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EMPLOYEES' RETIREMENT SYSTEM OF GEORGIA

GEORGIA JUDICIAL RETIREMENT SYSTEM

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

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April 15, 2021

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

Attention: Mr. James Potvin, Executive Director

Members of the Board:

Section 47-23-21 of the law governing the operation of the Georgia Judicial Retirement System (JRS) provides that the actuary shall make annual valuations of the contingent assets and liabilities of the Retirement System on the basis of regular interest and the tables last adopted by the Board of Trustees. We have submitted the report giving the results of the actuarial valuation of the System prepared as of June 30, 2020. The report indicates that annual employer contributions at the rate of 8.03% of compensation 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 the 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.

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 in June 30, 2020 was less than 7.30%, the assumed rate of return used in the current valuation remained at 7.30%.

The System is funded on an actuarial reserve basis. The actuarial assumptions recommended by the actuary and adopted by the Board are in the aggregate reasonably related to the experience under the System and to reasonable expectations of anticipated experience under the System. The assumptions and methods used for financial reporting purposes meet the parameters set by Actuarial Standards of Practice (ASOPs). The funding objective of the plan is that contribution rates over time will remain level as a percent of payroll. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a level percent of payroll. Gains and losses are reflected in the total unfunded accrued liability which is negative and being amortized as a level percent of payroll 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 being funded in conformity with the minimum funding standard set forth in Code Section 47-20-10 of the Public Retirement Systems Standards Law and the funding policy adopted by the Board. In our opinion the System is operating on an actuarially sound basis. Assuming that contributions to the System are made by the employer from year to year in the future at the rates recommended on the basis of the successive actuarial valuations, the continued sufficiency of the retirement fund to provide the benefits called for under the System may be safely anticipated.

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

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

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

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

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

Sincerely yours,

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

Cathy Turcot
Principal and Managing Director

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 current and preceding valuations are summarized below:

Valuation Date	June 30, 2020	June 30, 2019
Active Members:		
Number	522	521
Annual compensation	$ 61,544,038	$ 60,531,960
Retired Members and Beneficiaries:		
Number	413	398
Annual allowances	$ 29,114,514	$ 28,113,182
Deferred Vested Members:		
Number	26	28
Annual allowances	$ 1,164,284	$ 1,181,529
Assets:		
Fair Value	$ 485,930,000	$ 479,372,000
Actuarial Value	487,591,000	474,003,000
Valuation Interest Rate	7.30%	7.30%
Unfunded actuarial accrued liability	$ (29,402,557)	$ (33,338,935)
Blended Amortization period (years)	12.8	14.3
Funded Ratio based on Actuarial Value of Assets	106.4%	107.6%
Contribution Rates for Fiscal Year Ending	**June 30, 2023**	**June 30, 2022**
Actuarially Determined Employer Contribution Rates (ADEC):		
Normal*	12.93%	13.93%
Accrued liability	(4.90)	(5.12)
Total	8.03%	8.81%

* The normal contribution rate includes administrative expenses.

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.

3. Schedule D of this report outlines the full set of actuarial assumptions used to prepare the current valuation. Since the previous valuation, various assumptions and 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%.
Wage Inflation	Lowered assumption from 3.25% to 3.00%.
Demographic Assumptions	
Withdrawal	Increased rates for ages 40 and below and decreased rates for ages between 40 and 55.
Pre-Retirement Mortality	Changed to the Pub-2010 General Employee table, with no adjustments, projected generationally with the MP-2019 scale.
Disability Retirement	Decreased rates to better match experience.
Service Retirement	Changed assumed rates to better match experience and extended fixed retirement from age 75 to age 78.
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.
Salary Scale	Decreased rates to better match experience.
Other Actuarial Methods and Assumptions	
Administrative Expenses	Changed from budgeted administrative expenses to 1.35% of payroll.
Amortization Method	No change to current method.
Asset Smoothing	No change to current method.
Option Factors	Changed option factors to reflect change in mortality rate table.
Valuation Cost Method	No change to current method.

4. In addition, the Board amended the JRS Funding Policy on June 18, 2020. The JRS 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. 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.
7. We have prepared the Solvency Test and the Schedule of Retirants Added to and Removed from Rolls for the System's Comprehensive Annual Financial Report. These tables are shown in Schedule J.
8. 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. 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 522 active members, with annual compensation of $61,544,038.

2. Data was provided by the Retirement System for inactive members who are eligible for deferred vested benefits. The valuation included 26 deferred vested members with estimated annual allowances totaling $1,164,284. In addition, there are 36 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 receiving a benefit 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 RECEIVING BENEFITS AS OF JUNE 30, 2020

GROUP	NUMBER	ANNUAL RETIREMENT ALLOWANCES
Service Retirements	319	$ 26,078,089
Disability Retirements	2	116,535
Beneficiaries of Deceased Members	92	2,919,890
Total	413	$ 29,114,514

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 annuity 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 $97,503,000.

   (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 annuity portion of the allowance. On June 30, 2020, the fair value of assets credited to the Pension Accumulation Fund amounted to $388,427,000.

2. As of June 30, 2020, the total fair value of assets amounted to $485,930,000 as reported by the Auditor of the System.

3. The actuarial value of assets used for the current valuation was determined to be $487,591,000 based on a five-year smoothing of investment gains and losses. Schedule B shows the development of the actuarial value of assets as of June 30, 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. The valuation was prepared in accordance with the actuarial assumptions and methods set forth in Schedule D and the actuarial cost method which is described in Schedule E.

2. The valuation balance sheet shows that the System has total prospective liabilities of $551,605,713, of which $267,433,378 is for the prospective benefits payable on account of present retired members, beneficiaries of deceased members, and members entitled to deferred vested benefits, and $284,172,335 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 $487,591,000 as of June 30, 2020. The difference of $64,014,713 between the total liabilities and the total present assets represents the present value of contributions to be made in the future. Of this amount, $37,349,269 is the present value of future contributions expected to be made by or on behalf of members, and the balance of $26,665,444 represents the present value of future contributions payable by the employers.

3. The employer's contributions to the System consist of normal contributions and accrued liability contributions. The valuation indicates that annual employer normal contributions at the rate of 11.58% of active members' compensation are required to provide the currently accruing benefits of the System.

4. Prospective normal contributions at the rate of 11.58% of active members' compensation have a present value of $56,068,001. When this amount is subtracted from $26,665,444, 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 ($29,402,557).

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 over a closed 20-year period. In each subsequent valuation, all benefit changes, assumption and method changes, and experience gains and/or losses that have occurred since the previous valuation will determine a New Incremental UAAL. Each New Incremental UAAL will be amortized over a closed

20-year period from the date it is established. The UAAL will be amortized as a level dollar amount if the Funded Ratio is less than 100% or as a level percentage of payroll if the Funded Ratio is greater than 100%, over a period not to exceed 20 years.

6. The total UAAL contribution rate is (4.90)% of payroll, determined in accordance with the Board's funding policy. The UAAL contribution rate has been calculated on the assumption that the aggregate amount of the accrued liability contribution will increase by 3.00% each year.

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	$(14,901,326)	13	$(1,553,756)
New Incremental 6/30/2014	(13,247,543)	14	(1,306,702)
New Incremental 6/30/2015	(15,339,460)	15	(1,438,457)
New Incremental 6/30/2016	4,112,223	16	368,200
New Incremental 6/30/2017	8,978,410	17	770,491
New Incremental 6/30/2018	(5,270,918)	18	(427,196)
New Incremental 6/30/2019	3,096,042	19	241,790
New Incremental 6/30/2020	3,170,015	20	243,985
Total UAAL	$(29,402,557)		$(3,101,645)
Blended Amortization Period (years)			12.8
Estimated payroll			$63,390,359
UAAL Contribution Rate			(4.90)%

Section V – Contributions Payable by Employees

1. The contributions of employers consist of a normal contribution and an accrued liability contribution as determined by actuarial valuation.

2. The normal contribution rate is calculated as the level percentage rate which, if applied to the compensation of 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 11.58% of active members' compensation.

3. An additional contribution of 1.35% of active members' compensation is required for administrative expenses for the fiscal year ending June 30, 2023.

4. The total normal contribution rate including administrative expenses is, therefore, 12.93% of active members' compensation.

5. The accrued liability contribution on the basis of the Board's funding policy is (4.90)% of active members' compensation and was determined assuming that the total payroll of active members will increase by 3.00% each year.

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 RATES (ADEC)
FOR FISCAL YEAR ENDING JUNE 30, 2023

CONTRIBUTION	PERCENTAGE OF ACTIVE MEMBERS' COMPENSATION
Normal	12.93%
Accrued Liability	(4.90)
Total	8.03%

Section VI – Accounting Information

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

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

NUMBER OF ACTIVE AND RETIRED MEMBERS
AS OF JUNE 30, 2020

GROUP	NUMBER
Retirees and beneficiaries currently receiving benefits	413
Terminated employees entitled to benefits but not yet receiving benefits	62
Active plan members	522
Total	997

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	$ 396,399	$ 350,298	$ (46,101)	113.2%	$ 54,272	(84.9)%
6/30/2016	418,412	376,740	(41,672)	111.1	57,401	(72.6)
6/30/2017*	439,828	407,607	(32,221)	107.9	59,695	(54.0)
6/30/2018*	461,787	424,724	(37,063)	108.7	60,572	(61.2)
6/30/2019	474,003	440,664	(33,339)	107.6	60,532	(55.1)
6/30/2020#	487,591	458,188	(29,403)	106.4	61,544	(47.8)

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

Section VI – Accounting Information

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

Year Ending	Actuarially Determined Employer Contribution	Percentage Contributed
6/30/2015	$ 4,260	100%
6/30/2016	7,623	100
6/30/2017	6,684	100
6/30/2018	6,566	100
6/30/2019	5,254	100
6/30/2020	6,464	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 percent of pay, closed
Remaining amortization period	12.8 years
Asset valuation method	5-year smoothed fair
Actuarial assumptions:	
Investment rate of return*	7.30%
Projected salary increases*	3.75%
Cost-of-living adjustments	None

* 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 as least once in each five-year period. 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, various new assumptions and methods were adopted by the Board on December 17, 2020. The next experience investigation will be prepared for the period July 1, 2019 through June 30, 2024.

2. The following table shows the estimated gain or loss from various factors that resulted in an increase of $3,936,378 in the unfunded actuarial accrued liability (UAAL) from ($33,338,935) to ($29,402,557) during the fiscal year ending June 30, 2020.

3. The breakdown of the major reasons for the $3.9 million increase in the UAAL are as follows:

    - The assumption changes due to the experience study increased the UAAL approximately $5.1 million.
    - There was a loss of $1.5 million 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 loss of approximately $1.1 million due to pensioner mortality.
    - Partially offsetting these losses were salary increases that were less than expected resulting in approximately a $4.2 million gain.
    - There was also an offsetting gain for turnover and retirement of approximately $1.4 million.

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	$ (2,433.7)
Accrued liability contribution	2,367.2
Experience:	
Valuation asset growth	1,470.0
Pensioners' mortality	1,109.5
Turnover and retirements	(1,383.9)
New entrants	492.4
Salary increases	(4,160.2)
Method changes	0.0
Amendments	0.0
Assumption changes	5,058.9
Miscellaneous changes	0.0
Data changes	1,416.2
Total	$ 3,936.4

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, please review the following chart showing the Asset Volatility Ratio (AVR), defined as the fair value of assets divided by covered payroll.

($ in thousands)

Valuation	Fair Value of Assets	Covered Payroll	Asset Volatility Ratio
2015	$404,852	$54,272	7.46
2016	$403,011	$57,401	7.02
2017	$441,182	$59,695	7.39
2018	$466,657	$60,572	7.70
2019	$479,372	$60,532	7.92
2020	$485,930	$61,544	7.90

The asset volatility ratio is especially useful to compare across plans or through time. It is also frequently useful to consider how the AVR translates into changes in the Required Contribution Rate (actuarially determined employer contribution rate). For example, the following table demonstrates that with an AVR of 7.00, if the market value return is 10% below assumed, or -2.70% for the System, there will be an increase in the Required Contribution Rate of 1.02% of payroll in the first year. Without asset smoothing or without returns above the expected return in the next four years, the impact on the Required Contribution Rate would be 5.10%. A higher AVR would produce more volatility in the Required Contribution Rate.

AVR	Unsmoothed Amortization	Smoothed Amortization
6.0	4.37%	0.87%
7.0	5.10%	1.02%
8.0	5.83%	1.17%

Section VIII – Risk Assessment

Sensitivity Measures

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

The following tables contains the key measures for the System using the valuation assumption for investment return of 7.30%, 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 or payroll increases. In addition, simply because the valuation results under alternative assumptions are shown here, it should not be implied that CMC believes that either assumption (6.30% or 8.30%) would comply with actuarial standards of practice.

($ in thousands)

As of June 30, 2020	Current Discount Rate (7.3%)	-1% Discount Rate (6.3%)	+1% Discount Rate (8.3%)
Accrued Liability	$458,188	$502,134	$420,141
Unfunded Liability	($29,403)	$14,543	($67,450)
Funded Ratio (AVA)	106.4%	97.1%	116.1%
ADEC Rate*	8.03%	17.12%	0.00%

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

Schedule A – Valuation Balance Sheet

THE PRESENT AND PROSPECTIVE ASSETS AND LIABILITIES OF THE GEORGIA JUDICIAL 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	$ 235,543,823	
	- Death and survivor benefits	20,124,120	
	- Deferred vested benefits	11,765,435	
	Total		$ 267,433,378
(2)	Present value of prospective benefits payable on account of present active members		284,172,335
(3)	TOTAL ACTUARIAL LIABILITIES		$ 551,605,713
	PRESENT AND PROSPECTIVE ASSETS		
(4)	Actuarial value of assets		$ 487,591,000
(5)	Present value of total future contributions = (3)-(4)	$ 64,014,713	
(6)	Present value of future member contributions		37,349,269
(7)	Present value of future employer contributions = (5)-(6)	$ 26,665,444	
(8)	Employer normal contribution rate (net of expenses)	11.58%	
(9)	Present value of future payroll	$ 484,179,625	
(10)	Prospective normal contributions = (8) x (9)		56,068,001
(11)	Prospective unfunded accrued liability contributions = (7)-(10)		(29,402,557)
(12)	TOTAL PRESENT AND PROSPECTIVE ASSETS		$ 551,605,713

Schedule B – Development of Actuarial Value of Assets

(1)	Actuarial Value Beginning of Year		$ 474,003,000
(2)	Fair Value End of Year		$ 485,930,000
(3)	Fair Value Beginning of Year		$ 479,372,000
(4)	Cash Flow		
	(a)	Contributions	$ 11,469,000
	(b)	Benefit Payments	(29,476,000)
	(c)	Administrative Expenses	(849,000)
	(d)	Investment Expenses	(195,000)
	(e)	Net: (4)(a) + (4)(b) + (4)(c) + (4)(d)	$ (19,051,000)
(5)	Investment Income		
	(a)	Fair Total: (2) – (3) – (4)(e)	$ 25,609,000
	(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)	$ 34,501,000
	(d)	Amount for Phased-In Recognition: (5)(a) – (5)(c)	(8,892,000)
(6)	Phased-In Recognition of Investment Income		
	(a)	Current Year: (5)(d) / 5	$ (1,778,000)
	(b)	First Prior Year	(516,000)
	(c)	Second Prior Year	1,552,000
	(d)	Third Prior Year	3,890,000
	(e)	Fourth Prior Year	(5,010,000)
	(f)	Total Recognized Investment Gain	$ (1,862,000)
(7)	Actuarial Value End of Year: (1) + (4)(e) + (5)(c) + (6)(f)		$ 487,591,000
(8)	Difference Between Fair & Actuarial Values: (2) – (7)		$ (1,661,000)
(9)	Rate of Return on Actuarial Value*		6.98%

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

Schedule C – Summary of Receipts and Disbursements

FAIR VALUE OF ASSETS

Receipts for the Year	YEAR ENDING June 30, 2020 ($1,000's)	YEAR ENDING June 30, 2019 ($1,000's)
Contributions:		
Members	$ 5,005	$ 5,469
Non-employer	2,442	2,137
Employer	4,022	3,117
Subtotal	$ 11,469	$ 10,723
Investment Earnings	25,414	30,827
TOTAL	$ 36,883	$ 41,550
Disbursements for the Year		
Benefit Payments	$ 29,263	$ 27,462
Refunds to Members	213	553
Administrative Expenses	849	820
TOTAL	$ 30,325	$ 28,835
Excess of Receipts over Disbursements	$ 6,558	$ 12,715
Reconciliation of Asset Balances		
Asset Balance as of the Beginning of Year	$ 479,372	$ 466,657
Excess of Receipts over Disbursements	6,558	12,715
Asset Balance as of the End of Year	$ 485,930	$ 479,372
Rate of Return*	5.41%	6.74%

* 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 December 17, 2020. Valuation interest rate adopted by the Board March 15, 2018.

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

SALARY INCREASES: 3.75% annually, for all years of service.

RATES OF WITHDRAWAL AND DISABILITY BEFORE SERVICE RETIREMENT: Representative values of the assumed annual rates of withdrawal and disability before service retirement are as follows:

	Annual Rates of	
Age	Withdrawal	Disability
25	5.00%	.0125%
30	5.00	.0250
35	5.00	.0375
40	4.00	.0500
45	3.50	.0875
50	2.75	.1250
55	2.75	.2250
60	2.50	.3625
65	2.50	.5875

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

Age	Annual Rates of Retirement
60	15%
61-64	10
65	13
66 – 67	15
68 – 69	18
70 – 77	25
78	100

Schedule D – Outline of Actuarial Assumptions and Methods

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

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

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

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

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

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

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

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

Schedule D – Outline of Actuarial Assumptions and Methods

ADMINISTRATIVE EXPENSES: A rate of 1.35% of payroll is added to the normal contribution rate.

AMORTIZATION METHOD AND PAYROLL GROWTH ASSUMPTION: Level percentage of payroll, assuming payroll will increase 3.00% per year.

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 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 actuarial value.

PERCENT MARRIED: For members hired on and after July 1, 2012, 100% are assumed to be married. For these members and for members who have elected spouse coverage, husbands are assumed to be three years older than their wives.

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

Schedule E – Actuarial Cost Method

1. The valuation is prepared on the projected benefit basis, under which the present value, at the interest rate assumed to be earned in the future (currently 7.30%), 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. Future salary increases are also anticipated. The present value of the expected benefits payable on account of the active members is added to the present value of the expected future payments to retired members, 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 JRS Board of Trustees

The purpose of this Funding Policy is to state the overall objectives for the Georgia Judicial 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 JRS 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 contribution rates expressed as a percentage of employer payroll and measured by valuations prepared in accordance with applicable State laws and the principles of practice prescribed by the Actuarial Standards Board.
- To maintain a stable funded ratio (ratio of actuarial value of assets to actuarial accrued liabilities) that reflects a trend of strong actuarial condition. The long-term objective is to maintain a 100% funded ratio; in the event that the funded ratio falls below 100%, the objective will be to obtain a 100% funded ratio over a reasonable period of future years.
- To maintain adequate asset levels to finance the benefits promised to members and monitor the future demand for liquidity.
- To promote intergenerational equity for taxpayers with respect to contributions required for the benefits provided by the System.

II. Measures of Funding Progress

To track progress in achieving the System's funding objectives, the following measures will be determined annually as of the actuarial valuation date (with due recognition that a single year's results may not be indicative of long-term trends):

- **Funded ratio** – The funded ratio, defined as the actuarial value of assets divided by the actuarial accrued liability, should remain reasonably stable over time, before adjustments for changes in benefits, actuarial methods, and/or actuarial adjustments. The target funded ratio will be 100 percent. In the event that the funded ratio falls below 100%, the targeted funded ratio will be 100% within 20 years of the date the funded ratio first falls below 100%.
- **Unfunded Actuarial Accrued Liability (UAAL)**
    - **Transitional UAAL** – The UAAL established as of the initial valuation date for which this funding policy is adopted shall be known as the Transitional UAAL.
    - **New Incremental UAAL** – Each subsequent valuation will produce a New Incremental UAAL consisting of all benefit changes, assumption and method changes and experience gains and/or losses that have occurred since the previous valuations.

- **UAAL Amortization Period**
  - The transitional UAAL will be amortized over a closed 20-year period beginning on the initial valuation date for which this funding policy is adopted.
  - Each New Incremental UAAL shall be amortized over a closed 20-year period beginning with the year it is incurred.
  - 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 Contribution Rates**
  - **Employer Normal Contribution Rate** – the contribution rate determined as of the valuation date each year to fund the employer portion of the annual normal cost based on the assumptions and methods approved by the Board.
  - In each valuation subsequent to the adoption of this funding policy the required employer contribution rate will be determined as the summation of the employer Normal Contribution Rate, a contribution rate for administrative expenses, the amortization rate for the Transitional UAAL and the individual amortization rate for each of the New Incremental UAAL bases.
  - Effective with the June 30, 2020 valuation date, the required employer contribution rate shall not be less than the Employer Normal Contribution Rate unless the funded ratio is greater than or equal to 105%, as determined by the actuarial valuation in which the employer contribution rate is set.
  - Effective with the June 30, 2020 valuation date, in no event shall the employer contribution rate decrease by more than 2% from one fiscal year to the next fiscal year.
  - In no event shall the employer contribution rate be less than 0%.
  - The valuation methodology, including the amortization of the Unfunded Actuarial Accrued Liability (UAAL), would be expected to maintain reasonably stable contribution rates.

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

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

IV. Funding Policy Progress

The Board will periodically have actuarial projections of the valuation results performed to assess the current and expected future progress towards the overall funding goals of the System. These periodic projections will provide the expected valuation results over at least a 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

Valuation Date	Amortization Period	Balance of Transitional UAAL	Expected UAAL Contribution
6/30/2013	20	$ (16,097,023)	$ (1,187,279)
6/30/2014	19	(16,117,020)	(1,231,802)
6/30/2015	18	(16,093,994)	(1,325,066)
6/30/2016	17	(15,975,978)	(1,368,130)
6/30/2017	16	(15,806,046)	(1,402,562)
6/30/2018	15	(15,573,131)	(1,438,362)
6/30/2019	14	(15,271,608)	(1,485,109)
6/30/2020	**13**	**(14,901,326)**	**(1,553,756)**
6/30/2021	12	(14,435,367)	(1,600,369)
6/30/2022	11	(13,888,780)	(1,648,380)
6/30/2023	10	(13,254,280)	(1,697,832)
6/30/2024	9	(12,524,011)	(1,748,766)
6/30/2025	8	(11,689,498)	(1,801,229)
6/30/2026	7	(10,741,602)	(1,855,266)
6/30/2027	6	(9,670,472)	(1,910,924)
6/30/2028	5	(8,465,492)	(1,968,252)
6/30/2029	4	(7,115,221)	(2,027,300)
6/30/2030	3	(5,607,333)	(2,088,119)
6/30/2031	2	(3,928,549)	(2,150,762)
6/30/2032	1	(2,064,571)	(2,215,285)
6/30/2033	0	0	0

Schedule G – Amortization of UAAL

AMORTIZATION OF 2014 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2014	Expected UAAL Contribution
6/30/2014	20	$ (14,015,447)	$ (1,033,747)
6/30/2015	19	(14,032,859)	(1,114,085)
6/30/2016	18	(13,971,238)	(1,150,293)
6/30/2017	17	(13,868,788)	(1,178,813)
6/30/2018	16	(13,716,265)	(1,208,450)
6/30/2019	15	(13,509,103)	(1,247,725)
6/30/2020	**14**	**(13,247,543)**	**(1,306,702)**
6/30/2021	13	(12,907,911)	(1,345,904)
6/30/2022	12	(12,504,285)	(1,386,281)
6/30/2023	11	(12,030,817)	(1,427,869)
6/30/2024	10	(11,481,197)	(1,470,705)
6/30/2025	9	(10,848,620)	(1,514,826)
6/30/2026	8	(10,125,742)	(1,560,271)
6/30/2027	7	(9,304,651)	(1,607,079)
6/30/2028	6	(8,376,811)	(1,655,292)
6/30/2029	5	(7,333,026)	(1,704,950)
6/30/2030	4	(6,163,387)	(1,756,099)
6/30/2031	3	(4,857,215)	(1,808,782)
6/30/2032	2	(3,403,010)	(1,863,045)
6/30/2033	1	(1,788,385)	(1,918,937)
6/30/2034	0	0	0

Schedule G – Amortization of UAAL

AMORTIZATION OF 2015 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2015	Expected UAAL Contribution
6/30/2015	20	$ (15,973,823)	$ (1,226,104)
6/30/2016	19	(15,945,755)	(1,265,952)
6/30/2017	18	(15,875,735)	(1,296,874)
6/30/2018	17	(15,753,665)	(1,328,991)
6/30/2019	16	(15,574,691)	(1,372,184)
6/30/2020	**15**	**(15,339,460)**	**(1,438,457)**
6/30/2021	14	(15,020,784)	(1,481,610)
6/30/2022	13	(14,635,691)	(1,526,059)
6/30/2023	12	(14,178,038)	(1,571,840)
6/30/2024	11	(13,641,194)	(1,618,996)
6/30/2025	10	(13,018,006)	(1,667,565)
6/30/2026	9	(12,300,754)	(1,717,592)
6/30/2027	8	(11,481,117)	(1,769,120)
6/30/2028	7	(10,550,119)	(1,822,194)
6/30/2029	6	(9,498,083)	(1,876,860)
6/30/2030	5	(8,314,584)	(1,933,165)
6/30/2031	4	(6,988,383)	(1,991,160)
6/30/2032	3	(5,507,375)	(2,050,895)
6/30/2033	2	(3,858,518)	(2,112,422)
6/30/2034	1	(2,027,768)	(2,175,795)
6/30/2035	0	0	0

Schedule G – Amortization of UAAL

AMORTIZATION OF 2016 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2016	Expected UAAL Contribution
6/30/2016	20	$ 4,220,621	$ 323,963
6/30/2017	19	4,213,205	331,758
6/30/2018	18	4,193,224	339,852
6/30/2019	17	4,159,478	350,897
6/30/2020	**16**	**4,112,223**	**368,200**
6/30/2021	15	4,044,215	379,246
6/30/2022	14	3,960,197	390,623
6/30/2023	13	3,858,668	402,342
6/30/2024	12	3,738,009	414,412
6/30/2025	11	3,596,471	426,845
6/30/2026	10	3,432,169	439,650
6/30/2027	9	3,243,067	452,840
6/30/2028	8	3,026,972	466,425
6/30/2029	7	2,781,516	480,417
6/30/2030	6	2,504,149	494,830
6/30/2031	5	2,192,122	509,675
6/30/2032	4	1,842,472	524,965
6/30/2033	3	1,452,007	540,714
6/30/2034	2	1,017,290	556,935
6/30/2035	1	534,617	573,644
6/30/2036	0	0	0

Schedule G – Amortization of UAAL

AMORTIZATION OF 2017 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2017	Expected UAAL Contribution
6/30/2017	20	$ 9,116,797	$ 693,820
6/30/2018	19	9,097,618	710,493
6/30/2019	18	9,051,253	733,584
6/30/2020	**17**	**8,978,410**	**770,491**
6/30/2021	16	8,863,343	793,605
6/30/2022	15	8,716,762	817,414
6/30/2023	14	8,535,672	841,936
6/30/2024	13	8,316,840	867,194
6/30/2025	12	8,056,775	893,210
6/30/2026	11	7,751,710	920,006
6/30/2027	10	7,397,578	947,606
6/30/2028	9	6,989,995	976,035
6/30/2029	8	6,524,230	1,005,316
6/30/2030	7	5,995,183	1,035,475
6/30/2031	6	5,397,356	1,066,539
6/30/2032	5	4,724,824	1,098,536
6/30/2033	4	3,971,200	1,131,492
6/30/2034	3	3,129,606	1,165,436
6/30/2035	2	2,192,631	1,200,399
6/30/2036	1	1,152,294	1,236,411
6/30/2037	0	0	0

Schedule G – Amortization of UAAL

AMORTIZATION OF 2018 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2018	Expected UAAL Contribution
6/30/2018	20	$ (5,310,945)	$ (400,726)
6/30/2019	19	(5,297,919)	(413,749)
6/30/2020	**18**	**(5,270,918)**	**(434,972)**
6/30/2021	17	(5,220,723)	(448,021)
6/30/2022	16	(5,153,814)	(461,462)
6/30/2023	15	(5,068,581)	(475,306)
6/30/2024	14	(4,963,281)	(489,565)
6/30/2025	13	(4,836,036)	(504,252)
6/30/2026	12	(4,684,815)	(519,379)
6/30/2027	11	(4,507,427)	(534,961)
6/30/2028	10	(4,301,508)	(551,010)
6/30/2029	9	(4,064,509)	(567,540)
6/30/2030	8	(3,793,678)	(584,566)
6/30/2031	7	(3,486,050)	(602,103)
6/30/2032	6	(3,138,429)	(620,166)
6/30/2033	5	(2,747,368)	(638,771)
6/30/2034	4	(2,309,154)	(657,934)
6/30/2035	3	(1,819,788)	(677,672)
6/30/2036	2	(1,274,961)	(698,002)
6/30/2037	1	(670,030)	(718,943)
6/30/2038	0	0	0

Schedule G – Amortization of UAAL

AMORTIZATION OF 2019 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2019	Expected UAAL Contribution
6/30/2019	20	3,103,655	234,180
6/30/2020	**19**	**3,096,042**	**246,418**
6/30/2021	18	3,075,635	253,811
6/30/2022	17	3,046,346	261,425
6/30/2023	16	3,007,304	269,268
6/30/2024	15	2,957,569	277,346
6/30/2025	14	2,896,126	285,666
6/30/2026	13	2,821,877	294,236
6/30/2027	12	2,733,638	303,063
6/30/2028	11	2,630,130	312,155
6/30/2029	10	2,509,974	321,520
6/30/2030	9	2,371,683	331,165
6/30/2031	8	2,213,650	341,100
6/30/2032	7	2,034,146	351,333
6/30/2033	6	1,831,306	361,873
6/30/2034	5	1,603,118	372,730
6/30/2035	4	1,347,416	383,911
6/30/2036	3	1,061,865	395,429
6/30/2037	2	743,953	407,292
6/30/2038	1	390,970	419,510
6/30/2039	0	0	0

Schedule G – Amortization of UAAL

AMORTIZATION OF 2020 INCREMENTAL UAAL

Valuation Date	Amortization Period	Balance of New Incremental UAAL 6/30/2020	Expected UAAL Contribution
6/30/2020	**20**	**3,170,015**	**243,985**
6/30/2021	19	3,157,441	251,305
6/30/2022	18	3,136,629	258,844
6/30/2023	17	3,106,759	266,609
6/30/2024	16	3,066,943	274,608
6/30/2025	15	3,016,222	282,846
6/30/2026	14	2,953,560	291,331
6/30/2027	13	2,877,839	300,071
6/30/2028	12	2,787,849	309,073
6/30/2029	11	2,682,289	318,346
6/30/2030	10	2,559,751	327,896
6/30/2031	9	2,418,716	337,733
6/30/2032	8	2,257,550	347,865
6/30/2033	7	2,074,486	358,301
6/30/2034	6	1,867,623	369,050
6/30/2035	5	1,634,909	380,121
6/30/2036	4	1,374,137	391,525
6/30/2037	3	1,082,924	403,271
6/30/2038	2	758,706	415,369
6/30/2039	1	398,723	427,830
6/30/2040	0	0	0

Schedule H – Summary of Main System Provisions

AS INTERPRETED FOR VALUATION PURPOSES

The Georgia Judicial Retirement System (JRS) is a cost-sharing multiple employer defined benefit pension plan established by the Georgia General Assembly for the purpose of providing retirement allowances and other benefits for trial judges and solicitors of certain courts in Georgia, and their survivors and other beneficiaries, superior court judges of the state of Georgia, and district attorneys of the state of Georgia.

Normal Retirement Benefit	
Eligibility	Age 60 and 16 years of creditable service.
Benefit	Annual benefit is 66-2/3% of the annual salary plus 1% for each year of credited service over 16 years, not to exceed 24 years.
Early Retirement Benefit	
Eligibility	Age 60 and 10 years of creditable service.
Benefit	A pro-rata portion of the normal retirement benefit, based on service not to exceed 16 years.
Disability Retirement Benefit	
Eligibility	4 years of creditable service.
Benefit	For members with less than 10 years of creditable service: 1/2 of projected normal retirement benefit. For members with 10 or more years of creditable service: 2/3 of projected normal retirement benefit.
Involuntary Retirement Benefit	N/A
Deferred Vested Retirement Benefit	
Eligibility	10 years of creditable service.
Benefit	Accrued benefit deferred to age 60.
Death Benefit	
Eligibility	
Members prior to July 1, 2012	10 years of creditable service during which the member has contributed for spouse coverage.
Members on and after July 1, 2012	10 years of creditable service.

Schedule H – Summary of Main System Provisions

Benefit

Members prior to July 1, 2012	50% of benefit which member was receiving if retired, or would have received had he retired on the date of his death. If under age 60, and the member was a member of a Predecessor Retirement System, an immediate benefit equal to 50% of the benefit which member would have received had he remained employed and retired at age 60. If under age 60 and not a member of a Predecessor Retirement System, an immediate benefit equal to 50% of the benefit which the member would have received if the member were age 60 on the date of death.
Members on and after July 1, 2012	Spouse receives a benefit as if member retired on his or her date of death and elected option three. If less than 10 years of service or member rejects spouse coverage or dies before contributing for spouse's coverage for at least 10 years, death benefit is return of member's contributions with interest.

Termination Benefit

Eligibility	Termination with less than 10 years of creditable service.
Benefit	Return of the member's accumulated contributions with interest.

Payment Options

Members prior to July 1, 2012	Monthly Life Annuity with Death Benefit payable as described above with guaranteed payment of accumulated contributions.
Members on and after July 1, 2012	Monthly Life Annuity with guaranteed payment of accumulated contributions. Option 1 – 100% Joint & Survivor Option 2 – 66-2/3% Joint & Survivor Option 3 – 50% Joint & Survivor Pop-Up Option – Election of Options 1, 2, or 3 with added provision that if survivor predeceases the member the benefit reverts to the amount the member would have received had no option been chosen.

Schedule H – Summary of Main System Provisions

Post-Retirement Adjustments	The Board may from time to time grant a Cost of Living Adjustment. For members with retirement dates prior to July 1, 2013, a one-time 1.75% increase on the first $37,500 was made at the time of retirement.
Contributions	
By Members	Members prior to July 1, 2012 contribute 7-1/2% of salary, plus 2-1/2% of salary for up to 16 years if spouse benefit is not rejected. Members on and after July 1, 2012 contribute 7-1/2% of salary.
By Employers	Employer contributions are actuarially determined and approved and certified by the Board.

Schedule I – Tables of Membership Data

The Number and Average Annual Compensation of Active Members by Age and Service as of June 30, 2020

Age	*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 & Up	Total
Under 25										0
Avg. Pay										0
25 to 29										0
Avg. Pay										0
30 to 34	1	2								3
Avg. Pay										105,311
35 to 39	5	10	5	1						21
Avg. Pay										91,450
40 to 44	2	23	8	3	1					37
Avg. Pay										108,274
45 to 49	1	27	31	13	7	1				80
Avg. Pay										118,130
50 to 54	2	21	20	17	14	6	1			81
Avg. Pay										123,864
55 to 59	7	12	17	20	18	7	1			82
Avg. Pay										122,711
60 to 64		10	10	12	24	15	3	7		81
Avg. Pay										122,669
65 to 69	1	6	17	10	18	15	11	3	9	90
Avg. Pay										117,560
70 & Up		3	9	6	12	6	3	4	4	47
Avg. Pay										111,474
Total	19	114	117	82	94	50	19	14	13	522
Avg. Pay	107,312	116,438	113,777	117,112	121,663	127,270	117,846	116,799	126,305	117,900

Average Age: 56.6
Average Service: 12.5

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	33	2,625,600	79,564
65 - 69	71	6,097,491	85,880
70 - 74	98	7,864,240	80,247
75 - 79	63	5,281,635	83,835
80 - 84	31	2,340,661	75,505
85 - 89	19	1,514,727	79,722
90 - 94	4	353,735	88,434
95 & Over	0	0	0
Total	319	$ 26,078,089	$ 81,750

NUMBER OF BENEFICIARIES
AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 50	3	$ 40,685	$ 13,562
50 - 54	2	55,154	27,577
55 - 59	7	146,013	20,859
60 - 64	7	95,954	13,708
65 - 69	12	406,323	33,860
70 - 74	14	415,193	29,657
75 - 79	9	393,169	43,686
80 - 84	11	381,936	34,721
85 - 89	13	479,851	36,912
90 & Over	14	505,612	69,060
Total	92	$ 2,919,890	$ 31,738

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	0	$ 0	$ 0
50 - 54	0	0	0
55 - 59	0	0	0
60 - 64	1	58,631	58,631
65 - 69	0	0	0
70 - 74	0	0	0
75 - 79	1	57,904	57,904
80 - 84	0	0	0
85 - 89	0	0	0
90 - 94	0	0	0
95 & Over	0	0	0
Total	2	$ 116,535	$ 58,268

NUMBER OF DEFERRED VESTED MEMBERS
AND THEIR BENEFITS BY AGE

Age	Number of Members	Total Annual Benefits	Average Annual Benefits
Under 45	0	$ 0	$ 0
45-49	6	318,421	53,070
50-54	6	267,885	44,648
55-59	12	566,137	47,178
60-64	1	2,568	2,568
65 & Over	1	9,273	9,273
Total	26	$ 1,164,284	$ 44,780

Schedule J – Comprehensive Annual Financial Report Schedules

GA JRS: Solvency Test

Actuarial Valuation as of 6/30	Actuarial Accrued Liability for: Active Member Contributions (1)	Retirants & Beneficiaries (2)	Active Members (Employer Funded Portion) (3)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets (1)	(2)	(3)
2020	$89,842	$267,433	$100,913	$487,591	100%	100.0%	100.0%
2019	85,722	256,060	98,882	474,003	100%	100.0%	100.0%
2018	88,890	231,811	104,023	461,787	100%	100.0%	100.0%
2017	84,841	220,738	102,028	439,828	100%	100.0%	100.0%
2016	91,991	180,107	104,642	418,412	100%	100.0%	100.0%
2015	84,170	174,147	91,981	396,399	100%	100.0%	100.0%
2014	80,007	162,527	100,894	373,560	100%	100.0%	100.0%
2013	73,949	162,364	99,479	351,889	100%	100.0%	100.0%
2012	73,998	141,880	92,984	335,225	100%	100.0%	100.0%
2011	71,047	128,991	90,440	327,483	100%	100.0%	100.0%

All dollar amounts are in thousands.

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

	Added to Rolls		Removed from Rolls		Roll End of Year			
Year Ended	Number	Annual Allowances (in thousands)	Number	Annual Allowances (in thousands)	Number	Annual Allowances (in thousands)	% Increase in Annual Allowances	Average Annual Allowances
June 30, 2020	34	$2,060	19	$1,058	413	$29,115	3.6%	$70,496
June 30, 2019	52	3,435	12	562	398	28,113	11.4%	70,636
June 30, 2018	23	1,950	12	558	358	25,240	5.8%	70,503
June 30, 2017	62	5,304	10	771	347	23,848	23.5%	68,726
June 30, 2016	13	919	5	269	295	19,315	3.5%	65,475
June 30, 2015	21	1,416	11	561	287	18,665	4.8%	65,035
June 30, 2014	23	1,175	9	326	277	17,810	5.0%	64,296
June 30, 2013	42	2,763	13	629	263	16,961	14.4%	64,490
June 30, 2012	22	1,732	8	405	234	14,827	9.8%	63,363
June 30, 2011	15	1,168	2	105	220	13,500	8.5%	61,364