



9040 Roswell Road
Suite 700
Atlanta, GA 30350-1851

December 2018

Ms. Ramona Thurman
Chief Financial Officer
Clayton County, Georgia
112 Smith Street
Jonesboro, GA 30236

Dear Ms. Thurman:

Enclosed are 24 copies of the July 1, 2018 actuarial valuation report for the Clayton County, Georgia Public Employee Retirement System. Please share a copy with each Retirement Board member.

Please let us know if there are any questions concerning the report. Kevin can be reached at 770-916-4184 and David can be reached at 602-803-6174.

Sincerely,

Buck Global, LLC (Buck)

A handwritten signature in black ink, appearing to read "DJK", written in a cursive style.

David J. Kershner, FSA, EA, MAAA, FCA
Principal

A handwritten signature in black ink, appearing to read "K Spanier", written in a cursive style.

Kevin Spanier, ASA, EA, MAAA, FCA
Senior Consultant

DJK/KS/jac

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Clayton County, Georgia Public Employee Retirement System

Actuarial Valuation Report as of July 1, 2018

December 2018



9040 Roswell Road
Suite 700
Atlanta, GA 30350-1851

December 2018

Pension Board
Clayton County, Georgia
Public Employee Retirement System
112 Smith Street
Jonesboro, GA 30236

Members of the Board:

We are pleased to submit the results of the July 1, 2018 actuarial valuation of the Clayton County, Georgia Public Employee Retirement System (the System). The purpose of this report is to provide a summary of the funded status of the System as of July 1, 2018, and to verify that scheduled contributions will be sufficient to meet the minimum funding requirement for the fiscal year ending June 30, 2019.

Use of this report for any other purpose may not be appropriate and may result in mistaken conclusions due to failure to understand applicable assumptions, methodologies, or inapplicability of the report for that purpose. Because of the risk of misinterpretation of actuarial results, you should ask Buck Global, LLC (Buck) to review any statement you wish to make on the results contained in this report. Buck will not accept any liability for any such statement made without prior review.

Summary of Valuation Results

It is the Board's funding policy to keep the System in compliance with the minimum funding requirements under Title 47, Chapter 20 of the Official Code of Georgia, which requires that contributions are sufficient to fund the annual cost of benefit accruals and amortize the unfunded liability within a 30-year period. This valuation determines that contributions of 21.77% (13.90% from the County and Water Authority, a 0.37% special budgeted contribution from the County and Water Authority, and 7.50% from Participants) are sufficient to meet the minimum contribution requirements based on the actuarial assumptions and methods used in the valuation.

As of July 1, 2018, the actuarial accrued liability was \$626,611,182. This compares to the market value of assets of \$429,646,173 (after an adjustment of \$974,562 for pending refunds) and the actuarial value of assets of \$435,729,754. The funded ratio as measured by the actuarial value of assets was 69.5%.

Where presented, references to "funded ratio" and "unfunded accrued liability" typically are measured on an actuarial value of assets basis. It should be noted that the same measurements using market value of assets would result in different funded ratios and unfunded accrued liabilities. Moreover, the funded ratio presented is appropriate for evaluating the need and level of future contributions but makes no assessment regarding the funded status of the System if the System were to settle (i.e. purchase annuities) for a portion or all of its liabilities.

Under the plan sponsor's funding policy of keeping the System in compliance with the minimum funding requirements under Title 47, Chapter 20 of the Official Code of Georgia while contributing at least the normal level percent of pay and no future expected gains or losses, future expected System contributions are expected to eventually remain level at the normal level percent of pay and the funded status is expected to increase.

Future actuarial measurements may differ significantly from current measurements due to System experience differing from that anticipated by the economic and demographic assumptions, increases or decreases expected as part of the natural operation of the methodology used for these measurements, and changes in System provisions or applicable law. An analysis of the potential range of such future differences is beyond the scope of this valuation.

Summary of Plan Experience

The experience for the plan year ending June 30, 2018 produced an overall loss of \$10,329,227. Below is a summary of the sources of (gains) and losses.

Investment performance	\$	2,523,678
Retirement experience		1,370,814
New entrants		513,295
Mortality experience		(520,345)
Salary increases		5,113,318
Other		1,328,467

Census and Financial Data

This valuation was performed using June 30, 2018 employee and financial data supplied by Clayton County. Buck did not audit this data, although it was reviewed for reasonableness and consistency with the prior year's information. The results of the valuation are dependent on the accuracy of the data.

Changes in Actuarial Assumptions, Methods and Plan Provisions

There were no changes in assumptions, methods, or plan provisions from the prior year.

Certification

The actuarial certification is included in Section VI of the report. We are available to answer any questions regarding the contents of this report. Kevin can be reached at 770-916-4184 and David can be reached at 602-803-6174.

Respectfully submitted,

Buck Global, LLC (Buck)



David J. Kershner, FSA, EA, MAAA, FCA
Principal



Kevin Spanier, ASA, EA, MAAA, FCA
Senior Consultant

DJK/KS/jac

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Section I - Summary of Principal Results

For convenience of reference, the principal results of the valuation and a comparison with the results of the preceding valuation are summarized below:

Valuation Date	7/1/2018	7/1/2017
Number of active participants	2,464	2,422
Annual compensation for year beginning on valuation date ¹	\$ 120,122,372	\$ 115,215,822
Number of retired participants and beneficiaries	1,350	1,289
Annual retirement benefits	\$ 38,050,485	\$ 35,673,664
Number of former participants with deferred benefits	289	287
Present value of accrued benefits	\$ 602,828,253	\$ 574,055,182
Actuarial accrued liability	\$ 626,611,182	\$ 595,939,772
Assets:		
Market value	\$ 429,646,173	\$ 412,200,258
Actuarial value of assets	\$ 435,729,754	\$ 418,794,365
Unfunded actuarial accrued liability	\$ 190,881,428	\$ 177,145,407
Amortization period for unfunded actuarial accrued liability	30 years	30 years
Recommended annual contribution rates:		
Participants	7.50%	7.50%
County/Water Authority (normal)	13.90%	13.90%
County/Water Authority (special budgeted)	<u>0.37%</u>	<u>0.10%</u>
Total	21.77%	21.50%
County/Water Authority annual required contribution rate (ARC):		
Normal cost	4.09%	4.13%
Unfunded actuarial accrued liability	9.81%	9.77%
Special budgeted contribution	<u>0.37%</u>	<u>0.10%</u>
Total	14.27%	14.00%

¹ includes half-year salary increase assumed for upcoming plan year

Section II - Participant Data

All full-time employees and elected officials of Clayton County and the Clayton County Water Authority are covered under the System. The valuation included 2,464 active participants as of July 1, 2018 with annual compensation on July 1, 2018 totaling \$118,347,165.

The following table shows the number of retired participants and beneficiaries of deceased participants and their annual retirement benefits as of July 1, 2018.

Group	Number	Benefits
Normal and Early Retirements	1,141	\$ 34,642,947
Beneficiaries of Deceased Participants	143	2,138,512
Disability Retirements	<u>66</u>	<u>1,269,026</u>
Total	1,350	\$ 38,050,485

In addition, there are 289 former participants entitled to deferred annual benefits totaling \$3,667,571.

Section III - Assets

- The amount of assets taken into account in this valuation is based on the unaudited financial statements provided by Clayton County.
- The market value of assets as of July 1, 2018 was \$429,646,173. The market return for the plan year ending June 30, 2018 was approximately 7.76%. The actuarial value of assets as of July 1, 2018 was \$435,729,754. Schedule B shows the development of the actuarial value of assets as of July 1, 2018.
- Schedule C shows the reconciliation of the market value of asset balances from July 1, 2017 to July 1, 2018.

Section IV - Comments on Valuation

- Schedule A outlines the results of the valuation. The System has total actuarial accrued liabilities of \$626,611,182. Of this amount, \$439,500,391 is for benefits payable to retired participants, beneficiaries and former participants entitled to deferred vested benefits, and \$187,110,791 is for active members' benefits expected to be paid based on service to the valuation date. The System has an actuarial value of assets of \$435,729,754 as of July 1, 2018. The difference of \$190,881,428 is the unfunded actuarial accrued liability as of July 1, 2018.
- The regular contributions to the System consist of normal cost contributions and unfunded accrued liability amortization contributions. The normal cost contribution covers the cost of benefits accruing and System expenses expected to be paid during the upcoming year. The normal cost contribution rate for the County and Water Authority participants combined is 11.59% of compensation (4.09% County/Water Authority and 7.50% participants) of payroll. This compares to the 11.63% rate last year.
- Another measure of the funding is the present value of the benefits accrued as of the valuation date. This value does not include any allowance for future salary increases affecting the benefits earned to date. This amount is \$602,828,253. When compared to the market value of assets of \$429,646,173, the System has insufficient assets to cover its accrued benefits.
- For the year, the System experienced an overall loss of \$10,329,227. This loss is due to the net effect of a loss on the actuarial value of assets of \$2,523,678 and a liability loss of \$7,805,549. Schedule D shows the development of this loss.

Section V - Contributions Payable under the Retirement System

The following table summarizes the contribution rates based on the July 1, 2018 valuation

Contribution	Percentage of Compensation
Payable by:	
Participants	7.50
County and Water Authority (regular)	13.90
County and Water Authority (special budgeted)	<u>0.37</u>
Total	21.77
Rate Applied To:	
Total Normal Cost	11.59
Unfunded Actuarial Accrued Liability	<u>10.18</u>
Total	21.77

Section VI – Enrolled Actuary’s Statement

The actuarial assumptions used to value the System for funding purposes were selected by the System sponsor in consultation with us. All assumptions represent our best estimate of anticipated experience under the System. Based on the foregoing, the cost results and actuarial exhibits for funding presented in this report were determined on a consistent and objective basis in accordance with applicable Actuarial Standards of Practice and generally accepted actuarial procedures.

To the best of our knowledge, the information in this report is complete and accurate and meets the requirements and intent of Georgia Public Retirement System Law, Code Title 47, Chapter 20. The Clayton County, Georgia Public Employees Retirement System is in compliance with the Minimum Funding Standards specified in Code Section 47-20-10, and meets the funding policy of the System’s Board, which is to keep the System in compliance with such standards.

The report was prepared under the supervision of David Kershner and Kevin Spanier, the plan's Enrolled Actuaries. David is a Fellow of the Society of Actuaries, and Kevin is an Associate of the Society of Actuaries. Both are Members of the American Academy of Actuaries and have met the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Buck Global, LLC (Buck)



David J. Kershner, FSA, EA, MAAA, FCA
Principal
Enrolled Actuary Number 17-05179



Kevin Spanier, ASA, EA, MAAA, FCA
Senior Consultant
Enrolled Actuary Number 17-08105

DJK/KS/jac

Schedule A - Results of the Valuation Prepared as of July 1, 2018

1. Actuarial Accrued Liabilities	
Present Value of Prospective Benefits Payable in Respect of:	
(a) Active participants	\$ 187,110,791
(b) Retired participants, beneficiaries, and former participants entitled to deferred vested benefits	<u>439,500,391</u>
(c) Total accrued actuarial liabilities	\$ 626,611,182
2. Actuarial Value of Assets	<u>435,729,754</u>
3. Unfunded Actuarial Accrued Liability [1(c) minus 2]	\$ 190,881,428

Schedule B - Development of July 1, 2018 Actuarial Value of Assets

(1)	Market Value of Assets on July 1, 2017 including Contributions Receivable		\$ 412,200,258
(2)	Net Cash Flow		
	a. Contributions from Employer and Participants plus increase/(decrease) in Contributions Receivable		23,347,830
	b. Benefits and Administrative Expenses		<u>37,348,391</u>
	c. Net Cash Flow (2)a - (2)b		\$ (14,000,561)
(3)	Expected Investment Return, Net of Investment Expenses [(1) x .08] + [(2)c x .04]		\$ 32,415,998
(4)	Expected Market Value of Assets on July 1, 2018 including Contributions Receivable (1) + (2)c + (3)		\$ 430,615,695
(5)	Market Value of Assets on July 1, 2018, including Contributions Receivable		\$ 429,646,173
(6)	Gain/(Loss) on Market Value of Assets (5) - (4)		\$ (969,522)
(7)	Deferred Gains/(Losses) as of July 1, 2018		
		Total Gain/(Loss)	Amount Deferred
	2017	\$ (969,522)	\$ (775,618)
	2016	20,650,063	12,390,038
	2015	(35,106,024)	(14,042,410)
	2014	(18,277,954)	<u>(3,655,591)</u>
			\$ (6,083,581)
(8)	Preliminary Actuarial Value of Assets on July 1, 2018 (5) - (7)		\$ 435,729,754
(9)	80% of Market Value .80 x (5)		\$ 343,716,938
(10)	120% of Market Value 1.20 x (5)		\$ 515,575,408
(11)	Actuarial Value of Assets on July 1, 2018 Lesser of (10) and maximum of (8) and (9)		\$ 435,729,754

Schedule C - Assets of the Retirement System

Reconciliation of Market Value of Assets

Receipts

Employer and Participant Contributions		\$ 23,347,830
Investment Income		
Interest and Dividends	\$ 5,232,024	
Net Appreciation (Depreciation) in Fair Value of Investments	<u>26,214,452</u>	
Total Investment Income		<u>31,446,476</u>
Total Receipts		\$ 54,794,306

Disbursements

Benefits Paid		\$ 36,826,110
Increase in Pending Refunds ¹		36,030
Administrative and Investment Expenses		<u>486,251</u>
Total Disbursements		\$ 37,348,391

Excess of Receipts Over Disbursements \$ 17,445,915

Reconciliation of Asset Balances

Market Value at July 1, 2017, including contributions receivable		\$ 412,200,258
Excess of Receipts Over Disbursements		<u>17,445,915</u>
Market Value at July 1, 2018, including contributions receivable		\$ 429,646,173

¹ Unpaid Pending Refunds amount of \$938,532 was subtracted from the July 1, 2017 Market Value of Assets, and \$974,562 was subtracted from the July 1, 2018 Market Value of Assets. The difference of \$36,030 was added to the annual disbursements during the year.

Schedule D - Development of Experience Gain/(Loss)

1. Actual Unfunded Accrued Liability as of July 1, 2017		\$ 177,145,407
2. Expected Change in Unfunded Liability During Plan Year Ending June 30, 2018		
a. Total Normal Cost (beginning of year)	\$ 12,499,017	
b. Mortality Change	0	
c. Change to Salary Scale	0	
d. Change to retirement/termination decrements	0	
e. Plan Changes	0	
f. Interest on Normal Cost and Unfunded Liability	15,171,554	
g. Actual Employer and Participant Contributions with Interest	<u>(24,263,777)</u>	
h. Total Expected Change	\$ 3,406,794	
3. Expected Unfunded Accrued Liability as of July 1, 2018		\$ 180,552,201
4. Actual Unfunded Accrued Liability as of July 1, 2018		\$ 190,881,428
5. Experience Gain/(Loss) ¹ (3) – (4)		\$ (10,329,227)

¹ Liability related portion of experience Gain/(Loss): \$ (7,805,549)
 Asset related portion of experience Gain/(Loss): \$ (2,523,678)

Schedule E - Outline of Actuarial Assumptions and Methods

Interest Rate

8% per annum, net of investment expenses.

Separations before Retirement – Hired Before 1/1/2016

Representative values of the assumed annual rates of withdrawal, disability, and death are as follows:

Safety

Age	Annual Rate of					Disability
	Years 0-1	Years 1-2	Years 2-3	Years 3-6	Years 7+	
25	15.00%	12.00%	10.00%	8.00%	6.75%	.07%
30	15.00	12.00	10.00	8.00	6.50	.08
35	15.00	12.00	10.00	8.00	5.75	.09
40	15.00	12.00	10.00	8.00	4.00	.11
45	15.00	12.00	10.00	8.00	3.25	.16
50	15.00	12.00	10.00	8.00	3.25	.24
55	-	-	-	-	-	.40
60	-	-	-	-	-	.84
64	-	-	-	-	-	1.49

Non-Safety

Age	Annual Rate of					Disability
	Years 0-1	Years 1-2	Years 2-3	Years 3-6	Years 7+	
25	15.00%	12.00%	10.50%	6.75%	6.75%	.07%
30	15.00	12.00	10.50	6.75	6.25	.08
35	15.00	12.00	10.50	6.75	6.00	.09
40	15.00	12.00	10.50	6.75	4.50	.11
45	15.00	12.00	10.50	6.75	3.00	.16
50	15.00	12.00	10.50	6.75	2.25	.24
55	15.00	12.00	10.50	6.75	2.00	.40
60	15.00	12.00	10.50	6.75	2.00	.84
64	15.00	12.00	10.50	6.75	2.00	1.49

Schedule E - Outline of Actuarial Assumptions and Methods (continued)

Separations before Retirement – Hired on or After 1/1/2016

Representative values of the assumed annual rates of withdrawal, disability, and death are as follows:

Safety

Age	Annual Rate of					Disability
	Years 0-1	Years 1-2	Withdrawal Years 2-3	Years 3-9	Years 10+	
25	15.00%	12.00%	10.00%	8.00%	6.75%	.07%
30	15.00	12.00	10.00	8.00	6.50	.08
35	15.00	12.00	10.00	8.00	5.75	.09
40	15.00	12.00	10.00	8.00	4.00	.11
45	15.00	12.00	10.00	8.00	3.25	.16
50	15.00	12.00	10.00	8.00	3.25	.24
55	-	-	-	-	-	.40
60	-	-	-	-	-	.84
64	-	-	-	-	-	1.49

Non-Safety

Age	Annual Rate of					Disability
	Years 0-1	Years 1-2	Withdrawal Years 2-3	Years 3-9	Years 10+	
25	15.00%	12.00%	10.50%	6.75%	6.75%	.07%
30	15.00	12.00	10.50	6.75	6.25	.08
35	15.00	12.00	10.50	6.75	6.00	.09
40	15.00	12.00	10.50	6.75	4.50	.11
45	15.00	12.00	10.50	6.75	3.00	.16
50	15.00	12.00	10.50	6.75	2.25	.24
55	15.00	12.00	10.50	6.75	2.00	.40
60	15.00	12.00	10.50	6.75	2.00	.84
64	15.00	12.00	10.50	6.75	2.00	1.49

Schedule E - Outline of Actuarial Assumptions and Methods (continued)

Rates of Retirement – Hired Before 1/1/2016

Representative values of the assumed annual rates of early and normal retirement are as follows:

Age	Annual Rate of Retirement			
	Non-Safety		Safety	
	Early	Normal*	Early	Normal ¹
50	.040		.100	
51	.080		.100	
52	.120		.150	
53	.180		.250	
54	.250		.350	
55	.085	.100	.550	.250
56	.085	.100	.160	.100
57	.085	.100	.160	.100
58	.085	.100	.160	.150
59	.085	.100	.160	.200
60		.250		.550
61		.150		.650
62		.220		.650
63		.160		.650
64		.110		.650
65		.600		1.000
66		.400		
67		.400		
68		.400		
69		.400		
70		1.000		

Note: Employees who terminate with a vested benefit and greater than 15 years of service are assumed to commence at age 55 with a subsidized early retirement pension. Other deferred vested employees are assumed to commence at normal retirement age.

¹ An additional 30% are assumed to retire upon attainment of 25 years of service.

Schedule E - Outline of Actuarial Assumptions and Methods (continued)

Rates of Retirement – Hired on or After 1/1/2016

Representative values of the assumed annual rates of early and normal retirement are as follows:

Age	Annual Rate of Retirement			
	Non-Safety ¹		Safety ²	
	Early	Normal	Early	Normal*
50			.100	
51			.100	
52			.150	
53			.250	
54			.350	
55	.400		.160	.250
56	.100		.160	.100
57	.090		.160	.100
58	.080		.160	.150
59	.070		.160	.200
60	.060			.550
61	.050			.650
62		.250		.650
63		.160		.650
64		.110		.650
65		.600		1.000
66		.400		
67		.400		
68		.400		
69		.400		
70		1.000		

Note: Employees who terminate with a vested benefit and greater than 15 years of service are assumed to commence at age 55 with a subsidized early retirement pension. Other deferred vested employees are assumed to commence at normal retirement age.

¹ An additional 30% are assumed to retire in the year when first eligible for normal retirement.

² An additional 30% are assumed to retire in the year when first eligible for normal retirement and upon attainment of 25 years of service.

Schedule E - Outline of Actuarial Assumptions and Methods (continued)

Salary Increases

3% per annum through 6/30/2023, and 4% per annum thereafter.

Mortality

Healthy Annuitants

RP2014 Blue Collar mortality table rolled back to 2010, with a load of 7.75%, and projected with fully generational mortality improvements based on the Buck Modified MP2017 projection scale.

Healthy Non-annuitants

RP2014 Blue Collar mortality table rolled back to 2010 and projected with fully generational mortality improvements based on the Buck Modified MP2017 projection scale.

Disabled Participants

RP2014 Disabled mortality table rolled back to 2010 and projected with fully generational mortality improvements based on the Buck MP2017 projection scale.

Future Administrative Expenses

Expenses assumed to be 0.325% of payroll.

Loading or Contingency Reserves

A 0.10% load on active liabilities is applied to reflect potential use of accumulated sick leave upon retirement.

Spouses

The husband is assumed to be three years older than the wife, and it is assumed that 85% of the participants are married.

Contingent Assets & Liabilities

None as of July 1, 2018.

Valuation Assets

Actuarial Value, as developed in Schedule B. The actuarial value of assets is based on a 5-year smoothing of market value gains and losses starting with the asset gains and losses for the period July 1, 2013 to June 30, 2014. The actuarial value of assets is limited to a range between 80% and 120% of market value.

Schedule E - Outline of Actuarial Assumptions and Methods (continued)

Valuation Funding Method

- Projected unit credit cost method. Gains and losses are reflected in the unfunded actuarial accrued liability.
- The unfunded accrued liability is amortized on a level dollar basis over an open period of 30 years. Since the minimum contribution used for compliance with Georgia statute is determined based upon a 30-year amortization approach that restarts each year, absent contributions being made in excess of the recommended contribution or future actuarial gains, the emerging unfunded accrued liability will not be amortized. However, the System is funded based on a normal level percent of pay plus any special budgeted percentage of pay needed to meet the minimum contribution under Georgia statute. It is expected as the funded status of the System improves the normal level percent of pay contribution will be greater than the minimum contribution under Georgia statute and excess contributions will be created and eventually eliminate the unfunded accrued liability.
- Projected benefits were limited by the dollar limitation required by the Internal Revenue Code Section 415 as it applies to governmental plans and compensation limited by Section 401(a)(17).

Inflation

3% per annum (used for the amortization of unfunded actuarial accrued liability).

Contribution Timing

Employee contributions are assumed to occur bi-weekly and County contributions quarterly.

Historical Assumption Changes

Effective 7/1/2018

None

Effective 7/1/2017

Mortality for Healthy Annuitants

Prior Year: RP2014 blue collar base rates with a load of 7.75% with fully generational mortality improvements based on the Modified Buck MP2014 projection scale.

Current Year: RP2014 Blue Collar mortality table rolled back to 2010, with a load of 7.75%, and projected with fully generational mortality improvements based on the Buck Modified MP2017 projection scale.

Mortality for Healthy Non-annuitants

Prior Year: RP2014 blue collar base rates with fully generation mortality improvements based on the Modified Buck MP2014 projection scale.

Current Year: RP2014 Blue Collar mortality table rolled back to 2010 and projected with fully generational mortality improvements based on the Buck Modified MP2017 projection scale.

Schedule E - Outline of Actuarial Assumptions and Methods (continued)

Mortality for Disabled Participants

Prior Year: RP2014 disabled base rates with Modified Buck MP 2014 projection scale.

Current Year: RP2014 Disabled mortality table rolled back to 2010 and projected with fully generational mortality improvements based on the Buck Modified MP2017 projection scale.

Mortality for Disabled Participants

Prior Year: RP2014 disabled base rates with Modified Buck MP 2014 projection scale.

Current Year: RP2014 Disabled mortality table rolled back to 2010 and projected with fully generational mortality improvements based on the Buck Modified MP2017 projection scale.

Effective 7/1/2016

For new members hired after January 1, 2016, assumed rates of retirement and termination were implemented to correspond with the new vesting and retirement eligibility requirements. Sample rates of retirement and termination are shown above.

Effective 7/1/2015

The mortality table for healthy participants was changed to the RP2014 blue collar base rates with a load of 7.75% with fully generational mortality improvements based on the Modified Buck MP 2014 projection scale. For non-annuitants, the mortality table was changed to RP2014 blue collar base rates with fully generation mortality improvements based on the Modified Buck MP 2014 projection scale. The mortality table for disabled participants was changed RP2014 disabled base rates with Modified Buck MP 2014 projection scale. The assumption for Future Administration expenses was changed to 0.325% of payroll.

Effective 7/1/2014

The assumed rates of salary increase were adjusted to 2.00% for 4 years, 3.00% for the next 5 years, and 4.00% thereafter. The mortality table for healthy participants was changed to the RP-2000 blue collar base rates increased by 7.5% to reflect actual plan experience, generationally projected using Scale BB for annuitants and the RP-2000 blue collar base rates, generationally projected using Scale BB for non-annuitants. The mortality table for disabled participants was changed to the RP-2000 disabled mortality table. The assumed rates of retirement and termination were changed to better reflect anticipated experience. The asset valuation method was changed to reflect a 5-year smoothing of market value gains and losses beginning with gains and losses for the period July 1, 2013 – June 30, 2014. The Actuarial Value of Assets is limited to an 80% - 120% market value corridor.

Schedule E - Outline of Actuarial Assumptions and Methods (continued)

Effective 7/1/2013

The assumed rates of salary increase were adjusted from 3% for the next 9 years and 4% thereafter to 0% for the upcoming year for County employees, 2% for the upcoming year for Water Authority employees, 3% for the next 9 years for all employees and 4% thereafter for all employees. The mortality table was changed to the RP 2000 Mortality Table with a 10% load projected to the year 2019 with Blue Collar adjustment.

Effective 7/1/2012

The assumed rates of salary increase were adjusted from 3% for the next 10 years and 4% for the following 20 years to 0% for the upcoming year for County employees, 1% for the upcoming year for Water Authority employees, 3% for the next 9 years for all employees and 4% thereafter for all employees. The mortality table was changed to the RP 2000 Mortality Table with a 10% load projected to the year 2018 with Blue Collar adjustment.

Effective 7/1/2011

The mortality table was changed from the RP 2000 Mortality Table with Blue Collar adjustments to the RP 2000 Mortality Table with a 10% load projected to the year 2017 with Blue Collar adjustment; the assumed rates of salary increase was adjusted from a flat 4% to 0% for the upcoming year, 3% for the next 10 years and 4% thereafter; and the assumed rate of inflation used as an amortization adjustment was changed from a flat 4% to 3% for the next 11 years and 4% thereafter.

Effective 7/1/2009

The salary scale assumption decreased from 5.3% annually to 4.0% annually.

Effective 7/1/2008

The mortality table for employees (both before and after retirement) changed from the 1983 Group Annuity Mortality Table to the RP-2000 Mortality Table with Blue Collar Adjustment.

Effective 7/1/2004

The expense assumption has been lowered to .20% of payroll to reflect true level of administrative expense. The retirement table has been changed to produce expected results that more closely match recent experience. The salary scale has increased from 5.0% to 5.3%.

Effective 7/1/2003

The mortality table for employees (both before and after retirement) changed from the 1971 Group Annuity Mortality Table set back 1 year to the 1983 Group Annuity Mortality Table. The withdrawal table for employees changed to a 3-year select-and-ultimate table to reflect recent plan experience.

Effective 7/1/2001

The mortality table has been set back one year.

Schedule F - Summary of the Main Benefit and Contribution Provisions

Effective Date

July 1, 1971.

Plan Year and Fiscal Year

Each July 1 to June 30.

Type of Plan

A cost-sharing multiple-employer defined benefit pension plan administered by a public employee retirement system funded by the System Sponsors (Clayton County and the Clayton County Water Authority) and Participant contributions.

Employees Covered

Full-time employees, including Commissioners, persons appointed by Commissioners, judicial secretaries, Probate Court Judge, magistrate, Court Clerks, Sheriff and Chief Deputy, Tax Commissioner and Deputy, and Water Authority employees and appointees.

Effective November 1, 2010, any employee who is enrolled or becomes an active participant or member in the Employees Retirement System of Georgia or the Georgia State Employees Pension and Savings Plan (or any successor plan) will not be covered under this System. This amendment was not reflected in the July 1, 2010 valuation.

Effective July 1, 2012, State Court Law Clerks are now eligible to participate in the System.

Credited Service

Service from employment. Effective January 1, 1999, each Participant's sick leave in excess of the allowable amount, as of the last pay period of each calendar year, shall be placed in reserve status to be used in determining Credited Service at the Participant's termination of employment. Certain employees' service with The City of Forest Park Water and Sewer Department is included as Credited Service.

Normal Retirement Benefit

Eligibility – Hired Before 1/1/2016

The earlier of age 60 and 7 years of participation (5 years of participation for sworn safety personnel hired prior to June 1, 2001), or age 55 and 25 years of credited service. Effective January 1, 1999, a Participant may elect to apply sick leave reserve as an age credit in determining the attainment of Normal Retirement Age.

Eligibility – Hired on or After 1/1/2016

General Members

- Normal retirement at age 62 with 10 years of service

Public Safety Members

- Normal retirement at age 60 with 10 years of service or 55 with 25 years of service

Schedule F - Summary of the Main Benefit and Contribution Provisions (continued)

Basic Monthly Benefit

2.5% of average monthly salary multiplied by years of credited service up to 32.

For members hired before January 1, 2016, average monthly compensation is based on the 36 highest consecutive months of service during the last 60 months of service. For members hired on or after January 1, 2016, average monthly compensation is based on the last 60 months of service.

Cost of Living Adjustments

Annual 2.0% cost of living increase effective beginning July 1, 2009 for those who have received their 84th monthly benefit payment prior to July 1.

For new employees hired after 1/1/2016, COLA is discretionary and provided on an ad-hoc basis.

Early Retirement Benefit

Eligibility – Hired Before 1/1/2016

The earlier of age 50 and 25 years of credited service or age 55 and 15 years of credited service.

Eligibility – Hired on or After 1/1/2016

General Members

- Early retirement at age 60 with 15 years of service or age 55 with 25 years of service

Public Safety Members

- Early retirement at age 55 with 15 years of service or age 50 with 25 years of service

Benefit

If the participant has 25 years of credited service, the benefit is reduced 1/2% for each month age is less than 55.

If the participant has less than 25 years of credited service, the benefit is reduced 1/2% for each month age is less than 60.

Disability Retirement

Eligibility

3 years of credited service for in line-of-duty; 7 years of credited service for other than in line-of-duty.

Benefit

30% of participants' monthly rate of compensation as of the date of disability.

Late Retirement Benefit

Eligibility

Retirement after eligibility for normal retirement.

Benefit

Normal retirement benefit based on average monthly salary and service at actual date of retirement.

Schedule F - Summary of the Main Benefit and Contribution Provisions (continued)

Deferred Vested Benefit

Eligibility – Hired Before 1/1/2016

7 years of credited service.

Eligibility – Hired on or After 1/1/2016

10 years of credited service.

Benefit

100% of accrued benefit commencing at normal retirement age. If the member has 15 years of credited service, he/she may receive a reduced benefit commencing at early retirement age.

Pre-Retirement Death Benefit

In Line-of-Duty

Eligibility

Participation in the System.

Benefit

Survivor portion of the 50% Joint and Survivor benefit payable immediately (unreduced for early commencement) if married. If not married, payments are unreduced and paid for 60 months.

Other than Line-of-Duty

Eligibility

7 years of service.

Benefit

Same as in line-of-duty benefit if greater than age 50. If under age 50, 50% of the deferred vested benefit reduced for early retirement payable at early retirement date if married. If not married, the benefit reduced for early retirement is paid for 60 months starting at early retirement age.

Excess Benefits for Water Authority

Participants Only

Benefits in excess of the Internal Revenue Code 415 (m) limits are funded by the Water Authority as the benefits become payable but are not included in the valuation.

Normal Form of Payment

5 years certain and life annuity.

Optional Forms of Payment

- 100%, 75%, or 50% joint and survivor annuity
- Life annuity with 120 months certain

Schedule F - Summary of the Main Benefit and Contribution Provisions (continued)

Participant Contributions

Each participant contributes 7.5% of compensation beginning July 1, 2015. Contribution rate from July 1, 2006 through June 30, 2014 was 5.5% of compensation. Contribution rate from August 8, 1998 through June 30, 2006 was 3.5% of compensation and for July 1, 1995 through August 7, 1998 was 2.0% of compensation. If a participant terminates employment before meeting the requirements for any of the above benefits, he/she is entitled to receive a return of his/her contributions with 5% interest.

Any participant or beneficiary may elect to receive a refund of contributions with interest in lieu of any other benefit payable under the System.

Participant contributions are “picked-up” by the County (i.e., taken out of pre-tax income).

Schedule F - Summary of the Main Benefit and Contribution Provisions (continued)

Historical Provision Changes

Effective 7/1/2016

For new members hired after January 1, 2016:

- 10-year vesting
- Final average compensation based on final 5 years of service
- Discretionary, ad-hoc COLA
- Change in normal and early retirement eligibility:
 - General Members
 - Early retirement at age 60 with 15 years of service or age 55 with 25 years of service
 - Normal retirement at age 62 with 10 years of service
 - Public Safety Members
 - Early retirement at age 55 with 15 years of service or age 50 with 25 years of service
 - Normal retirement at age 60 with 10 years of service or 55 with 25 years of service

Effective 7/1/2015

The County and Water Authority contribution rate was increased to 13.9% from 12.9%.

The participant contribution rate was increased from 5.5% to 7.5%.

For employees hired on or after January 1, 2016 a new tier of benefits will apply.

Effective 7/1/2012

State Court Law Clerks are now eligible to participate in the System.

Effective 7/1/2008

Eliminated the 60-month certain and 114-month certain optional forms of payment for annuity starting dates after December 31, 2008.

Effective 7/1/2007

Adjusted accrued benefits of three people as of their normal retirement age.

Effective 7/1/2006

Added an annual 2.0% cost of living increase effective beginning July 1, 2009 for those who have received their 84th monthly benefit payment prior to July 1.

Increased participant contributions from 3.5% to 5.5%.

Granted a one-time 4.0% benefit increase to current participants, spouses and beneficiaries who were receiving benefits as of January 1, 2001.

Added a minimum monthly allowance of \$300 (after the above benefit increases) to any participant, spouse or beneficiary receiving benefits as of July 1, 2006.

Added an Excess Benefit Arrangement providing benefits in excess of IRS Code Sec. 415 for Water Authority employees funded entirely and separately by the Water Authority.

Effective 7/1/2005

Added the 60-month certain and 114-month certain optional forms of payment.

Schedule F - Summary of the Main Benefit and Contribution Provisions (continued)

Effective 7/1/2003

The County and Water Authority contribution rate was increased to 12.9% from 12.4% and it is now applied to compensation under the System rather than total compensation.

The definition of compensation excludes certain forms of premium pay.

The compensation limit has been increased to \$200,000.

The mortality table used to convert benefits to optional forms of payment has been changed to the table prescribed under Revenue Ruling 2001-62.

The Social Security Leveling Option has been removed as an optional form of payment.

The normal form of payment for persons receiving disability payments has been changed from a life annuity to a life annuity with 60 months guaranteed. Upon death, payments to beneficiaries will continue according to the election chosen for the disability payments.

The method for computing final average earnings was clarified.

The basis for actuarial equivalence for maximum benefit limit purposes has been changed.

Effective 7/1/2001

Normal Retirement Age for non-Safety Personnel was amended from age 65 with 5 years of credited service to age 60 with 7 years of credited service.

For Safety Personnel hired after 6/1/2001, 7 years of credited service is required for Normal Retirement.

Funding rate increased from 12.15% to 12.40%.

The pre-Retirement Death Benefit was changed from 50% of the Normal Fund Payment as if employment continued to normal retirement to the survivor portion of the 50% Joint and Survivor benefit (unreduced for early commencement). If the participant is single, the Normal Fund Payment is paid as a 5-year certain only benefit.

Schedule G - Member Statistics

June 30, 2018

Active members

Number	2,464
Average age	42.10
Average service	8.37

Terminated vested members

Number	289
Average age	51.50
Average annual retirement benefits	\$ 12,691

Retired members

Number	1,141
Average age	68.14
Average annual retirement benefits	\$ 30,362

Disabled members

Number	66
Average age	62.72
Average annual retirement benefits	\$ 19,228

Survivors and beneficiaries of members

Number	143
Average age	67.12
Average annual retirement benefits	\$ 14,955

Total Number of Members

4,103

Schedule G - Member Statistics (continued)

Age Service Table (all Active Participants)

Attained Age	Completed Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & up	
Under 25	87	71	2	0	0	0	0	0	0	0	160
Avg. Pay	33,382	40,614	*	0	0	0	0	0	0	0	36,617
25 to 29	82	196	51	1	0	0	0	0	0	0	330
Avg. Pay	37,249	40,895	45,814	*	0	0	0	0	0	0	40,768
30 to 34	47	142	86	50	0	0	0	0	0	0	325
Avg. Pay	40,117	41,460	46,278	53,739	0	0	0	0	0	0	44,430
35 to 39	40	94	73	73	30	2	0	0	0	0	312
Avg. Pay	37,354	48,371	47,187	52,043	58,975	*	0	0	0	0	48,625
40 to 44	30	67	63	50	38	21	0	0	0	0	269
Avg. Pay	38,871	44,741	48,163	50,568	58,994	67,077	0	0	0	0	49,728
45 to 49	25	61	69	76	45	56	23	5	0	0	360
Avg. Pay	38,308	43,628	48,024	49,257	57,793	74,747	70,756	*	0	0	54,044
50 to 54	26	51	51	56	36	47	39	26	0	0	332
Avg. Pay	41,393	42,817	45,131	50,576	58,701	66,833	81,287	80,385	0	0	56,953
55 to 59	16	42	42	56	35	19	9	5	0	0	224
Avg. Pay	*	40,040	45,948	45,093	47,128	*	*	*	0	0	47,646
60 to 64	1	17	32	32	19	5	2	1	1	0	110
Avg. Pay	*	*	43,823	42,754	*	*	*	*	*	0	47,851
65 to 69	5	4	8	10	4	1	0	0	1	0	33
Avg. Pay	*	*	*	*	*	*	0	0	*	0	42,530
70 & up	0	2	2	3	2	0	0	0	0	0	9
Avg. Pay	0	*	*	*	*	0	0	0	0	0	*
Total	359	747	479	407	209	151	73	37	2	0	2,464
Avg. Annual Pay	37,335	42,927	46,224	49,273	55,731	69,602	76,885	76,148	*	*	48,031

*pay information for cells with less than 20 employees have not been disclosed.