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FULTON COUNTY SCHOOLS EMPLOYEES' PENSION FUND

Fulton
County Schools
Where Students Come First

ACTUARIAL VALUATION REPORT

AS OF

JUNE 30, 2020

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Cavanaugh Macdonald
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January 25, 2021

Retirement Board
Fulton County Schools Employees' Pension Fund
6201 Powers Ferry Road NW
Atlanta, GA 30339

Ladies and Gentlemen:

This report represents the results of the actuarial valuation of the Fulton County Schools Employees' Pension Fund as of June 30, 2020. The purpose of this report is to provide a summary of the funded status of the Plan as of June 30, 2020 and to determine the minimum required contribution amount for the 2021/2022 fiscal year. Our calculations were prepared based on member data and financial information provided by the System. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. The asset values used to determine unfunded liabilities are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts using the market value of assets would be different. The interest rate used for determining liabilities is based on the expected return on assets. Therefore, liability amounts in this report cannot be used to assess a settlement of the obligation.

The System receives contributions from the Fulton County Board of Education and Members. The annual contribution rate required by the Fulton County Board of Education is 47.25% of compensation for the fiscal year ending 2022.

In determining the Employer's contribution requirement, we have included interest to reflect our understanding that the Employer makes monthly contributions throughout the fiscal year. In the table below we present the Employer's contribution requirements whether the Employer elects to pay the full amount on July 1, 2021 or in monthly installments throughout the 2021/2022 fiscal year.

Employer contribution payable July 1, 2021	$24,763,088
Interest for monthly payments during 2021/2022 fiscal year	$852,049
Employer contribution payable in monthly installments	$25,615,137

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Since the previous valuation, there have been no changes in the actuarial assumptions or methods. In our opinion, the valuation is complete and accurate, and the methodology and assumptions are reasonable as a basis for the valuation. The rationale for the assumptions is an experience study completed on May 16, 2018.

The System's unfunded liability was projected to be $55,147,698 as of June 30, 2020, taking into account total contributions from the Employer and Members of $25,791,039. The actual unfunded liability is $62,510,438 as of June 30, 2020. A summary of the System's experience is presented in Section IIIa.

The valuation is based on a series of actuarial assumptions, including an interest (actuarial asset return) rate of 7.00% per year. Actuarial gains and losses result when actual experience of the System (such as asset return, pay increases, turnover, deaths, etc.) is different from that expected by the actuarial assumptions.

A separate report will be required to disclose the financial reporting requirements under GASB statements 67 and 68. The valuation method used is the entry age normal cost method. The normal contribution rate to cover current cost has been determined as a level percent of payroll. New gains and losses are reflected in the unfunded accrued liability which is being amortized on a level dollar basis within a 15-year period.

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

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

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.

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.

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. We will continue to monitor the situation and advise the Board in the future of any adjustments that we believe would be appropriate.

Respectfully submitted,

Todd B. G

Todd B. Green, ASA, FCA, MAAA
President

A. Summary of Principal Results

	As of June 30, 2019	As of June 30, 2020
1. Number of Members		
a. Active Members (including New Participants)	**1,905**	**1,941**
b. Deferred Vested Members	**142**	**136**
c. Retired Members:		
i. Service	2,566	2,585
ii. Disability	180	171
iii. Beneficiary	270	266
iv. Sub-total	**3,016**	**3,022**
d. Total Members	**5,063**	**5,099**
e. Terminated Members Due Contributions	**497**	**721**
2. Total Annual Compensation	**$54,979,009**	**$54,211,263**
3. Total Retired Member Benefits	**$37,990,539**	**$34,222,259**
4. Derivation of Actuarially Determined Contribution		
a. Present Value of Future Benefits	$526,516,843	$532,534,863
b. Present Value of Future Normal Cost	(22,926,059)	(24,860,593)
c. Actuarial Accrued Liability (AAL)	503,590,784	507,674,270
d. Actuarial Value of Assets (AVA)	($432,008,280)	($445,163,832)
e. Unfunded Accrued Liability (c. + d.)	**$71,582,504**	**$62,510,438**
f. Funded Ratio	**85.8%**	**87.7%**
g. Normal Cost	$4,047,620	$4,418,331
h. Payment to Amortize Unfunded Liability	$19,929,908	$20,673,040
i. Administrative Expenses	$857,187	$697,535
j. Interest	$1,738,430	$2,472,064
k. Total (g. + h. + i. + j.)	**$26,573,145**	**$28,260,969**
5. Expected Employer Contributions Fiscal Year	**2020/2021**	**2021/2022**
a. Total Required Contribution (4.k above)	$26,573,145	$28,260,969
b. Expected Member Contributions	(2,598,198)	(2,645,833)
c. Expected County Contribution (a. + b.)	**$23,974,947**	**$25,615,137**
d. Expected Employer Contribution as % of Payroll	**43.61%**	**47.25%**

SECTION II: PLAN ASSETS

A. Summary of Assets Held

Asset Category	June 30, 2020
Cash and Cash Equivalents	$557,796
Investments	433,061,227
Receivable Investment Income and Deferred Revenue	1,660,378
Total Market Value of Assets	**$435,279,401**

B. Reconciliation of Market Value of Assets

	As of June 30, 2019	As of June 30, 2020
Market Value at Beginning of Plan Year	**$415,545,826**	**$429,027,179**
Adjustment	$488,031	$0
Adjusted Market Value at Beginning of Plan Year	**$416,033,857**	**$429,027,179**
Increases Due to:		
Employer Contributions	$24,236,000	$23,060,000
Employee Contributions	2,707,928	2,731,039
Investment income	21,304,499	16,035,434
Total Increases	$48,248,427	$41,826,473
Decreases Due to:		
Benefit Payments	($33,180,643)	(33,811,054)
Refund of Contributions	(1,240,217)	(1,084,331)
Administrative expenses	(834,245)	(678,866)
Total Decreases	($35,255,105)	($35,574,251)
Market Value at End of Plan Year	**$429,027,179**	**$435,279,401**
Expected Market Value (7.00% Assumed Return)	**$436,066,128**	**$448,933,457**
Market Value Gain/(Loss)	**($7,038,949)**	**($13,654,056)**
Approximate Net Return on Market Value	**5.17%**	**3.78%**

C. Development of Market Value of Assets (Gain)/Loss

	Market Value As of June 30, 2020
1. Market Value of Assets	
a. Beginning of Plan Year	$429,027,179
b. Adjustment	$0
c. Adjusted Beginning of Plan Year	$429,027,179
2. Increases Due to:	
a. Contributions:	
i. Employer	$23,060,000
ii. Members	$2,731,039
iii. **Total Contributions**	$25,791,039
3. Decreases Due to:	
a. Benefit payments	$33,811,054
b. Refund of member contributions	$1,084,331
c. Administrative expenses	$678,866
d. Miscellaneous	
e. **Total Decreases**	$35,574,251
4. Expected Investment Income [((1.c) x 7.00%) + ((2a.iii - 3e) x 0.5 x 7.00%)] - 1.b	$29,689,490
5. Actual Investment Income	$16,035,434
6. (Gain) / Loss [4 - 5]	$13,654,056

D. Determination of Actuarial Value of Assets and Investment Gain/(Loss)

1. Market Value as of June 30, 2020	$435,279,401
2. Delayed Recognition of Market Gains/(Losses)	

Valuation Year	Market Gain/(Loss)	Percent Not Recognized	Amount Not Recognized
2020	($13,654,056)	80%	($10,923,245)
2019	(7,038,949)	60%	($4,223,369)
2018	3,078,321	40%	$1,231,328
2017	20,154,275	20%	4,030,855

	(9,884,431)
3. Actuarial Value as of June 30, 2020: (1) - (2)	445,163,832
4. Approximate Net Rate of Return on Actuarial Value	5.37%
5. Actuarial Value Gain/(Loss) for Plan Year Ending June 30, 2020	(6,959,403)

A. Gain and Loss Analysis

1. Actual Unfunded Accrued Liability as of June 30, 2019	$71,582,504
2. Total normal cost for this plan year (including expenses)	$4,904,807
3. Interest on 1. and 2.	$5,354,112
4. Total contribution for this plan year (including amounts expected to be paid)	($25,791,039)
5. Interest on 4.	($902,686)
6. Changes due to:	
a. Assumptions and methods	$0
b. Plan amendments	$0
c. Actuarial (gain)/loss	$7,362,740
7. Total Current Unfunded Actuarial Accrued Liability as of June 30, 2020 (1. + 2. + 3. + 4. + 5. + 6.)	$62,510,438

8. Items Affecting Calculation of Accrued Liability

a. Actuarial assumptions and methods used to determine actuarial accrued liability and normal cost (See Appendix A)
b. Plan provisions reflected in the unfunded accrued liability (See Appendix B)
c. Plan amendments reflected in item 6.b. above
d. Changes in actuarial assumptions and methods reflected in items 6.a. and 6.c. above

A. Gain and Loss Analysis (Continued)

9.	**Expected Unfunded Accrued Liability as of June 30, 2020 Valuation:**		$55,147,698
10.	**Changes in UAL Due to Actuarial (Gains)/Losses During the 2019/2020 Plan Year:**		
a.	Due to Salary	$34,992	
b.	Due to Turnover	(6,230,498)	
c.	Due to New Retirements	10,650,350	
d.	Due to Data Adjustments	(282,745)	
e.	Due to Mortality	(3,343,974)	
f.	Due to New Members	98,291	
g.	Due to Investment Performance	6,959,403	
h.	Other	(523,079)	
i.	Total		$7,362,740
11.	**Other Changes in UAL Payment During the 2019/2020 Plan Year:**		
a.	Assumption and method changes	$0	
b.	Plan changes	$0	
c.	Total change		$0
12.	**Unfunded Accrued Liability as of June 30, 2020 Valuation:**		$62,510,438

13. Comments on Change in Unfunded Accrued Liability:

Salary/Service: Average salary increases higher than expected.

Investment Performance: 5.37% actual vs. 7.00% expected return on the actuarial value of assets.

Turnover: Net effect on the valuation liabilities of actual deaths, terminations of employment and disabilities different from what was anticipated in the aggregate by the assumptions related to those events.

New retirements: Net effect of differences in expected vs. actual numbers of, and benefits for, new retirements and refund of employee contributions.

Data/Service Adjustments: Effect of service adjustments, status adjustments, and other data adjustments.

Other: Miscellaneous gains and losses resulting from changes in valuation software, timing of financial transactions, etc.

Assumption and Method Changes: None

Plan Changes: None

B. Amortization of the Unfunded Actuarial Liability

Source and Date Established	Outstanding Balance as of June 30, 2019	2019/2020 Amortization Payment	Outstanding Balance as of June 30, 2020	2020/2021 Amortization Payment	Years Remaining June 30, 2020
1994 Initial Unfunded Actuarial Liability	$80,018,880	$18,239,122	$66,104,341	$18,239,122	4 years
2006 Experience (Gain)/Loss	263,220	136,061	136,061	136,061	1 years
2007 Assumption Changes	4,171,930	387,610	4,049,223	387,610	17 years
2007 Experience (Gain)/Loss	7,900,880	2,813,685	5,443,298	2,813,685	2 years
2008 Experience (Gain)/Loss	1,119,220	308,809	867,140	308,809	3 years
2009 Experience (Gain)/Loss	6,192,090	1,411,395	5,115,343	1,411,395	4 years
2010 Experience (Gain)/Loss	1,549,360	303,784	1,332,766	303,784	5 years
2012 Experience (Gain)/Loss	2,266,260	354,697	2,045,373	354,697	7 years
2012 Assumption Changes	(7,837,750)	(649,830)	(7,691,075)	(649,830)	22 years
2013 Experience (Gain)/Loss	3,231,400	463,529	2,961,622	463,529	8 years
2014 Experience (Gain)/Loss	(16,007,200)	(2,129,967)	(14,848,639)	(2,129,967)	9 years
2015 Experience (Gain)/Loss	(15,441,170)	(1,924,473)	(14,462,865)	(1,924,473)	10 years
2016 Experience (Gain)/Loss	(7,714,700)	(907,753)	(7,283,433)	(907,753)	11 years
2017 Experience (Gain)/Loss	10,288,050	1,150,443	9,777,240	1,150,443	12 years
2018 Experience (Gain)/Loss	(3,063,410)	(327,370)	(2,927,563)	(327,370)	13 years
2018 Assumption Changes	6,662,890	507,181	6,586,609	507,181	28 years
2019 Experience (Gain)/Loss	(2,017,446)	(207,014)	(1,937,162)	(207,014)	14 years
2020 Experience (Gain)/Loss*			$7,242,159	$743,131	15 years
Total	**$71,582,504**	**$19,929,908**	**$62,510,438**	**$20,673,040**	

*The total experience (gain)/loss for 2019/2020 plan year of $7,362,740 is adjusted for contribution timing differences adjusted for interest equal to $120,581.

A. Historical Schedule of Funding Progress

Actuarial Valuation Date	Fiscal Year Ending June 30	(1) Actuarial Value of Assets	(2) Actuarial Accrued Liability (AAL)	(3) Unfunded AAL (UAAL) (2) - (1)	(4) Funded Ratio (1) / (2)	(5) Annual Covered Payroll	(6) UAAL as a Percentage of Covered Payroll (3) / (5)
6/30/2011	2013	$244,088,000	$457,036,000	$212,948,000	53.4%	$79,060,000	269.4%
6/30/2012	2014	$256,434,000	$452,623,000	$196,189,000	56.7%	$73,332,000	267.5%
6/30/2013	2015	$278,691,000	$466,958,000	$188,267,000	59.7%	$67,286,000	279.8%
6/30/2014	2016	$317,673,000	$471,694,000	$154,021,000	67.3%	$65,644,000	234.6%
6/30/2015	2017	$355,032,000	$477,926,000	$122,894,000	74.3%	$63,420,000	193.8%
6/30/2016	2018	$375,859,000	$477,413,000	$101,554,000	78.7%	$58,694,000	173.0%
6/30/2017	2019	$400,142,000	$499,892,000	$99,750,000	80.0%	$57,069,000	174.8%
6/30/2018	2020	$419,846,000	$508,769,000	$88,923,000	82.5%	$53,171,000	167.2%
6/30/2019	2021	$432,008,280	$503,590,784	$71,582,504	85.8%	$54,979,009	130.2%
6/30/2020	2022	$445,163,832	$507,674,270	$62,510,438	87.7%	$54,211,263	115.3%

B. Notes to Required Supplementary Information

Valuation Date	June 30, 2019	June 30, 2020
Actuarial Cost Method	Entry Age Normal	Entry Age Normal
Amortization Method	Level Dollar Amount, Layered	Level Dollar Amount, Layered
Amortization Period	30 years from 7/1/1994 for initial base; 30 years for assumption changes; 15 years for gains and losses	30 years from 7/1/1994 for initial base; 30 years for assumption changes; 15 years for gains and losses
Asset Valuation Method	5 - Year Smoothed Market	5 - Year Smoothed Market
Key Actuarial Assumptions		
Investment Rate of Return	7.00%	7.00%
Projected Salary Increases	5.75% for years 0-9, 2.75% afterward	5.75% for years 0-9, 2.75% afterward
Includes Inflation at	2.75%	2.75%
Cost-of-Living Adjustment	3.00%	3.00%

A. Summary of Membership

Active Members	Number	Total Annual Salary	Average Salary	Average Age
Teachers				
No Dependent Coverage	124	$5,954,636	$48,021	52.5
With Dependent Coverage	73	4,129,529	56,569	55.2
Total	**197**	**10,084,165**	**51,189**	**53.5**
Non-Teacher Members				
No Dependent Coverage	1,186	$29,133,270	$24,564	50.0
With Dependent Coverage	558	14,993,828	26,871	49.3
Total	**1,744**	**44,127,098**	**25,302**	**49.8**
Total				
No Dependent Coverage	1,310	$35,087,906	$26,785	50.3
With Dependent Coverage	631	19,123,357	30,306	50.0
Total	**1,941**	**54,211,263**	**27,930**	**50.2**

A. Summary of Membership (Continued)

Inactive Members

Retired Participants Receiving Benefits	
Number*	2,430
Annual Benefits	$24,843,542
Disabled Participants Receiving Benefits	
Number	171
Annual Benefits	$2,595,604
Beneficiaries Receiving Benefits	
Number	266
Annual Benefits	$6,783,113
Total Currently Receiving Benefits	
Number	2,867
Annual Benefits	$34,222,259
Average Annual Benefits	$11,937
Former Teacher Participants with Spouses Eligible to Receive Future Death Benefits	
Number	863
Annual Benefits	$33,290,850
Terminated Non-Vested Participants Due Employee Contributions	
Number	721
Employee Contributions Due	$3,312,728
Terminated Participants with Deferred Vested Benefits	
Number	136
Annual Benefits	$1,441,597
Terminated Teacher Participants with Spouses Eligible to Receive Future Death Benefits	
Number	16
Annual Benefits	$266,160

*Does not include 155 former teacher participants not currently in receipt with spouses eligible to receive future death benefits.

B. Reconciliation of Membership to Prior Valuation

	Active	Terminated Vested	Retired	Disabled	Beneficiary	Total
Number of members as of June 30, 2019	**1,905**	**639**	**2,566**	**180**	**270**	**5,560**
Change in Status during the plan year:						
a. Actives who became inactive	(285)	285				0
b. Actives who retired	(42)		42			0
c. Inactives who became active	20	(16)				4
d. Inactives who retired		(23)	23			0
e. Retirees who became active						0
f. Retirees who became inactive		1	(1)			0
No longer members due to:						
a. Death	(2)		(78)	(13)	(17)	(110)
b. Refund of contributions	(52)	(45)				(97)
c. Forfeiture of benefits						0
d. Expiration of certain period						0
e. Included in error last year	(4)					(4)
New members due to:						
a. Initial membership	395					395
b. Death of another member					13	13
c. Omitted in error last year	6	16	31	4		57
d. Correction			2			2
Number of members as of June 30, 2020	**1,941**	**857**	**2,585**	**171**	**266**	**5,820**

C. Distribution of Active Non-Teachers as of June 30, 2020: Age, Service and Average Annual Earnings

	Completed Years of Service										
Age	**Under 1**	**1 to 4**	**5 to 9**	**10 to 14**	**15 to 19**	**20 to 24**	**25 to 29**	**30 to 34**	**35 to 39**	**40 & Up**	**Total**
Under 25	25	16									**41**
Avg. Pay	18,980	19,532									19,195
25 to 29	38	48	10								**96**
Avg. Pay	19,828	17,850	29,309								19,827
30 to 34	57	49	19	1							**126**
Avg. Pay	20,184	23,876	29,208	17,441							22,959
35 to 39	59	57	26	8	5						**155**
Avg. Pay	19,911	18,815	27,785	25,823	58,808						22,388
40 to 44	49	76	33	16	10	2					**186**
Avg. Pay	18,920	20,231	28,469	32,408	27,325	66,597					23,275
45 to 49	55	60	33	19	17	3	1				**188**
Avg. Pay	19,181	22,567	30,702	26,844	32,703	51,408	61,641				25,021
50 to 54	57	53	39	28	21	13	9	3			**223**
Avg. Pay	18,324	20,441	28,843	26,260	33,445	31,456	53,924	63,758			25,901
55 to 59	42	62	45	52	33	25	14	1			**274**
Avg. Pay	20,051	23,604	27,017	27,196	31,716	40,114	49,121	59,116			28,218
60 to 64	26	57	52	31	29	33	12	5			**245**
Avg. Pay	19,895	19,930	26,225	27,612	32,119	38,546	49,017	71,605			28,664
65 & Up	26	44	56	43	13	13	5	8	1	1	**210**
Avg. Pay	18,175	19,885	24,136	28,138	28,269	33,844	49,039	50,142	62,685	84,758	26,240
Total	434	522	313	198	128	89	41	17	1	1	**1,744**
Avg. Pay	19,382	20,807	27,409	27,616	32,587	38,328	50,440	59,385	62,685	84,758	25,302

D. Distribution of Active Teachers as of June 30, 2020: Age, Service and Average Annual Earnings

	Completed Years of Service										
Age	**Under 1**	**1 to 4**	**5 to 9**	**10 to 14**	**15 to 19**	**20 to 24**	**25 to 29**	**30 to 34**	**35 to 39**	**40 & Up**	**Total**
Under 25											
Avg. Pay											
25 to 29		1	4								**5**
Avg. Pay		31,479	34,822								34,154
30 to 34		2	7								**9**
Avg. Pay		32,608	41,736								39,707
35 to 39	1	3	6		2						**12**
Avg. Pay	23,462	35,611	43,779		52,215						41,450
40 to 44		2	6	3	4						**15**
Avg. Pay		27,382	41,693	34,200	51,863						40,998
45 to 49		3	3	6	2	2	1				**17**
Avg. Pay		34,711	32,525	50,372	62,152	53,151	68,069				47,213
50 to 54		4	6	2	10	5	2	3			**32**
Avg. Pay		34,049	37,348	60,912	40,705	45,528	86,871	73,364			47,207
55 to 59		4	3	4	4	4	5	14	2		**40**
Avg. Pay		33,200	39,945	49,129	40,753	48,067	46,722	73,629	79,780		55,710
60 to 64		1	3	6	3	6	4	8	10		**41**
Avg. Pay		10,437	54,328	49,181	66,802	47,788	62,610	83,532	68,234		62,358
65 & Up			5	4	2		1	6	7	1	**26**
Avg. Pay			41,251	70,491	6,152		88,675	46,126	56,373	84,758	51,743
Total	1	20	43	25	27	17	13	31	19	1	**197**
Avg. Pay	23,462	32,093	40,814	52,009	45,146	47,820	62,656	70,836	65,080	84,758	51,189

Actuarial Standards of Practice are issued by the Actuarial Standards Board and are binding on credentialed actuaries practicing in the United States. These standards generally identify what the actuary should consider, document and disclose when performing an actuarial assignment. In September 2017, Actuarial Standard of Practice Number 51, Assessment and Disclosure of Risk in Measuring Pension Obligations, (ASOP 51) was issued as final with application to measurement dates on or after November 1, 2018. This ASOP, which applies to funding valuations, actuarial projections, and actuarial cost studies of proposed plan changes, is first applicable for the June 30, 2019 actuarial valuation for the Plan.

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

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

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

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

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

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

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

A. Actuarial Assumptions

Each of the assumptions used in this valuation was set based on industry standard published tables and data, the particular characteristics of the plan, relevant information from the plan sponsor or other sources about future expectations, the results of a formal experience study conducted on the period July 2011 through July 2016, and our professional judgment regarding future experience. We believe the assumptions are reasonable for the contingencies they are measuring and are not anticipated to produce significant cumulative actuarial gains or losses over the measurement period.

Investment Return

7.00% per year net of investment-related expenses

Salary Increase

Service	Rate
0-9	5.75%
10+	2.75%

Consumer Price Index

2.75% per year

Administrative Expenses

Actual administrative expenses paid in the prior year, increased one year by the assumed Consumer Price Index.

Healthy Mortality

RP-2000 Mortality Table set forward 3 years for males and 1 year for females with generational projection per Scale AA, with separate tables for employees/healthy annuitants. This assumption includes a margin for future mortality improvement beyond the valuation date.

Disabled Mortality

RP-2000 Mortality Table set forward 3 years for males and 1 year for females with generational projection per Scale AA, with separate tables for employees/healthy annuitants. This assumption includes a margin for future mortality improvement beyond the valuation date.

Retirement

Age	Teachers	Non-Teachers
50-53	0%	20%
54	5	20
55	20	20
56	10	20
57	12	20
58	10	5
59	5	5
60	15	30
61	10	20
62	12	12
63	10	20
64	20	5
65	25	40
66	25	10
67-74	25	20
75+	100	100

In addition to the above, 10% of Teachers and 30% of Non-Teachers are assumed to retire at first eligibility for unreduced retirement.

Turnover

2003 SOA Pension Plan Turnover Study – Age and Service B rates, adjusted by 105% for Teachers and 185% for Non-Teachers:

First year select rates are as follows:

Age	Teachers	Non-Teachers
20	18.89%	33.28%
30	19.54	34.43
40	16.71	29.43
50	16.38	28.86
60	14.31	25.22

Ultimate Rates after a 10 Year Select Period:

Age	Teachers	Non-Teachers
30	5.08	8.95
40	4.36	7.68
50	3.66	6.46
60	0.21	0.37

Disability	50% of the 1996 Social Security Rate of Disability Table for males and 75% of the 1996 Social Security Rate of Disability for females.
Beneficiaries	Males are assumed to be three years older than females. Spouses are assumed not to remarry. All members with dependent coverage are assumed to be married.

B. Actuarial Methods

Funding Method

Entry Age Normal Cost Method

Amortization of Unfunded Actuarial Accrued Liability/Surplus

Level dollar amortization over a period not to exceed 30 years from July 1, 1994 for initial base, 30 years for assumption changes, and 15 years for gains and losses.

Asset Valuation Method

The actuarial value of assets is calculated by recognizing market gains and losses over a five-year period.

APPENDIX B: SUMMARY OF PLAN PROVISIONS

This exhibit summarizes the major provisions of the Fund. It is not intended to be, nor should it be interpreted as a complete statement of all plan provisions. All eligibility requirement and benefit amounts shall be determined in strict accordance with the plan document itself.

A. Effective Date

May 1, 1945

B. Covered Employees

Teachers hired before July 1, 1088 and school employees of Fulton County are eligible for membership in the Pension Fund. Effective July 1, 1088, Teacher members are also covered under the Teachers' Retirement System of Georgia (TRS). Teachers will receive a retirement benefit from TRS. Teachers may also be eligible to receive benefits from the Fulton County School Employees' Pension Fund if Fund benefits exceed the TRS benefit.

C. Creditable Service

The Fund covers all time as an employee during which or for which maximum pension contributions were made. Service with other Georgia entities is credited under special rules.

D. Final Average Monthly Earnings

The average of the three highest consecutive twelve-month periods of employment.

E. Normal Retirement

Eligibility

An employee is eligible to retire with an unreduced benefit at the earliest of:

- Age 65 and 10 years of service;
- Age 60 and 25 years of service;
- 30 years of service

Benefits

For members covered under the 1978 Pension Law, 2% of the participant's Final Average Monthly Earnings multiplied by years of Creditable Service. For members covered under the 1962 Pension Law, 1.76% of the participant's Final Average Monthly Earnings multiplied by years of Creditable Service. The monthly maximum benefit is equal to 75% of final average monthly earnings.

F. Accrued Benefit

The accrued benefit at any date is the normal retirement pension earned through that date. The minimum benefit is $17 per month for each year of creditable service, not to exceed 40 years. (Minimum benefit became effective July 1, 1995). Cost-of-Living Increases are not applied to the minimum benefit. The minimum benefit does not apply to persons receiving a pension from TRS.

G. Early Retirement

Eligibility

An employee is eligible for early retirement at the attainment of age 55 and 25 years of Creditable Service.

Benefits

The accrued benefit reduced for each year between the date payments start and age 60. The reduction is 1/12 of 2% for each month by which the participant's retirement date precedes age 60.

H. Late Retirement

The amount of benefit for a participant retiring after his normal retirement date is the accrued benefit as of the actual retirement date.

I. Disability

Eligibility

An employee who becomes totally disabled before becoming eligible for retirement benefits under the Fund but after completing 10 years of service is eligible for disability retirement benefits. Employees disabled in the line of duty are eligible regardless of their years of service.

Benefits

The accrued benefit, as of the date of disability, not reduced for age. For participants disabled in the line of duty, the benefit will be at least equal to the accrued benefit at age 55 and 25 years of service.

J. Termination Benefits

Eligibility

A participant who has completed at least 25 years of service shall be entitled to a vested retirement pension deferred to commence at age 55, provided his or her accumulated contributions are not withdrawn. Any employee who has completed 10 years of service shall be entitled to a vested retirement pension deferred to commence at age 65, provided the accumulated contributions are not withdrawn.

Benefits

The vested retirement pension is equal to the accrued benefit. If the participant has less than 30 years of service, the accrued benefit shall be reduced by 1/12 of 2% for each month by which the benefit commencement date precedes age 60.

K. Refund of Contributions

A participant who terminates before he or she is eligible to receive benefits will receive a refund equal to the sum of his or her own contributions without interest.

L. Death Benefits

Death benefits for death in the line of duty will be payable in an amount equal to 70% of the benefit for disability in the line of duty to the surviving spouse, or in absence of spouse, to any unmarried children under age 21. The death benefit continues for the life of the spouse. Benefits payable to children would cease at age 21 or at marriage if sooner. Upon the death not in the line of duty of a member who has contributed toward beneficiaries' benefit coverage and who has attained age 65 or completed 10 years of service, a beneficiaries' pension equal to 70% of the member's accrued benefit paid to his spouse for life or until his children reach age 21.

M. Cost-of-Living Increases

The benefits paid to recipients that have been retired more than one year are increased annually by 3%.

N. Employee Contributions

Each member covered under the 1978 law contributes 6.6% of gross salary if beneficiary coverage was elected and 5.6% of gross salary if beneficiary coverage was not elected. Each member covered under the 1962 law contributes 6% of gross salary if beneficiary coverage was elected and 5% of gross salary if beneficiary coverage was not elected. Members covered under laws prior to 1962 contribute amounts prescribed in those laws.

If the member is also a member of TRS, the contribution is split between the two funds with 6.00% of gross salary being contributed to TRS. The remainder of the contribution as outlined in the preceding paragraph is made to the Fulton County School Employees' Pension Fund.

O. Changes in Plan Provisions Since Prior Valuation

None.

APPENDIX C: SUMMARY OF PLAN PROVISIONS FOR TRS

This exhibit summarizes the major provisions of the Plan. It is not intended to be, nor should it be interpreted as a complete statement of all plan provisions. All eligibility requirement and benefit amounts shall be determined in strict accordance with the plan document itself.

A. Effective Date

January 1, 1941

B. Covered Employees

All Teachers, as defined by TRS, employed by the State of Georgia, the county or independent board of education, the State Board of Education, the Board of Regents of the University System of Georgia, or any other agency of and within the State by which a Teacher is paid.

C. Creditable Service

The System covers all time as a Teacher during which or for which maximum pension contributions were made.

D. Final Average Monthly Earnings

The average of the twenty-four highest consecutive months of employment.

E. Normal Retirement

Eligibility

An employee is eligible to retire with an unreduced benefit at the earliest of:

- Age 60 and 10 years of service;
- 30 years of service

Benefits

- An annuity which is the actuarial equivalent of the participant's accumulated contributions at the time of retirement; and
- A pension that, together with the annuity, will provide a total of 2% of the participant's final average monthly earnings multiplied by the number of years of creditable service limited to 40 years.
- The accrued benefit is reduced 1/12 of 7% for each month between the date payments starts and the earlier of age 60 or 30 years of service.

F. Accrued Benefit

The accrued benefit at any date is the normal retirement pension earned through that date. The minimum benefit is $17 per month for each year of creditable service, not to exceed 40 years.

G. Late Retirement

The amount of benefit for a participant retiring after his normal retirement date is the accrued benefit as of the actual retirement date.

H. Disability

Eligibility

An employee who becomes totally disabled before becoming eligible for retirement benefits under the Plan but after completing 10 years of service is eligible for disability retirement benefits.

Benefits

The accrued benefit, as of the date of disability, not reduced for age.

I. Termination Benefits

Eligibility

Any employee who has completed 10 years of service shall be entitled to a vested retirement pension deferred to commence at age 60, provided the accumulated contributions are not withdrawn.

Benefits

The vested retirement pension is equal to the accrued benefit at the time of termination.

J. Refund of Contributions

A participant who terminates before he or she is eligible to receive benefits will receive a refund equal to the sum of his or her own contributions with interest. Other participants may elect to receive their contributions, plus interest in lieu of any other benefit.

K. Death Benefits

Upon the death of a member who has completed 10 years of service, a beneficiaries' pension equal to 100% of the member's accrued benefit shall be paid throughout the life of his beneficiary.

L. Cost-of-Living Increases

Based on the Consumer Price index, limited to 1.5% per six months with no adjustments if the increase is less than 0.5%. Adjustments are made each January 1 and July 1. No reductions will be made for the first 2.5% decrease in the CPI and benefits will not be reduced below the amounts initially paid upon retirement. In addition, for members who retired prior to January 1, 2013, a one-time 3% increase on the first $37,500 for members' allowances is made at retirement.

M. Employee Contributions

Each member contributes 6.00% of earnable compensation. However, no contributions are payable after the attainment of age 65 and the completion of 40 years of creditable service. Members may elect to cease making contributions after the completion of 40 years of creditable service but before the attainment of age 65. The state contributes at a specified percentage of active member payroll determined annually by actuarial valuation.

N. Changes in Plan Provisions Since Prior Valuation

None.