	Cartersville	50,009
212	Chickamauga	21,300
214	Commerce	22,226
216	Dalton	79,645
217	Decatur	112,984
219	Dublin	46,305
221	Gainesville	125,023
224	Jefferson	46,305
226	Marietta	94,462
230	Pelham	24,079
232	Rome	107,428
247	Social Circle	25,005
236	Thomasville	27,783
239	Trion	21,300
240	Valdosta	187,998
241	Vidalia	39,822
	Atlanta Metropolitan College	926
	Furlow Charter School	1,852
	Georgia Magnet Charter School	926
	Georgia Military College	22,226
	Kipp Metro Atlanta Collaborative Inc	43,527
	School for Arts Infused Learning	3,704
	Scintilla Charter Academy	1,852
	The Globe Academy	926

