Fulton County Employees Retirement System

Actuarial Valuation and Review as of
January 1, 2016

Segal Consulting
2018 Powers Ferry Road, Suite 850 Atlanta, GA 30339-7200
T 678.306.3100 www.segalco.com

April 4, 2016

Board of Trustees
Fulton County Employees Retirement System
141 Pryor Street, Suite 7001
Atlanta, GA 30303

Dear Board Members:

We are pleased to submit this Actuarial Valuation and Review as of January 1, 2016. It summarizes the actuarial data used in the valuation, establishes the funding requirements for fiscal 2016 and analyzes the preceding year's experience.

This report was prepared in accordance with generally accepted actuarial principles and practices at the request of the Board to assist in administering the Retirement System. The census information and financial information on which our calculations were based was prepared by the staff of Fulton County. That assistance is gratefully acknowledged.

We hereby certify that the Fulton County Employees Retirement System has been funded in conformity with the minimum funding standards specified in Code Section 47-20-10 of the Official Code of Georgia Annotated, known as the Public Retirement Systems Standards Law. This certification covers the 2015 fiscal year of the Plan.

The measurements shown in this actuarial valuation may not be applicable for other purposes. Future actuarial measurements may differ significantly from the current measurements 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); and changes in plan provisions or applicable law.

The actuarial calculations were directed under my supervision. I am a member of the American Academy of Actuaries and I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. To the best of my knowledge, the information supplied in the actuarial valuation is complete and accurate. Further, inmy opinion, the assumptions as approved by the Board are reasonably related to the experience of and the expectations for the Plan.

We look forward to reviewing this report at your next meeting and to answering any questions.

Sincerely,

Segal Consulting, a Member of The Segal Group, Inc.

By: Deborah K. Brigham

Deborah K. Brigham FCA, ASA, MAAA, EA
Vice President and Consulting Actuary

SECTION 1

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SECTION 2

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Purpose

This report has been prepared by Segal Consulting to present a valuation of the Fulton County Employees Retirement System as of January 1, 2016. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits. The contribution requirements presented in this report are based on:

- The benefit provisions of the Pension Plan, as administered by the Board;
- The characteristics of covered active participants, inactive vested participants, and retired participants and beneficiaries as of January 1, 2016, provided by the County;
- The assets of the Plan as of December 31, 2015, provided by the County;
- Economic assumptions regarding future salary increases and investment earnings; and
- Other actuarial assumptions, regarding employee terminations, retirement, death, etc.

Significant Issues in Valuation Year

1. The recommended contribution has increased about $1.9 million, from $48.6 million as of January 1, 2015 to $50.5 million as of January 1, 2016. The primary reason for the increase was a change in the assumed interest rate. Chart 14 on page 13 in Section 2 of this report shows a reconciliation of the recommended contribution amounts from 2015 to 2016.
2. The County contributed $47.2 million in 2015. Georgia law allows sponsors to offset future required contributions with accumulated contributions in excess of the minimum (i.e., credit balance). Since the County contributed less than the recommended contribution for 2015, the credit balance has decreased from $5.0 million to $3.7 million since the last valuation.
3. Georgia Code Section 47-20-10(b) allows a Plan to be in compliance the minimum funding standards if the sponsor makes contributions equal to or greater than the annual required contribution (ARC) under Governmental Accounting Standards Board (GASB) Statements No. 25 and No. 27 as in effect on June 15, 2013. The lowest ARC allowable is based on a 30-year level percent-of-pay amortization of the Plan's unfunded actuarial liability. The County is making annual contributions in excess of this amount, and therefore the Plan is in compliance with Georgia law.
4. As mentioned above, the Pension Board Finance Committee lowered the assumed rate of return from 7.70% to 7.60% with this valuation. The actuarial liability increased about $15.5 million and the recommended contribution increased about $1.5 million as a result of this change. Also, the administrative expense assumption decreased from $700,000 to $600,000, based on the actual prior year expenses rounded to the nearest $100,000.

5. The investment rate of return on an actuarial basis for the year ended December 31, 2015 was 7.71%. Since the rate of return was slightly greater than the assumed rate of return of 7.70% per year, there was a small actuarial investment gain amounting to $0.1 million. The return on a market value basis was -0.88%. The smoothed actuarial value of assets is 103.2% of the market value of assets as of the valuation date, and there are deferred losses of $38.6 million. Chart 10 on page 9 details the Plan's actuarial value and market value returns over the last nine years.
6. Based on the actuarial value of assets, the funded ratio for this Plan remained virtually unchanged; it was 75.00% as of January 1, 2015 and is 74.93% as of January 1, 2016. However, on a market value basis the funded ratio has decreased from 78.94% to 72.63%. The Schedule of Funding Progress is shown in Exhibit III of Section 4.
7. In accordance with a settlement in the case of *Charlotte Burnett, et al. v. Trustees of the Fulton County Employees Retirement System, et al.*, in May 2016 the System will pay a total lump sum of almost $2.1 million to approximately 500 retirees, their beneficiaries, and/or their estates. This payment is reflected in the System's December 31, 2015 financial statements as a payable, and is reflected in the assets for this valuation. There will also be adjustments in the benefit amounts of many of these annuitants, but the updates have not yet been reflected in the valuation data. It is not anticipated that these changes will have a material impact on the liabilities of the System, and they will be reflected in the January 1, 2017 valuation.
8. The Retirement System was closed to new entrants in 1999, and the covered active employee group is declining. There are 478 actives remaining as of the valuation date. There are 3,210 annuitants, and benefit payments totaled $122.5 million in 2015. Over the next ten years, benefit payments are projected to grow to $146.5 million, as shown in Exhibit J in Section 3.
9. As requested by County Staff, the actuarially determined contribution has been allocated to various County Funds and to DFACS. The allocation schedule is provided on page iv in this report.
10. Section 5 of this valuation report includes financial reporting information for the Plan as specified by GASB Statements 67 and 68 for the Fiscal Year ending December 31, 2015.
11. The audited financial information received states all results rounded to the nearest thousand. The results in this valuation are shown to the dollar. Therefore, occasionally rounded numbers are combined with unrounded ones.

Summary of Key Valuation Results

	2016	2015
Contributions for plan year beginning January 1:		
Recommended employer contribution	$50,493,163	$48,586,172
Actual County contributions	--	47,230,000
Georgia credit balance	3,739,695	5,000,000
Funding elements for plan year beginning January 1:		
Normal cost, including administrative expenses	$3,651,042	$4,115,289
Market value of assets	1,217,955,000	1,306,027,000
Actuarial value of assets	1,256,554,200	1,240,742,474
Actuarial accrued liability	1,677,001,812	1,654,412,161
Unfunded actuarial accrued liability	420,447,612	413,669,687
Funded ratio on market value basis	72.63%	78.94%
Funded ratio on actuarial value basis	74.93%	75.00%
Demographic data for plan year beginning January 1:		
Number of retired participants and beneficiaries	3,210	3,179
Number of vested former participants	27	27
Number of active participants	478	576
Total payroll	$27,819,954	$32,828,504
Average payroll	58,201	56,994

Actuarially Determined Employer Contribution Allocated by Fund

Fulton County Fund	Fund Number	Percentage of Total Liability	Actuarially Determined Employer Contribution (ADEC)*
General	100	68.44%	$34,571,662
Airport	200	0.16%	79,037
Water & Sewer	201 & 203	2.84%	1,477,654
Old SSD	300	7.58%	3,711,790
South Fulton District	301	8.71%	4,488,781
Emergency 911	340	0.50%	332,763
Fulton Employee Retirement	415	0.12%	62,218
Restricted Assets	441	0.09%	45,147
Grants	461	0.33%	159,651
Risk Management	725	0.04%	24,455
Grants - Health & Wellness	818	5.64%	2,820,239
Comm Dev Block Grants	865	0.04%	20,427
DFACS	DFACS	5.51%	2,699,339
Total		100.00%	$50,493,163

** Each Fund's normal cost was calculated independently. The administrative expenses and the amortization of the unfunded liability were allocated based on the actuarial accrued liability of each Fund as a percentage of the System's total, and then added to normal cost to determine an ADEC. Allocating the cost in this manner ensures that the funded percentage for each Fund equals the funded percentage for the System as a whole.*

Important Information About Actuarial Valuations

An actuarial valuation is a budgeting tool with respect to the financing of future projected obligations of a pension plan. It is an estimated forecast – the actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.

In order to prepare a valuation, Segal Consulting ("Segal") relies on a number of input items. These include:

- **Plan of benefits** Plan provisions define the rules that will be used to determine benefit payments, and those rules, or the interpretation of them, may change over time. Even where they appear precise, outside factors may change how they operate. It is important to keep Segal informed with respect to plan provisions and administrative procedures, and to review the plan summary included in our report to confirm that Segal has correctly interpreted the plan of benefits.
- **Participant data** An actuarial valuation for a plan is based on data provided to the actuary by the County. Segal does not audit such data for completeness or accuracy, other than reviewing it for obvious inconsistencies compared to prior data and other information that appears unreasonable. It is important for Segal to receive the best possible data and to be informed about any known incomplete or inaccurate data.
- **Assets** The valuation is based on the market value of assets as of the valuation date, as provided by the County. The County uses an "actuarial value of assets" that differs from market value to gradually reflect year-to-year changes in the market value of assets in determining the contribution requirements.
- **Actuarial assumptions** In preparing an actuarial valuation, Segal projects the benefits to be paid to existing plan participants for the rest of their lives and the lives of their beneficiaries. This projection requires actuarial assumptions as to the probability of death, disability, withdrawal, and retirement of each participant for each year. In addition, the benefits projected to be paid for each of those events in each future year reflect actuarial assumptions as to salary increases and cost-of-living adjustments. The projected benefits are then discounted to a present value, based on the assumed rate of return that is expected to be achieved on the plan's assets. There is a reasonable range for each assumption used in the projection and the results may vary materially based on which assumptions are selected. It is important for any user of an actuarial valuation to understand this concept. Actuarial assumptions are periodically reviewed to ensure that future valuations reflect emerging plan experience. While future changes in actuarial assumptions may have a significant impact on the reported results, that does not mean that the previous assumptions were unreasonable.

The user of Segal's actuarial valuation (or other actuarial calculations) should keep the following in mind:

- The actuarial valuation is prepared at the request of the County. Segal is not responsible for the use or misuse of its report, particularly by any other party.
- An actuarial valuation is a measurement of the plan's assets and liabilities at a specific date. Accordingly, except where otherwise noted, Segal did not perform an analysis of the potential range of future financial measures. The actual long-term cost of the plan will be determined by the actual benefits and expenses paid and the actual investment experience of the plan.
- If the County is aware of any event or trend that was not considered in this valuation that may materially change the results of the valuation, Segal should be advised, so that we can evaluate it.
- Segal does not provide investment, legal, accounting, or tax advice. Segal's valuation is based on our understanding of applicable guidance in these areas and of the plan's provisions, but they may be subject to alternative interpretations. The County should look to their other advisors for expertise in these areas.

As Segal Consulting has no discretionary authority with respect to the management or assets of the Plan, it is not a fiduciary in its capacity as actuaries and consultants with respect to the Plan.

A. PARTICIPANT DATA

The Actuarial Valuation and Review considers the number and demographic characteristics of covered participants, including active participants, vested terminated participants, retired participants and beneficiaries.

This section presents a summary of significant statistical data on these participant groups. More detailed information for this valuation year and the preceding valuation can be found in Section 3, Exhibits A, B, and C.

The system was closed to new entrants in 1999. Therefore, the number of active participants is declining and the ratio of non-actives to actives is increasing.

A historical perspective of how the participant population has changed over the past ten valuations can be seen in this chart.

CHART 1

Participant Population: 2006 – 2015

Year Ended December 31	Active Participants	Vested Terminated Participants*	Retired Participants and Beneficiaries	Ratio of Non-Actives to Actives
2006	1,920	27	2,382	1.25
2007	1,625	46	2,562	1.60
2008	1,441	44	2,670	1.88
2009	1,264	33	2,764	2.21
2010	1,103	36	2,886	2.65
2011	937	29	2,995	3.23
2012	811	23	3,071	3.82
2013	678	23	3,137	4.66
2014	576	27	3,179	5.57
2015	478	27	3,210	6.77

**Excludes terminated participants due a refund of employee contributions*

Active Participants

Plan costs are affected by the age, years of service and payroll of active participants. In this year's valuation, there were 478 active participants with an average age of 52.9, average years of service of 22.5 years and average payroll of $58,201. The 576 active participants in the prior valuation had an average age of 52.6, average service of 22.0 years and average payroll of $56,994.

Inactive Participants

In this year's valuation, there were 27 participants with a vested right to a deferred or immediate vested benefit. In addition, there were 204 participants entitled to a return of their employee contributions.

These graphs show a distribution of active participants by age and by years of service.

CHART 2

Distribution of Active Participants by Age as of December 31, 2015

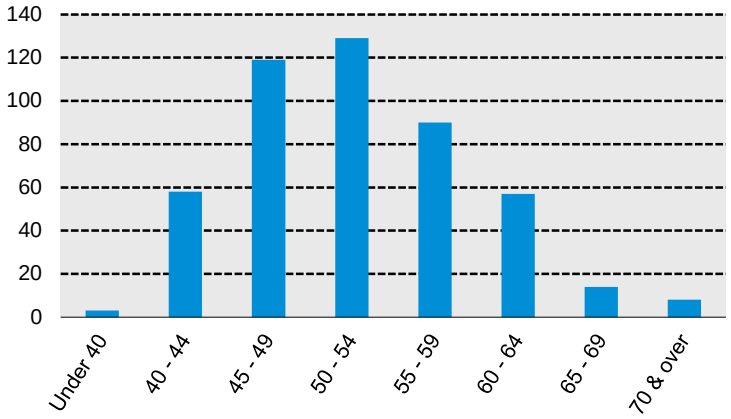
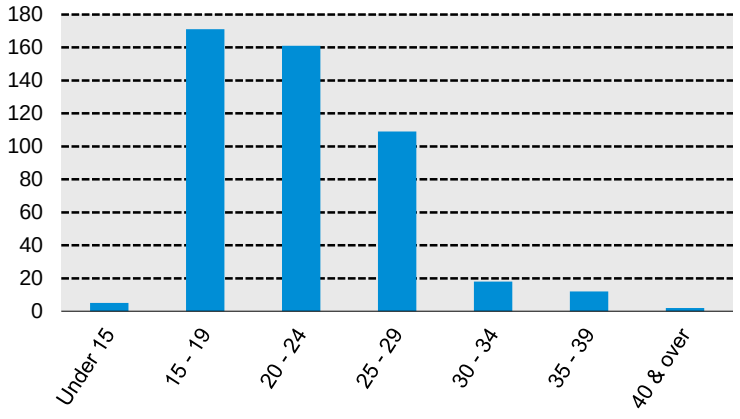


CHART 3

Distribution of Active Participants by Years of Service as of December 31, 2015



Retired Participants and Beneficiaries

As of December 31, 2015, 2,803 retired participants and 407 beneficiaries were receiving total monthly benefits of $10,297,326. For comparison, in the previous valuation, there were 2,784 retired participants and 395 beneficiaries receiving monthly benefits of $9,878,339.

These graphs show a distribution of the current retired participants and beneficiaries based on their monthly amount and age, by type of pension.

CHART 4

Distribution of Retired Participants and Beneficiaries by Type and by Monthly Amount as of December 31, 2015

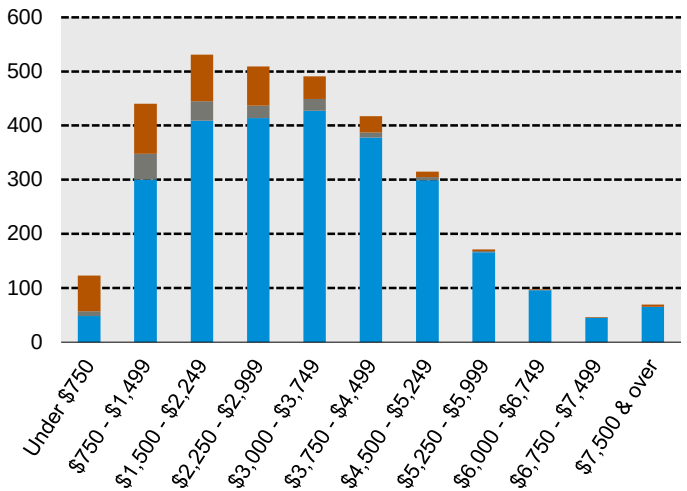
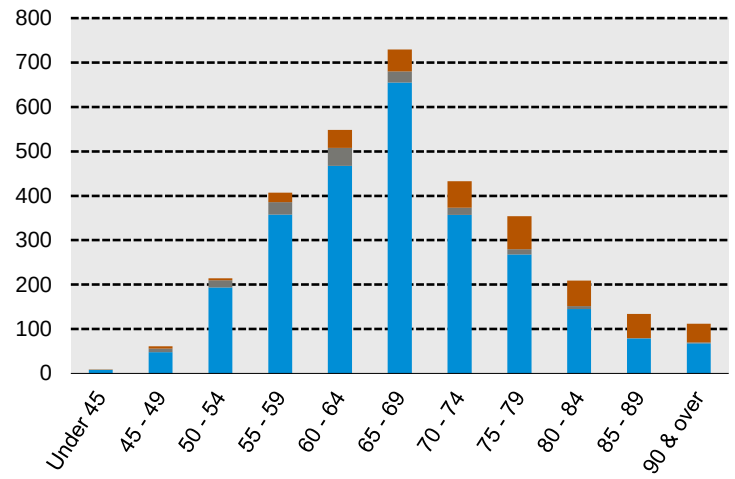


CHART 5

Distribution of Retired Participants and Beneficiaries by Type and by Age as of December 31, 2015



B. FINANCIAL INFORMATION

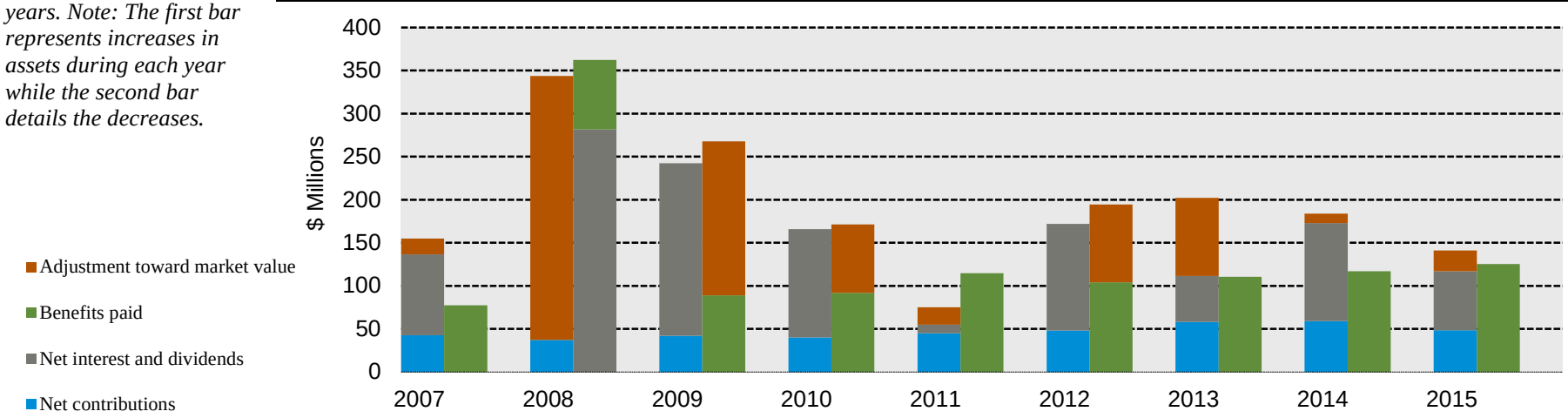
Retirement plan funding anticipates that, over the long term, both contributions (less administrative expenses) and net investment earnings (less investment fees) will be needed to cover benefit payments.

Retirement plan assets change as a result of the net impact of these income and expense components. Additional financial information, including a summary of these transactions for the valuation year, is presented in Section 3, Exhibits D, E and F.

The chart depicts the components of changes in the actuarial value of assets over the last nine years. Note: The first bar represents increases in assets during each year while the second bar details the decreases.

CHART 6

Comparison of Increases and Decreases in the Actuarial Value of Assets for Years Ended December 31, 2007 – 2015



It is desirable to have level and predictable plan costs from one year to the next. For this reason, the Board has approved an asset valuation method that gradually adjusts to market value. Under this valuation method, the full value of market fluctuations is not recognized in a single year and, as a result, the asset value and the plan costs are more stable.

The amount of the adjustment to recognize market value is treated as income, which may be positive or negative. Realized and unrealized gains and losses are treated equally and, therefore, the sale of assets has no immediate effect on the actuarial value.

The chart shows the determination of the actuarial value of assets as of the valuation date.

CHART 7

Determination of Actuarial Value of Assets for Year Ended December 31, 2015

1. Market value of assets, December 31, 2015			$1,217,955,000
2. Calculation of unrecognized return	Original Amount*	Unrecognized Return**	
(a) Year ended December 31, 2015	-$108,791,007	-$87,032,806	
(b) Year ended December 31, 2014	-34,989,501	-20,993,701	
(c) Year ended December 31, 2013	152,013,144	60,805,258	
(d) Year ended December 31, 2012	43,110,242	8,622,048	
(e) Year ended December 31, 2011	-75,879,280	0	
(f) Total unrecognized return			-38,599,200
3. Preliminary actuarial value: (1) - (2f)			1,256,554,200
4. Adjustment to be within 20% corridor			0
5. Final actuarial value of assets as of December 31, 2015: (3) + (4)			$1,256,554,200
6. Actuarial value as a percentage of market value: (5) ÷ (1)			103.2%
7. Amount deferred for future recognition: (1) - (5)			-$38,599,200

**Total return minus expected return on a market value*

***Recognition at 20% per year over five years*

****Deferred return as of December 31, 2015 recognized in each of the next four years:*

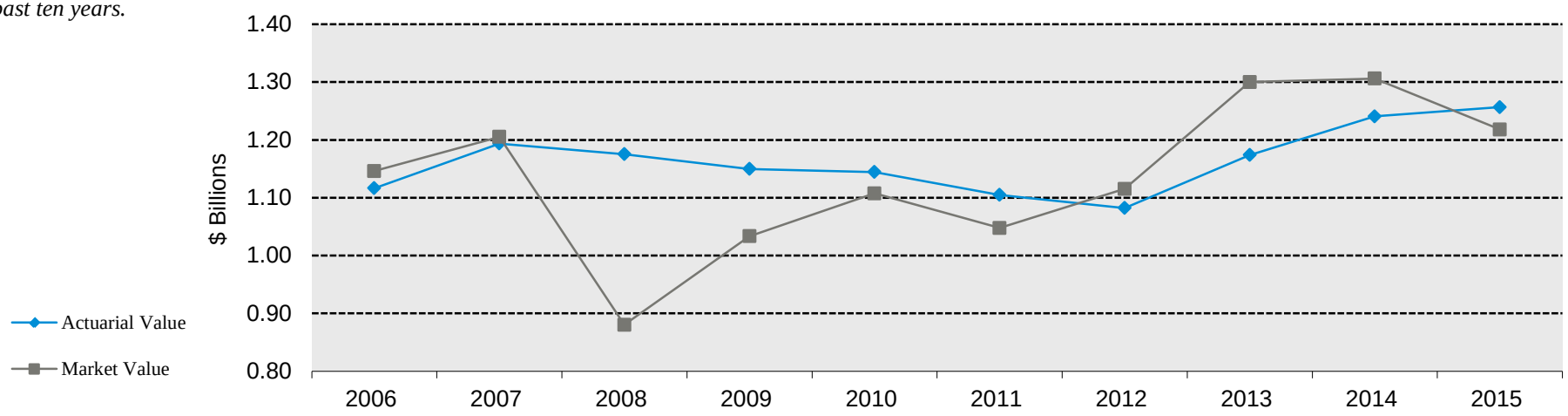
(a) Amount recognized on December 31, 2016	*$10,268,576*	*(c) Amount recognized on December 31, 2018*	*-$28,756,102*
(b) Amount recognized on December 31, 2017	*1,646,527*	*(d) Amount recognized on December 31, 2019*	*-21,758,201*

Both the actuarial value and market value of assets are representations of the Retirement System's financial status. As investment gains and losses are gradually taken into account, the actuarial value of assets tracks the market value of assets. The actuarial asset value is significant because the Retirement System's liabilities are compared to these assets to determine what portion, if any, remains unfunded. Amortization of the unfunded actuarial accrued liability is an important element in determining the contribution requirement.

This chart shows the change in the actuarial value of assets versus the market value over the past ten years.

CHART 8

Actuarial Value of Assets vs. Market Value of Assets as of December 31, 2006 – 2015



C. ACTUARIAL EXPERIENCE

To calculate the required contribution, assumptions are made about future events that affect the amount and timing of benefits to be paid and assets to be accumulated. Each year actual experience is measured against the assumptions. If overall experience is more favorable than anticipated (an actuarial gain), the contribution requirement will decrease from the previous year. On the other hand, the contribution requirement will increase if overall actuarial experience is less favorable than expected (an actuarial loss).

Taking account of experience gains or losses in one year without making a change in assumptions reflects the belief that the single year's experience was a short-term development and that, over the long term, experience will return to the original assumptions. For contribution requirements to remain stable, assumptions should approximate experience.

If assumptions are changed, the contribution requirement is adjusted to take into account a change in experience anticipated for all future years.

The total loss is $5,811,375, including a $119,629 gain from investments and $5,931,004 in net losses from all other sources. The net experience variation from individual sources other than investments was 0.4% of the actuarial accrued liability. A discussion of the major components of the actuarial experience is on the following pages.

This chart provides a summary of the actuarial experience during the past year.

CHART 9

Actuarial Experience for Year Ended December 31, 2015

1.	Net gain from investments*	$119,629
2.	Net loss from other experience	-5,931,004
3.	Net experience loss: (1) + (2)	-$5,811,375

** Details in Chart 10*

Investment Rate of Return

A major component of projected asset growth is the assumed rate of return. The assumed return should represent the expected long-term rate of return, based on the Retirement System's investment policy. For valuation purposes, the assumed rate of return on the actuarial value of assets was 7.70% for the 2015 plan year. The actual rate of return on an actuarial basis for the 2015 plan year was 7.71%.

Since the actual return for the year was slightly greater than the assumed return, the Retirement System experienced a small actuarial gain during the year ended December 31, 2015 with regard to its investments.

This chart shows the gain due to investment experience.

CHART 10

Actuarial Value Investment Experience for Year Ended December 31, 2015

1.	Actual return	$92,696,727
2.	Average value of assets	1,202,299,974
3.	Actual rate of return: (1) ÷ (2)	7.71%
4.	Assumed rate of return	7.70%
5.	Expected return: (2) x (4)	$92,577,098
6.	Actuarial gain: (1) – (5)	$119,629

Because actuarial planning is long term, it is useful to see how the assumed investment rate of return has followed actual experience over time. The chart below shows the rate of return on an actuarial basis compared to the market value investment return for the last nine years, including five-year and nine-year averages.

The Pension Board Finance Committee decided in January 2016 to lower the assumed rate of return from 7.70% to 7.60%. This rate is a reasonable assumption, based on the System's investment policy.

CHART 11

Investment Return – Actuarial Value vs. Market Value: 2007 - 2015

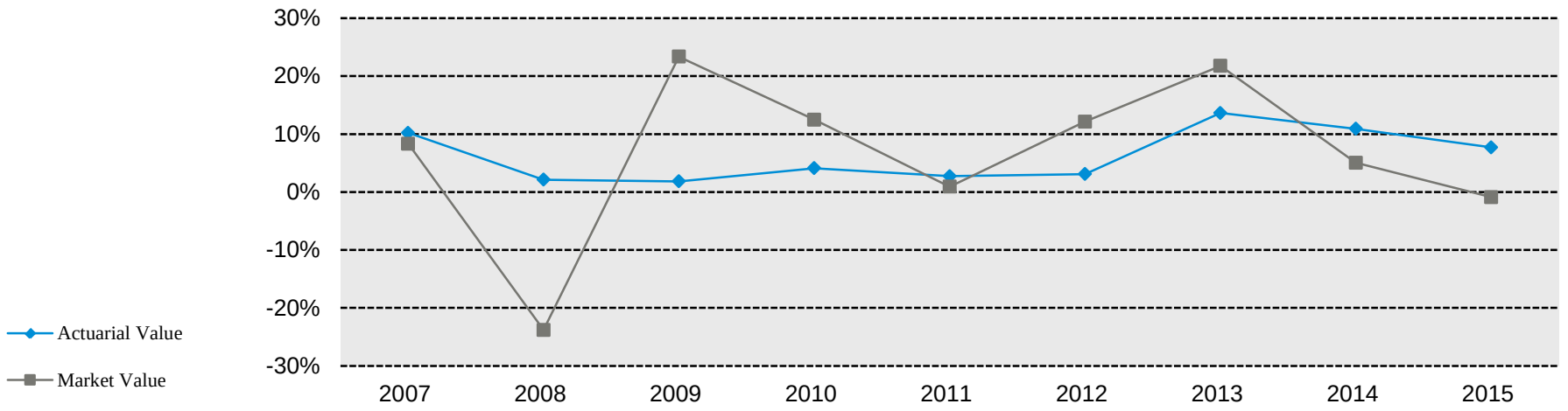
Year Ended December 31	Actuarial Value Investment Return		Market Value Investment Return	
	Amount	Percent	Amount	Percent
2007	$112,054,000	10.20%	$93,927,000	8.32%
2008	25,070,000	2.14	-281,583,000	-23.79
2009	21,198,000	1.84	200,095,000	23.35
2010	46,207,000	4.11	125,667,000	12.47
2011	30,332,424	2.73	9,935,000	0.93
2012	33,418,150	3.10	123,662,000	12.13
2013	143,949,477	13.63	236,967,000	21.76
2014	124,992,222	10.92	64,143,000	5.05
2015	92,696,727	7.71	-11,187,000	-0.88
Total	$629,918,000		$561,626,000	
	Five-year average return	7.61%		7.41%
	Nine-year average return	6.21%		5.68%

Subsection B described the actuarial asset valuation method that gradually takes into account fluctuations in the market value rate of return. The effect of this is to stabilize the actuarial rate of return, which contributes to leveling pension plan costs.

This chart illustrates how this leveling effect has actually worked over the years 2007 - 2015.

CHART 12

Market and Actuarial Rates of Return for Years Ended December 31, 2007 - 2015



Other Experience

There are other differences between the expected and the actual experience that appear when the new valuation is compared with the projections from the previous valuation. These include:

- the extent of turnover among the participants,
- retirement experience (earlier or later than expected),
- mortality (more or fewer deaths than expected),
- the number of disability retirements,
- salary increases different than assumed, and
- administrative expenses difference than assumed.

The net loss from this other experience for the year ended December 31, 2015 amounted to $5,931,004, which is 0.4% of the actuarial accrued liability.

D. RECOMMENDED CONTRIBUTION

The amount of annual contribution required to fund the Plan is comprised of an employer normal cost payment and a payment on the unfunded actuarial accrued liability.

As of January 1, 2015 the remaining outstanding bases were replaced with a single 15-year closed, level dollar amortization and a $5.0 million credit balance was established. New bases are established each year to recognize experience gains and losses, plan and assumption changes and method changes. The credit balance creates a buffer for differences between the budget and the recommended contribution. Since the 2015 actual contributions were less than the recommended contribution, the credit balance is now $3.7 million.

The chart compares this valuation's recommended contribution with the prior valuation.

CHART 13

Recommended Contribution

	Year Beginning January 1	
	2016	2015
	Amount	Amount
1. Total normal cost	$3,051,042	$3,415,289
2. Administrative expenses	600,000	700,000
3. Expected employee contributions	-1,587,067	-1,874,944
4. Employer normal cost: (1) + (2) + (3)	$2,063,975	$2,240,345
5. Actuarial accrued liability	1,677,001,812	1,654,412,161
6. Actuarial value of assets	1,256,554,200	1,240,742,474
7. Unfunded actuarial accrued liability: (5) - (6)	$420,447,612	$413,669,687
8. Payment on unfunded actuarial accrued liability	46,624,128	44,587,450
9. Total recommended contribution: (4) + (8), adjusted for timing*	$50,493,163	$48,586,172

**Recommended contributions are assumed to be paid at the middle of every month.*

The contribution requirements as of January 1, 2016 are based on all of the data described in the previous sections, the actuarial assumptions described in Section 4, and the Plan provisions adopted at the time of preparation of the Actuarial Valuation. They include all changes affecting future costs, adopted benefit changes, actuarial gains and losses and changes in the actuarial assumptions.

Reconciliation of Recommended Contribution

The chart below details the changes in the recommended contribution from the prior valuation to the current year's valuation.

The chart reconciles the contribution from the prior valuation to the amount determined in this valuation.

CHART 14

Reconciliation of Recommended Contribution from January 1, 2015 to January 1, 2016

Recommended Contribution as of January 1, 2015	$48,586,172
Effect of change in administrative expense assumption	-103,707
Effect of change in interest assumption	1,522,194
Effect of investment gain	-13,219
Effect of other gains and losses on accrued liability	655,358
Net effect of other changes	-153,635
Total change	$1,906,991
Recommended Contribution as of January 1, 2016	$50,493,163

EXHIBIT A

Table of Plan Coverage

Category	Year Ended December 31 2015	2014	Change From Prior Year
Active participants in valuation:			
Number	478	576	-17.0%
Average age	52.9	52.6	N/A
Average years of service	22.5	22.0	N/A
Total payroll	$27,819,954	$32,828,504	-15.3%
Average payroll	58,201	56,994	2.1%
Account balances	37,486,956	43,286,154	-13.4%
Vested terminated participants	27	27	0.0%
Retired participants:			
Number in pay status	2,647	2,622	1.0%
Average age	67.1	66.7	N/A
Average monthly benefit	$3,440	$3,332	3.2%
Disabled participants:			
Number in pay status	156	162	-3.7%
Average age	63.7	63.0	N/A
Average monthly benefit	$2,201	$2,123	3.7%
Beneficiaries in pay status:			
Number in pay status	407	395	3.0%
Average age	75.6	75.7	N/A
Average monthly benefit	$2,084	$2,020	3.2%
Terminated non-vested participants	204	214	-4.7%

EXHIBIT B

Participants in Active Service as of December 31, 2015
By Age, Years of Service, and Average Payroll

	Years of Service							
Age	**Total**	**10-14**	**15 - 19**	**20 - 24**	**25 - 29**	**30 - 34**	**35 - 39**	**40 & over**
35 - 39	3	- -	3	- -	- -	- -	- -	- -
	$44,787	- -	$44,787	- -	- -	- -	- -	- -
40 - 44	58	2	47	9	- -	- -	- -	- -
	54,258	$63,227	54,685	$50,037	- -	- -	- -	- -
45 - 49	119	- -	43	47	28	1	- -	- -
	58,390	- -	49,519	62,868	$65,252	$37,266	- -	- -
50 - 54	129	2	38	50	35	3	1	- -
	58,703	38,858	51,679	61,925	63,445	41,463	$90,029	- -
55 - 59	90	1	29	24	28	6	2	- -
	57,647	40,657	53,050	54,818	63,055	72,249	47,222	- -
60 - 64	57	- -	10	23	11	7	5	1
	60,386	- -	54,266	61,926	60,858	69,605	55,950	$38,617
65 - 69	14	- -	- -	6	4	- -	3	1
	67,103	- -	- -	58,402	56,812	- -	94,972	76,867
70 & over	8	- -	1	2	3	1	1	- -
	55,973	- -	50,543	54,353	40,491	59,611	107,449	- -
Total	478	5	171	161	109	18	12	2
	$58,201	$48,965	$52,218	$60,251	$62,673	$63,444	$71,383	$57,742

EXHIBIT C

Reconciliation of Participant Data

	Active Participants	Vested Former Participants	Disableds	Retired Participants	Beneficiaries	Total
Number as of January 1, 2015	576	27	162	2,622	395	3,782
Transfers to DC Plan	-1	N/A	N/A	N/A	N/A	-1
Terminations	0	0	N/A	N/A	N/A	0
Retirements	-98	-1	N/A	99	N/A	0
New disabilities	-2	0	2	N/A	N/A	0
Return to work	3	0	0	-3	N/A	0
Deaths	0	0	-8	-70	-29	-107
New beneficiaries	N/A	N/A	N/A	N/A	42	42
Lump sum payoffs	0	-1	0	0	0	-1
Child benefit expired	N/A	N/A	0	0	-1	-1
Data adjustments	0	2	0	-1	0	1
Number as of January 1, 2016	478	27	156	2,647	407	3,715

EXHIBIT D

Summary Statement of Income and Expenses on an Actuarial Value Basis

	Year Ended December 31, 2015		Year Ended December 31, 2014	
Net assets at actuarial value at the beginning of the year		$1,240,742,474		$1,173,841,252
Contribution income:				
Employer contributions	$47,230,000		$57,529,000	
Employee contributions	1,868,000		2,129,000	
Less administrative expenses	-581,000		-705,000	
Net contribution income		48,517,000		58,953,000
Investment income:				
Investment income	-$5,975,000		$69,351,000	
Adjustment toward market value	103,883,726		60,849,222	
Less investment fees	-5,212,000		-5,208,000	
Net investment income		92,696,726		124,992,222
Total income available for benefits		$141,213,726		$183,945,222
Less benefit payments:				
Benefit payments	-$122,538,000		-$116,891,000	
Prior period payments*	-2,096,000		0	
Transfers to DC Plan	-693,000		0	
Refunds of contributions	-75,000		-153,000	
Net benefit payments		-$125,402,000		-$117,044,000
Change in reserve for future benefits		$15,811,726		$66,901,222
Net assets at actuarial value at the end of the year		$1,256,554,200		$1,240,742,474

** Settlement in the case of Charlotte Burnett, et al. v. Trustees of the Fulton County Employees Retirement System, et al.*

EXHIBIT E

Summary Statement of Income and Expenses on a Market Value Basis

	Year Ended December 31, 2015		Year Ended December 31, 2014	
Net assets at market value at the beginning of the year		$1,306,027,000		$1,299,975,000
Contribution income:				
Employer contributions	$47,230,000		$57,529,000	
Employee contributions	1,868,000		2,129,000	
Less administrative expenses	-581,000		-705,000	
Net contribution income		48,517,000		58,953,000
Investment income:				
Investment income	-$5,975,000		$69,351,000	
Less investment fees	-5,212,000		-5,208,000	
Net investment income		-11,187,000		64,143,000
Total income available for benefits		$37,330,000		$123,096,000
Less benefit payments:				
Benefit payments	-$122,538,000		-$116,891,000	
Prior period payments*	-2,096,000		0	
Transfers to DC Plan	-693,000		0	
Refunds of contributions	-75,000		-153,000	
Net benefit payments		-$125,402,000		-$117,044,000
Change in reserve for future benefits		-$88,072,000		$6,052,000
Net assets at market value at the end of the year		$1,217,955,000		$1,306,027,000

** Settlement in the case of Charlotte Burnett, et al. v. Trustees of the Fulton County Employees Retirement System, et al.*

EXHIBIT F

Summary Statement of Plan Assets

	Year Ended December 31, 2015		Year Ended December 31, 2014	
Cash and cash equivalents		$45,087,000		$28,354,000
Accounts receivable and funds held in escrow		4,065,000		7,596,000
Prepaid pension benefits		10,650,000		10,234,000
Investments:				
Corporate investments	$665,341,000		$716,219,000	
International mutual funds and global fixed income	238,096,000		247,425,000	
U.S. Treasury and Agency obligations	135,478,000		146,974,000	
Commingled equity funds	102,525,000		132,785,000	
Real estate investments and mortgage-backed securities	22,339,000		23,371,000	
Municipal bonds	4,327,000		4,733,000	
Total investments at market value		1,168,106,000		1,271,507,000
Total assets		$1,227,908,000		$1,317,664,000
Less accounts payable:				
Due to brokers for securities purchased	-$7,815,000		-$11,624,000	
Funds held for others	-2,109,000		-13,000	
Other liabilities	-29,000		0	
Total accounts payable		-$9,953,000		-$11,637,000
Net assets at market value		$1,217,955,000		$1,306,027,000
Net assets at actuarial value		$1,256,554,200		$1,240,742,474

EXHIBIT G

Development of the Fund Through December 31, 2015

Year Ended December 31	Employer Contributions	Employee Contributions	Net Investment Return*	Administrative Expenses	Benefit Payments	Actuarial Value of Assets at End of Year
2007	$37,802,000	$5,479,000	$112,054,000	$528,000	$77,534,000	$1,193,724,000
2008	32,750,000	4,900,000	25,070,000	501,000	80,644,000	1,175,299,000
2009	38,502,000	4,187,000	21,198,000	479,000	88,921,000	1,149,786,000
2010	37,226,000	3,602,000	46,207,000	546,000	91,904,000	1,144,371,000
2011	42,170,000	3,225,000	30,332,424	554,000	114,776,000	1,104,778,624
2012	45,936,000	2,827,000	33,418,150	578,000	104,202,000	1,082,179,774
2013	56,244,000	2,533,000	143,949,477	617,000	110,448,000	1,173,841,252
2014	57,529,000	2,129,000	124,992,222	705,000	117,044,000	1,240,742,474
2015	47,230,000	1,868,000	92,696,726	581,000	125,402,000	1,256,554,200

** Net of investment fees*

EXHIBIT H

Development of Unfunded Actuarial Accrued Liability for Year Ended December 31, 2015

1. Unfunded actuarial accrued liability at beginning of year		$413,669,687
2. Normal cost at beginning of year		4,115,289
3. Total contributions		-49,098,000
4. Interest		
(a) For whole year on (1) + (2)	$32,169,443	
(b) For half year on (3)	-1,709,544	
(c) Total interest		30,459,899
5. Expected unfunded actuarial accrued liability		$399,146,875
6. Changes due to:		
(a) Experience gains and losses	$5,811,375	
(b) Change in assumptions	15,489,362	
(c) Total changes		21,300,737
7. Unfunded actuarial accrued liability at end of year		$420,447,612

EXHIBIT I-A

Table of Amortization Bases

Type*	Date Established	Initial Years	Initial Amount	Annual Payment*	Years Remaining	Outstanding Balance
Fresh start *	01/01/2015	15	$418,669,687	$44,367,522	14	$402,886,570
Actuarial experience loss	01/01/2016	15	5,811,375	615,659	15	5,811,375
Change in assumptions	01/01/2016	15	15,489,362	1,640,948	15	15,489,362
Total				$46,624,128		$424,187,307

** As of January 1, 2015, the prior amortization bases were eliminated and a new, 15-year amortization of the unfunded liability was established, with a $5 million credit balance.*

EXHIBIT I-B

Development of Credit Balance

1.	Unfunded actuarial accrued liability as of January 1, 2016	$420,447,612
2.	Sum of outstanding bases as of January 1, 2016	424,187,307
3.	Credit balance as of January 1, 2016 [(2) - (1)]	$3,739,695

EXHIBIT J

Benefit Payment Projection

We have determined the anticipated benefits to be paid from the Plan over the next ten years. This projection is provided to help the Pension Board assess the future liquidity needs of the Fund, and to help determine whether the Plan should plan to sell assets to pay participants' benefits or to restructure the debt and equity allocations.

This is a mature and closed fund, and thus it is expected that the contributions paid into the Plan each year will not be sufficient to pay all of the annual benefit requirements and expenses. Investment income is required to make up the difference. The Board needs to ensure that interest and dividend income, along with maturing fixed income investments and the sale of equity investments, are at a sufficient level to provide existing and emerging benefit payments to participants and beneficiaries. This matter should be considered by the investment managers in designing their strategies.

The projection is shown below. The assumptions for retirement and mortality are the same rates shown in Section 4 of the report.

Projected Benefit Payments, 2016 - 2025

Year Ended December 31	Number of Benefit Recipients	Benefits to Active Participants	Benefits to Non-Active Participants	Total Benefits Projected
2016	3,210	$6,549,012	$122,722,928	$129,271,940
2017	3,218	8,313,615	124,183,119	132,496,734
2018	3,208	9,878,520	125,565,957	135,444,477
2019	3,188	11,386,402	126,688,051	138,074,453
2020	3,159	12,806,574	127,584,175	140,390,749
2021	3,122	13,989,702	128,299,696	142,289,398
2022	3,076	15,107,516	128,770,864	143,878,380
2023	3,020	16,213,051	129,055,533	145,268,584
2024	2,960	17,050,918	129,038,825	146,089,743
2025	2,892	17,741,023	128,762,010	146,503,033

EXHIBIT K

Definitions of Pension Terms

The following list defines certain technical terms for the convenience of the reader:

Assumptions or Actuarial Assumptions: The estimates on which the cost of the Plan is calculated including:

(a) Investment return — the rate of investment yield that the Plan will earn over the long-term future;

(b) Mortality rates — the death rates of employees and pensioners; life expectancy is based on these rates;

(c) Retirement rates — the rate or probability of retirement at a given age;

(d) Withdrawal rates — the rates at which employees of various ages are expected to leave employment for reasons other than death, disability, or retirement.

Normal Cost: The amount of contributions required to fund the benefit allocated to the current year of service.

Actuarial Accrued Liability For Actives: The value of all projected benefit payments for current members less the portion that will be paid by future normal costs.

Actuarial Accrued Liability For Pensioners: The single-sum value of lifetime benefits to existing pensioners. This sum takes account of life expectancies appropriate to the ages of the pensioners and the interest that the sum is expected to earn before it is entirely paid out in benefits.

Unfunded Actuarial Accrued Liability: The extent to which the actuarial accrued liability of the Plan exceeds the assets of the Plan. There is a wide range of approaches to paying off the unfunded actuarial accrued liability, from meeting the interest accrual only to amortizing it over a specific period of time.

Amortization of the Unfunded Actuarial Accrued Liability: Payments made over a period of years equal in value to the Plan's unfunded actuarial accrued liability.

Investment Return: The rate of earnings of the Plan from its investments, including interest, dividends and capital gain and loss adjustments, computed as a percentage of the average value of the fund. For actuarial purposes, the investment return often reflects a smoothing of the capital gains and losses to avoid significant swings in the value of assets from one year to the next.

EXHIBIT I

Summary of Actuarial Valuation Results

The valuation was made with respect to the following data supplied to us:			
1.	Retired participants as of the valuation date (including 407 beneficiaries in pay status)		3,210
2.	Participants inactive during year ended December 31, 2015 with vested rights		27
3.	Participants active during the year ended December 31, 2015		478
	Fully vested	477	
	Not vested	1	
4.	Terminated non-vested participants due a refund as of December 31, 2015		204
The actuarial factors as of the valuation date are as follows:			
1.	Normal cost, including administrative expenses		$3,651,042
2.	Actuarial accrued liability		1,677,001,812
	Retired participants and beneficiaries	$1,481,428,010	
	Inactive participants with vested rights	4,424,086	
	Active participants	190,807,776	
	Terminated non-vested	341,940	
3.	Actuarial value of assets ($1,217,955,000 at market value as reported by the County)		1,256,554,200
4.	Unfunded actuarial accrued liability		$420,447,612
The determination of the recommended contribution is as follows:			
1.	Total normal cost		$3,051,042
2.	Administrative expenses		600,000
3.	Expected employee contributions		-1,587,067
4.	Employer normal cost: (1) + (2) + (3)		$2,063,975
5.	Payment on unfunded actuarial accrued liability		46,624,128
6.	Total recommended contribution: (4) + (5), adjusted for timing		$50,493,163

EXHIBIT II

History of Employer Contributions

Plan Year Ended December 31	Actuarially Determined Employer Contributions (ADEC)*	Actual Contributions	Percentage Contributed
2007	$38,895,000	$37,802,000	97.2%
2008	33,836,000	32,750,000	96.8%
2009	43,008,000	38,502,000	89.5%
2010	36,639,000	37,226,000	101.6%
2011	45,049,000	42,170,000	93.6%
2012	51,199,000	45,936,000	89.7%
2013	52,881,747	56,244,000	106.4%
2014	55,255,317	57,529,000	104.1%
2015	48,586,172	47,230,000	97.2%
2016	50,493,163	--	--

**Prior to 2015, this amount was the Annual Required Contribution (ARC)*

EXHIBIT III

Schedule of Funding Progress

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	UAAL as a Percentage of Covered Payroll [(b) - (a)] / (c)
01/01/2007	$1,116,451,000	$1,331,658,000	$215,207,000	83.84%	$98,882,000	217.64%
01/01/2008	1,193,724,000	1,383,842,000	190,118,000	86.26%	80,266,000	236.86%
01/01/2009	1,175,299,000	1,441,124,000	265,824,000	81.55%	78,184,000	340.00%
01/01/2010	1,149,786,000	1,478,136,000	328,350,000	77.79%	67,184,000	488.73%
01/01/2011	1,144,371,000	1,567,306,000	422,934,000	73.02%	57,888,000	730.61%
01/01/2012	1,104,779,000	1,604,463,000	499,684,000	68.86%	49,277,000	1,014.03%
01/01/2013	1,082,179,774	1,577,864,746	495,684,972	68.59%	42,622,389	1,162.97%
01/01/2014	1,173,841,252	1,608,975,544	435,134,292	72.96%	36,257,860	1,200.11%
01/01/2015	1,240,742,474	1,654,412,161	413,669,687	75.00%	32,828,504	1,260.09%
01/01/2016	1,256,554,200	1,677,001,812	420,447,612	74.93%	27,819,954	1,511.32%

EXHIBIT IV

Funded Ratio

A critical piece of information regarding the Plan's financial status is the funded ratio. This ratio compares the actuarial value of assets to the actuarial accrued liabilities of the Plan as calculated. High ratios indicate a well-funded plan with assets sufficient to cover the plan's actuarial accrued liabilities. Lower ratios may indicate recent changes to benefit structures, funding of the plan below actuarial requirements, poor asset performance, or a variety of other factors.

The chart below depicts a history of the funded ratios for this plan, on both a market value (MVA) and an actuarial value (AVA) basis.

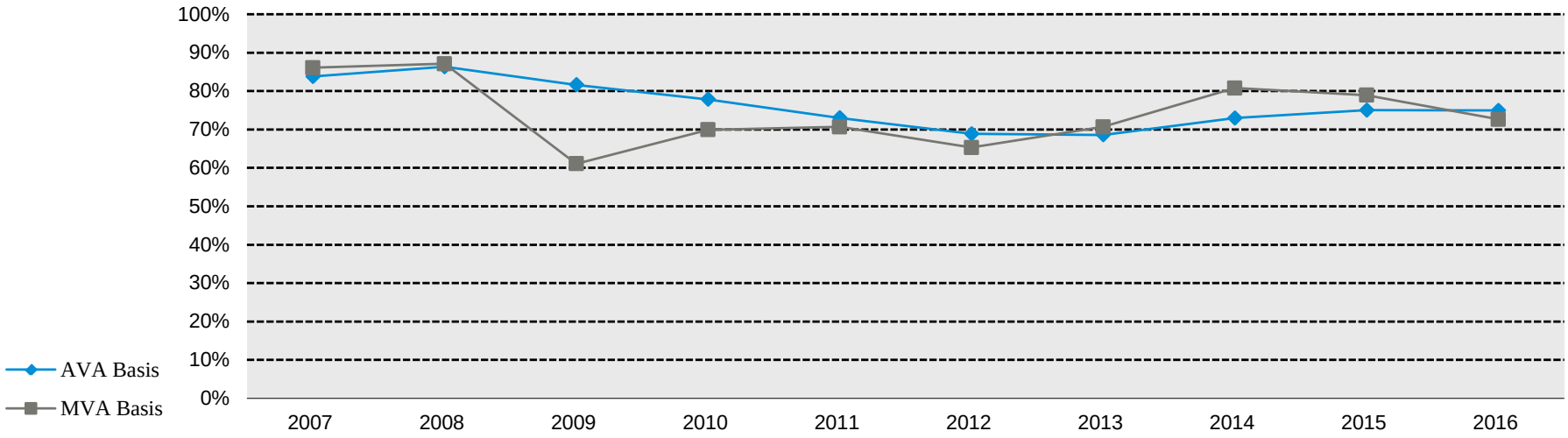


EXHIBIT V

Actuarial Assumptions and Actuarial Cost Method

Rationale for Demographic and Noneconomic Assumptions:

The information and analysis used in selecting each demographic assumption that has a significant effect on this actuarial valuation is shown in the Experience Study Report for the five-year period ended December 31, 2011. Current data is reviewed in conjunction with each annual valuation. Based on professional judgment, no assumption changes are warranted at this time.

Mortality Rates:

Healthy: RP-2000 Combined Mortality Table with Blue Collar adjustment, projected to 2019 using Scale AA, further loaded by 30% for Males and 10% for Females

Disabled: RP-2000 Disabled Retiree Mortality Table, projected to 2019 using Scale AA

The RP-2000 mortality tables, projected to the 2016 valuation date reasonably reflect the projected mortality experience of the Plan as of the measurement date. The additional projection of three years is a provision made for future mortality improvement.

Termination Rates before Retirement:

	Rate (%)					
	Mortality		Disability		Withdrawal*	
Age	Male	Female	Non-Public Safety	Public Safety	Non-Public Safety	Public Safety
35	0.13	0.05	0.08	0.20	4.00	5.50
40	0.15	0.07	0.18	0.30	4.00	6.75
45	0.18	0.11	0.29	0.41	6.00	8.55
50	0.22	0.16	0.69	0.81	8.25	12.55
55	0.38	0.26	1.00	1.12	9.75	16.55
60	0.79	0.49	0.93	1.05	11.00	20.55

** Withdrawal rates cut off at 50, or first eligibility for retirement if later*

Retirement Rates:

Rates for Unreduced Pension

Non-Public Safety		Public Safety	
Age	Retirement Probability (%)	Age	Retirement Probability (%)
First eligibility	26.50	First eligibility	60.00
Ages through 69	26.50	Ages through 64	40.00
70	100.00	65	100.00

Rates for Reduced Pension*

Non-Public Safety		Public Safety	
Age	Retirement Probability (%)	Age	Retirement Probability (%)
50	8.25	50	12.55
51	8.60	51	13.35
52	9.00	52	14.15
53	9.25	53	14.95
54	9.50	54	15.75
55	9.75	55	16.55
56	10.00	56	17.35
57	10.25	57	18.15
58	10.50	58	18.95
59	10.75	59	19.75
60	11.00	60	20.55
61	11.25	61	21.35
62	11.50	62	22.15
63	11.75	63	22.95
64	12.00	64	23.75

** The retirement rates for reduced pensions apply only until eligibility for normal retirement occurs. From that point forward, the rates for unreduced pensions apply.*

Retirement Age for Inactive Vested Participants:	Earliest unreduced retirement age
Unknown Data for Participants:	Same as those exhibited by participants with similar known characteristics. If not specified, participants are assumed to be male.
Percent Married:	75% of males and 50% of females
Age of Spouse:	Females four years younger than males
Benefit Election:	80% of participants who retire with reduced benefits take an annuity, and 95% of participants who retire with unreduced benefits take an annuity. The remainder are assumed to transfer to the County's defined contribution plan.
Disability Retirements:	60% of disability retirements are assumed to be in the line of duty
Net Investment Return:	7.60% The net investment return assumption was chosen by the Pension Board Finance Committee. The Committee received input from the actuary, including a long-term range estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the actuarial analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes as provided by Segal Rogerscasey, as well as the Plan's target asset allocation.
Salary Increases:	3.00% per year The salary scale assumption was set with the guidance of the Pension Board Finance Committee, with input from the County regarding future expectations.
Final Average Earnings and Years of Service Loads:	The following loads were applied in the computation of final average earnings or years of service used to compute benefits: ➢ A 3.6% load applied to final average earnings to adjust for a 27th pay period in some years ➢ A 5.5% load applied to final average earnings to adjust for unused vacation time ➢ A 1.0% load applied to years of service to adjust for unused sick leave

Interest on Employee Contributions:	4.0%
Administrative Expenses:	Prior year actual amount rounded to the nearest $100,000 ($600,000 for 2016)
Actuarial Value of Assets:	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the market value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method. Entry Age is the age at the time the participant commenced employment. Normal Cost and Actuarial Accrued Liability are calculated on an individual basis and are allocated by salary.
Changes in Assumptions:	The following change in assumptions is reflected in this valuation: ➢ The net investment return assumption was changed from 7.70% to 7.60%. ➢ The administrative expense assumption decreased from $700,000 to $600,000 as a result of lower actual expenses in 2015.

EXHIBIT VI

Summary of Plan Provisions

This exhibit summarizes the major provisions of the Retirement System included in the valuation. It is not intended to be, nor should it be interpreted as, a complete statement of all plan provisions.

Plan Year	January 1 through December 31
Plan Status	Closed to new entrants as of July 1, 1999
Normal Retirement	
Age and Service Requirement	Earlier of age 65 with 10 years of Service, age 60 with 15 years of Service, age 55 with 30 years of Service, or 10 years of service and the sum of age and service equals 79 or more
	For elected officials or department heads, if termination is the result of resignation, failure to be reelected, or abolishment of office, age 55 with 10 years of service
Amount	*1991 Plan* - 2.00% of Final Average Compensation times years of Creditable Service.
	Enhanced Plan - 2.25% of Final Average Compensation times years of Creditable Service for the first five years, plus 2.50% of Final Average Compensation per year of Credited Service in excess of five years.
	The maximum benefit is 75% of Final Average Compensation. The minimum benefit is $460 per month.
Final Average Compensation	The average of the Participant's earnings during the three years of employment that produce the highest average. For elected officials and department heads, Final Average Compensation is not less than the average earnings during the 12 months prior to termination.

Early Retirement:	
Age Requirement	None
Service Requirement	15 years of Credited Service
Amount	Normal pension accrued, reduced 0.5% for the first 60 months and 0.25% for the remaining months preceding employee's normal retirement date. The benefit of a Peace Officer with 25 years will be reduced by 0.25% for each month that commencement precedes age 55. The minimum benefit is $300 per month.
Disability:	
Age Requirement	None
Requirement	10 years of Credited Service or disabled in the line of duty
Amount	Normal pension accrued. For Peace Officers, the benefit assumes 35 years of service.
Vesting:	
Age Requirement	None
Service Requirement	10 years of Credited Service
Amount	Normal pension accrued
Death Benefit:	
Amount	A percentage of the amount the Participant either a) was receiving at death, b) would have received had he retired with a normal retirement benefit at death, or c) would have received as a vested pension benefit had he survived to age 65. 75% for the Enhanced Plan, 1991 Plan, and 1982 Plan 50% for other Plans A beneficiary of a Peace Officer who dies in the line of duty receives the amount of compensation that the deceased would have received from the employer for one year from the date of death. After the first year, 75% of the greater of the participant's salary at death or the salary paid to a six-year police officer.

Participant Contributions:	Enhanced Plan - 6% of pay 1991 and 1982 Plans – 5% of pay Other Plans – 0% to 4% of pay
Interest on Contributions	Employee contributions are credited with an annual interest rate of 4%.
Cost of Living Adjustments	3% per year for the Enhanced, 1991 and 1992 Plans if CPI is greater than zero
Changes in Plan Provisions:	There have been no changes in plan provisions since the last valuation.

EXHIBIT 1

General Information – "Financial Statements", Note Disclosures and Required Supplementary Information for a Single Employer Pension Plan

Plan membership.

At December 31, 2014, pension plan membership consisted of the following:

Inactive employees or beneficiaries currently receiving benefits	3,179
Inactive employees entitled to but not yet receiving benefits*	27
Active employees	576
Total	3,782

**Excludes terminated participants due a refund of employee contributions*

At December 31, 2015, pension plan membership consisted of the following:

Inactive employees or beneficiaries currently receiving benefits	3,210
Inactive employees entitled to but not yet receiving benefits*	27
Active employees	478
Total	3,838

** Excludes terminated participants due a refund of employee contributions.*

The System was closed to new entrants in 1999.

Benefits provided. See Section 4 Exhibit VI for a summary of plan provisions.

Contributions. The Plan is subject to minimum funding standards of the Public Retirement Systems Standards Law (Georgia Code Section 47-20-10). The System establishes an actuarially determined contribution as recommended by an independent actuary. The actuarially determined contribution is the estimated amount necessary to finance the costs of benefits earned by employees during the year, plus an additional amount to finance any unfunded accrued liability.

EXHIBIT 2

Net Pension Liability

The components of the net pension liability of the System at December 31, 2015 were as follows:	
Total pension liability	$1,677,001,812
Plan fiduciary net position	1,217,955,000
System's net pension liability	$459,046,812
Plan fiduciary net position as a percentage of the total pension liability	72.63%

Actuarial assumptions. The total pension liability was determined by an actuarial valuation as of December 31, 2015, using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	3.00%
Salary increases	3.00%
Investment rate of return	7.60%, including inflation, net of pension plan investment expense

Mortality rates for non-disabled lives were based on the RP-2000 Healthy Annuitant Mortality Table for Males or Females, as appropriate, projected to 2019 using on Scale AA, further loaded by 30% for Males and 10% for Females. For disabled lives, mortality rates were based on the RP-2000 Disabled Retiree Mortality Table, projected to 2019 using Scale AA.

The actuarial assumptions used in the December 31, 2015 valuation were based on the results of an experience study for the period January 1, 2007 to December 31, 2011.

The long-term expected rate of return on pension plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of pension plan investment expense and inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. Best estimates of arithmetic real rates of return for each major asset class included in the pension plan's target asset allocation as of December 31, 2015 are summarized in the following table:

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Domestic equity	48.00%	6.75%
International equity	20.00%	7.45%
Emerging market equity	5.00%	9.85%
Core fixed income	17.00%	1.75%
High yield fixed income	5.00%	4.95%
Hedge fund	5.00%	3.75%
Total	100.00%	

Discount rate: The discount rate used to measure the total pension liability was 7.60%. The projection of cash flows used to determine the discount rate assumed plan member contributions will be made at the current contribution rates (as a percentage of pay) and that County contributions will be made equal to the actuarially determined contribution. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability. For the prior year, the discount rate was 7.70%.

Sensitivity of the net pension liability to changes in the discount rate. The following presents the net pension liability of the County, calculated using the discount rate of 7.60%, as well as what the System's net pension liability would be if it were calculated using a discount rate that is one-percentage-point lower (6.60%) or one-percentage-point higher (8.60%) than the current rate:

	1% Decrease (6.60%)	Current Discount (7.60%)	1% Increase (8.60%)
System's net pension liability	$630,017,716	$459,046,812	$314,102,619

EXHIBIT 3

Schedules of Changes in System's Net Pension Liability – Last Ten Fiscal Years

	2015	2014	2013	2012	2011
Total pension liability					
			(Historical information prior to implementation of GASB 67/68 is not required)		
Service cost	$3,678,266	$4,291,080			
Interest	122,561,759	120,935,376			
Change of benefit terms	0	0			
Differences between expected and actual experience	6,262,264	21,902,129			
Changes of assumptions	15,489,362	15,352,032			
Benefit payments, including refunds of employee contributions	-125,402,000	-117,044,000			
Net change in total pension liability	$22,589,651	$45,436,617			
Total pension liability – beginning	$1,654,412,161	$1,608,975,544			
Total pension liability – ending (a)	1,677,001,812	1,654,412,161			
Plan fiduciary net position					
Contributions – employer	$47,230,000	$57,529,000			
Contributions – employee	1,868,000	2,129,000			
Net investment income	-11,187,000	64,143,000			
Benefit payments, including refunds of employee contributions	-125,402,000	-117,044,000			
Administrative expense	-581,000	-705,000			
Other	0	0			
Net change in plan fiduciary net position	-$88,072,000	$6,052,000			
Plan fiduciary net position – beginning	$1,306,027,000	$1,299,975,000			
Plan fiduciary net position – ending (b)	1,217,955,000	1,306,027,000			
System's net pension liability – ending (a) – (b)	$459,046,812	$348,385,161			
Plan fiduciary net position as a percentage of the total pension liability	72.63%	78.94%			
Covered employee payroll	$27,819,954	$32,828,504			
System's net pension liability as percentage of covered employee payroll	1,650.06%	1,061.23%			

Notes to Schedule:
Benefit changes: There have been no changes in benefit provisions since GASB 67 implementation.
Change of Assumptions: The discount rate assumption was changed from 7.80% to 7.70% as of December 31, 2014, and from 7.70% to 7.60% as of December 31, 2015.

EXHIBIT 4

Pension Expense and Deferred Outflows/Inflows of Resources Related to Pensions

A. Pension expense for the year ended December 31, 2015

Service cost	$3,678,266	
Interest on TPL	122,561,759	
Employee contributions	(1,868,000)	
Administrative expenses	581,000	
Expected return on assets	(97,604,007)	
Expensed portion of current year period differences between expected and actual experience in TPL	6,262,264	
Expensed portion of current year period assumption changes	15,489,362	
Current year plan changes	- -	
Expensed portion of current year period differences between projected and actual investment earnings	21,758,203	
Current year recognition of deferred inflows and outflows established in prior years	- -	
Total expense		$70,858,847

B. Deferred outflows/inflows of resources related to pensions

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	- -	- -
Net difference between projected and actual earnings on pension plan investments	$87,032,804	- -
Assumption changes	- -	- -
Total	$87,032,804	- -

EXHIBIT 4 (continued)

Pension Expense and Deferred Outflows/Inflows of Resources Related to Pensions (continued)

C. Projected recognition of deferred outflows/(inflows)

	Year Established	Outstanding Balance at January 1, 2015	Amount Recognized During FYE December 31, 2015	Outstanding Balance at December 31, 2015	Deferred Outflows/(Inflows) Recognized in Future Years				
					2016	2017	2018	2019	2020 and thereafter
Fiscal Year Outflows									
Investment loss	2015	$108,791,007	$21,758,203	$87,032,804	$21,758,201	$21,758,201	$21,758,201	$21,758,201	- -
Liability loss	2015	6,262,264	6,262,264	0					
Assumption change	2015	15,489,362	15,489,362	0					
Total Outflows		$130,542,633	$43,509,829	$87,032,804	$21,758,201	$21,758,201	$21,758,201	$21,758,201	- -
Fiscal Year Inflows		- -	- -	- -	- -	- -	- -	- -	- -
Total Inflows		- -	- -	- -	- -	- -	- -	- -	- -
Total		$130,542,633	$43,509,829	$87,032,804	$21,758,201	$21,758,201	$21,758,201	$21,758,201	- -

Note: In accordance with Paragraph 71 of GASB Statement 68, the difference between projected and actual earnings on investments is recognized over a closed five-year period. The difference between expected and actual total pension liability experience and the assumption changes are each recognized over a closed period equal to the average of the expected remaining service lives of all employees who are provided with pensions through the pension plan (active employees and inactive employees), determined as of the beginning of the measurement period. For 2015, the period is one year, and therefore those changes are fully recognized immediately.

EXHIBIT 5

Schedule of System's Contribution – Last Ten Fiscal Years

Year Ended December 31	Actuarially Determined Contributions	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered-Employee Payroll	Contributions as a Percentage of Covered Employee Payroll
2006	(Historical information prior to implementation of GASB 67/68 is not required.)				
2007					
2008					
2009					
2010					
2011					
2012					
2013					
2014	$55,255,317	$57,529,000	-$2,273,683	$32,828,504	175.24%
2015	48,586,172	47,230,000	1,356,172	27,819,954	169.77%

EXHIBIT 6

Notes to Required Supplementary Information

Valuation date	Actuarial determined contribution rates are calculated as of January 1
Methods and used assumptions to determine contribution rates:	
Actuarial cost method	Entry age normal
Amortization method	Closed level dollar for remaining unfunded liability
Remaining amortization period	Remaining amortization period varies for the bases, with a net effective amortization period of 14 years
Asset valuation method	Market value of assets less unrecognized returns in each of the last five years. Unrecognized return is equal to the difference between the actual market return and the expected return on the actuarial value, and is recognized over a five-year period, further adjusted, if necessary, to be within 20% of the market value.
Actuarial assumptions:	
Investment rate of return	7.60% The net investment return assumption is a long-term estimate derived from historical data, current and recent market expectations, and professional judgment. As part of the analysis, a building block approach was used that reflects inflation expectations and anticipated risk premiums for each of the portfolio's asset classes, as well as the System's target asset allocation.
Inflation rate	3.00%
Projected salary increases	3.00%
Cost of living adjustments	3.00%

Retirement Rates:

Rates for Unreduced Pension

Non-Public Safety		Public Safety	
Age	Retirement Probability (%)	Age	Retirement Probability (%)
First eligibility	26.50	First eligibility	60.00
Ages through 69	26.50	Ages through 64	40.00
70	100.00	65	100.00

Rates for Reduced Pension*

Non-Public Safety		Public Safety	
Age	Retirement Probability (%)	Age	Retirement Probability (%)
50	8.25	50	12.55
51	8.60	51	13.35
52	9.00	52	14.15
53	9.25	53	14.95
54	9.50	54	15.75
55	9.75	55	16.55
56	10.00	56	17.35
57	10.25	57	18.15
58	10.50	58	18.95
59	10.75	59	19.75
60	11.00	60	20.55
61	11.25	61	21.35
62	11.50	62	22.15
63	11.75	63	22.95
64	12.00	64	23.75

** The retirement rates for reduced pensions apply only until eligibility for normal retirement occurs. From that point forward, the rates for unreduced pensions apply.*

Mortality Rates:

Healthy:	RP-2000 Combined Mortality Table with Blue Collar adjustment, projected to 2019 using Scale AA, further loaded by 30% for Males and 10% for Females
Disabled:	RP-2000 Disabled Retiree Mortality Table, projected to 2019 using Scale AA
	The RP-2000 mortality tables, projected to the 2016 valuation date reasonably reflect the projected mortality experience of the Plan as of the measurement date. The additional projection of three years is a provision made for future mortality improvement.

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