

**CITY OF FORT PIERCE**  
**RETIREMENT AND BENEFIT SYSTEM**  
FIFTY-EIGHTH ANNUAL ACTUARIAL VALUATION REPORT  
FOR THE YEAR ENDING SEPTEMBER 30, 2016

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March 14, 2017

The City Commission  
and Retirement Board  
City of Fort Pierce Retirement and Benefit System  
Fort Pierce, Florida

Dear City Commission and Retirement Board:

The results of the September 30, 2016 annual actuarial valuation of the City of Fort Pierce Retirement and Benefit System are presented in this report. The purpose of the valuation was to measure the System's funding progress and to determine the employer contribution rates for the 2017-2018 fiscal year. The computed contribution rates shown on page B-1 are best viewed as the minimum contribution rates that comply with the Board's funding policy. Users of this report should be aware that contributions made at that rate do not guarantee benefit security. Until the plan is fully funded, we encourage the plan sponsor to contribute in excess of the computed contribution rate.

We believe that the ideal circumstance is for a plan to be fully funded at relatively low levels of risk. Therefore, we encourage a review of investment and other sources of risk as the plan approaches full funding.

Disclosures under the Governmental Accounting Board (GASB) Statements No. 67 and No. 68 were issued in a separate report.

This report may be distributed to parties other than the System only in its entirety and only with the permission of the Board. This report should not be relied on for any purpose other than those described above. It was prepared at the request of the Board and is intended for use by the Retirement and Benefit System and those designated or approved by the Board. This report may be provided to parties other than the System only in its entirety and only with the permission of the Board. GRS is not responsible for unauthorized use of this report.

The signing actuaries are independent of the plan sponsor.

The valuation was based upon information, furnished by the City, concerning Retirement System benefits, financial transactions, and individual members, terminated members, retirees and beneficiaries. Data was checked for internal and year-to-year consistency, but was not audited by us. As a result, we are unable to assume responsibility for the accuracy or completeness of the data provided.

Future actuarial measurements may differ significantly from those presented in this report due to such factors as experience differing from that anticipated by actuarial assumptions, changes in plan provisions, actuarial assumptions/methods or applicable law. Due to the limited scope of this assignment, we did not perform an analysis of the potential range of future measurements.

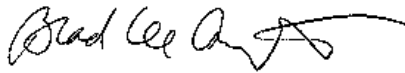
The City Commission  
and Retirement Board  
March 14, 2017  
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This report was prepared using assumptions set by the Retirement Board (except mortality) as described in Section D. By the Retirement Board's acceptance of this report, assumptions first used for the September 30, 2016 actuarial valuation will be deemed adopted.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. We certify that the information contained in this report is accurate and fairly presents the actuarial position of the City of Fort Pierce Retirement and Benefit System as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

Brad Lee Armstrong and Jeffrey T. Tebeau are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Respectfully submitted,



Brad Lee Armstrong, ASA, EA, FCA, MAAA



Jeffrey T. Tebeau, ASA, EA, MAAA

BLA/JTT:bd

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**SECTION A**

SUMMARY OF VALUATION RESULTS  
AND CERTIFICATION

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# **SUMMARY OF VALUATION RESULTS**

## **SEPTEMBER 30, 2016**

### **FUNDING OBJECTIVE**

The basic funding objective of the Retirement and Benefit System is to avoid transfer of the cost of benefit obligations between generations of taxpayers. This objective is implemented by contributions sufficient to:

- Pay for costs allocated to the current year on account of service rendered by participants in the current year (Normal Cost).
- Pay for costs allocated to prior years on account of service rendered by participants in prior years (Unfunded Actuarial Accrued Liability) over a maximum 30-year period.

The annual actuarial valuation measures the relationship between Retirement and Benefit System obligations and assets and determines the contribution rates for the ensuing year. Several of the shortest amortization bases were combined in order to moderate scheduled contribution rate changes.

### **FUNDING PROGRESS INDICATORS**

The September 30, 2016 actuarial valuation indicates that the actuarial accrued liabilities of the Retirement and Benefit System are 89% funded by valuation assets. This is a decrease from last year's funded ratio of 93%. Although not historically referred to, the ratio of the market value of assets to the Actuarial Accrued Liabilities is 88% which is lower than last year.

### **TRENDS TO MONITOR**

The funding value of assets currently exceeds the market value of assets by approximately \$2 million. If gains from investment returns above the 7.75% assumed or gains from other sources do not emerge, this will create upward pressure on contribution requirements and a coinciding downward pressure on the funded ratios in subsequent valuation years.

# **SUMMARY OF VALUATION RESULTS**

## **SEPTEMBER 30, 2016**

### **ASSUMPTION CHANGES**

House Bill 1309 of 2015 mandates the use of the Florida Retirement System (FRS) mortality tables for the valuation dates beginning with the September 30, 2016 actuarial valuation. The FRS uses versions of the RP-2000 tables and projection scale BB in a reasonable manner. These mortality tables produce life expectancies that are longer for males and females.

Both forward-looking asset return and inflation expectations have declined significantly in the past few years. The probability of exceeding an 8.0% rate of return is less than 35% in each year based on GRS Capital Market Assumptions Modeler. Therefore, we have lowered the assumed rate of return to 7.75%. If the economic assumption expectations continue to decline, we may have to revisit this as soon as next year.

In recent years, salary increases have been lower than expected. To reflect a muted expectation, the merit and seniority salary increase rates were reduced for General and Utilities Authority and the wage inflation assumption was reduced from 4.5% to 4.0% for all groups. Furthermore, the rates of withdrawal were increased for all groups to reflect higher than expected turnover experience.

The loads on service related retirements were reduced for General members from 4% to 3.5% and for Utilities Authority members from 3.5% to 3% as part of the ongoing recognition of Senate Bill 1128 of 2011.

The total impact of the assumption changes increased the actuarial accrued liability by \$10.1 million and increased the employer contribution requirement by \$0.6 million.

# SUMMARY OF VALUATION RESULTS

## SEPTEMBER 30, 2016

### OBSERVED EXPERIENCE

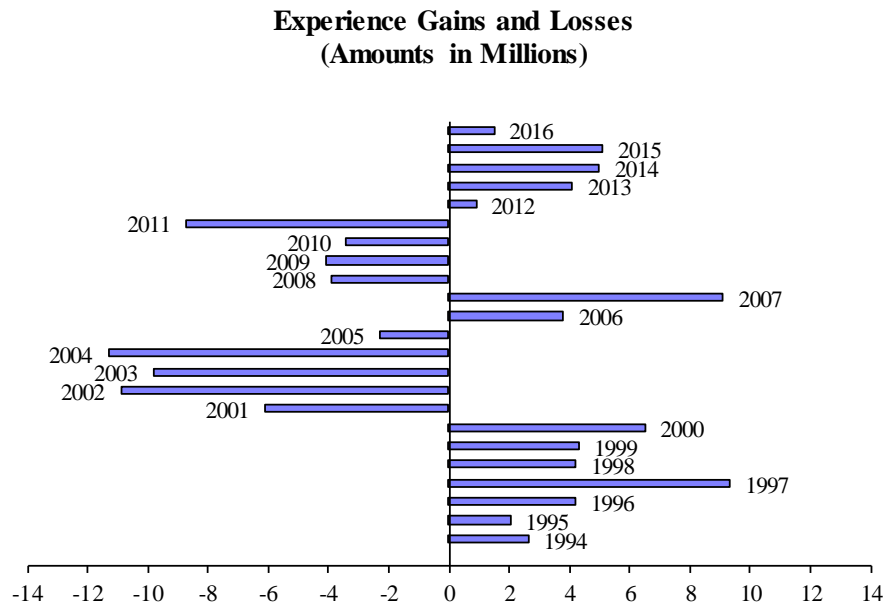
While the investment return on market value was 9.65%, the recognized rate of investment return was 8.89% due to averaging investment experience over the last 4 years. The recognized investment return was greater than 8.0% assumed return for fiscal year 2016. Note that each year's investment experience gain (loss) is spread over four years in equal dollar installments to reduce the effect of market volatility on contribution rates.

Demographic experience varied among the divisions. The principal deviations from projected experience were:

- 10.1% average pay increases across all the divisions vs. 5.9% expected (unfavorable)
- 10-year average payroll growths were less than the 4.0% assumed (unfavorable for unfunded liability contribution rates)
- Reductions in active member workforce for Police (favorable for normal cost; unfavorable for unfunded liability)

The net effect of the preceding experience factors was an aggregate experience gain of \$1,460,257.

Year-to-year experience variations are expected and normal in the operation of a retirement system as members vary their activities and economic conditions change. The expectation is that the favorable years and unfavorable years will tend to cancel over 5 to 10 year periods.



Derivation of the current year's gain is located on Page B-3.



## SUMMARY OF VALUATION RESULTS SEPTEMBER 30, 2016

### VALUATION RESULTS - CONTRIBUTION REQUIREMENT

The percent-of-payroll contribution requirements for the 2017-2018 fiscal year are:

	<b>General</b>	<b>Utilities Authority</b>	<b>Police</b>
Members			
-Bargaining	5.16 %	6.16 %	5.16 %
-Non-Bargaining	5.16	6.16	5.16
Employer for			
-Bargaining	17.35 %	17.92 %	11.98 %
-Non-Bargaining	17.35	17.92	11.98
-Illustrative	\$1,639,755	\$2,439,936	\$799,048

For comparison, the percent-of-payroll contribution requirements for the 2016-2017 fiscal year based on last year's valuation are:

	<b>General</b>	<b>Utilities Authority</b>	<b>Police</b>
Members			
-Bargaining	5.16 %	6.16 %	5.16 %
-Non-Bargaining	5.16	6.16	5.16
Employer for			
-Bargaining	14.89 %	16.23 %	14.61 %
-Non-Bargaining	14.89	16.23	14.61
-Illustrative	\$1,200,633	\$2,098,810	\$997,089

Comparative contribution information is shown on page B-2. Composition of the current contribution rates is shown on page B-1.

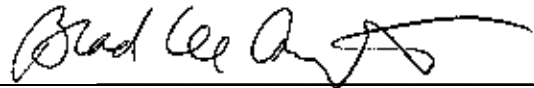
## SUMMARY OF VALUATION RESULTS SEPTEMBER 30, 2016

### **COST-OF-LIVING ADJUSTMENT (COLA)**

Section 13 - 43 of the City's Code of Ordinances provides for a COLA if the investment return of the fund exceeds that required to satisfy the actuarial interest assumption, which did happen this year. In addition, the cumulative value of any COLA's granted since 1999 may not exceed the cumulative net actuarial gains since 1999. Page B-11 shows the cumulative value of COLA's and net actuarial gains/(losses) since 1999. The present balance is (\$30,378,996). So even though the recognized rate of investment return for the last fiscal year of 8.89% exceeded the actuarial interest assumption of 8%, no COLA could be provided under Section 13 - 43 until the Retirement and Benefit System's future actuarial gains exceed \$30,378,996 plus interest. Given the cumulative net actuarial loss balance, this COLA provision is not likely to operate for the indefinite future.

### **CERTIFICATION**

This actuarial valuation was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation report. All known events or trends which may require a material increase in plan costs or required contribution rates have been taken into account in the valuation report.



Brad Lee Armstrong, ASA, FCA, EA, MAAA  
Enrolled Actuary No. 14-5614

## OTHER OBSERVATIONS

### **General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Contributions and Funded Status**

Given the System's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the Retirement and Benefit System earning 7.75% on the Market Value of Assets), it is expected that:

1. The employer normal cost is sufficient to cover the cost of benefits accruing each year;
2. The Unfunded Actuarial Accrued Liabilities (UAAL) will continue to be amortized according to the schedules on pages B7-9, but may not be completely paid off in the definite future; and
3. The funded status of the Retirement and Benefit System will continue to increase gradually towards a 100% funded ratio.

### **Limitations of Funded Status Measurements**

Unless otherwise indicated, a funded status measurement presented in this report is based upon the Actuarial Accrued Liability (AAL) and the Funding Value of Assets (FVA). Unless otherwise indicated, with regard to any funded status measurements presented in this report:

1. The measurement is inappropriate for assessing the sufficiency of Retirement System assets to cover the estimated cost of settling the Retirement and Benefit System's benefit obligations, for example: transferring the liability to an unrelated third party in a market value type transaction.
2. The measurement is dependent upon the Actuarial Cost Method which, in combination with the Retirement System's amortization policy, affects the timing and amounts of future contributions. The amounts of future contributions will most certainly differ from those assumed in this report due to future actual experience differing from assumed experience based upon the actuarial assumptions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. Even though the funded status is over 100%, the Retirement and Benefit System would still require future normal cost contributions (i.e., contributions to cover the cost of active membership accruing an additional year of service credit).
3. The measurement would produce a different result if the Market Value of Assets (MVA) were used instead of the FVA, unless the MVA is used in the measurement.

## **OTHER OBSERVATIONS**

### **Limitations of Project Scope**

Actuarial standards do not require the actuary to evaluate the ability of the plan sponsor or other contributing entities to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

### **Risks to Future Employer Contribution Requirements**

There are ongoing risks to future employer contribution requirements to which the Retirement and Benefit System is exposed, such as:

- Actual and Assumed Investment Rate of Return
- Actual and Assumed Mortality Rates
- Amortization Policy

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## **SECTION B**

### VALUATION RESULTS

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**CONTRIBUTIONS TO FINANCE BENEFITS OF THE  
RETIREMENT AND BENEFIT SYSTEM  
FOR THE PLAN YEAR BEGINNING OCTOBER 1, 2017  
TO BE CONTRIBUTED DURING THE FISCAL YEAR  
BEGINNING OCTOBER 1, 2017**

<b>Contributions for</b>	<b>Contributions Expressed as Percents of Active Member Payroll</b>		
	<b>General Members</b>	<b>Utilities Authority</b>	<b>Police Members</b>
Normal Cost			
Service pensions	11.44 %	10.52 %	12.68 %
Disability pensions	0.46	0.42	0.92
Death-in-service pensions	0.51	0.50	0.37
Deferred service pensions	2.26	2.30	1.87
Refunds of member contributions	0.76	0.91	0.55
Total Normal Cost	15.43	14.65	16.39
Unfunded Actuarial Accrued Liability <sup>(1)</sup>			
Retired members and beneficiaries	0.00	0.00	0.00
Active and vested terminated members	3.98	6.52	0.00
Total Unf'd. Actuarial Accrued Liability	3.98	6.52	0.00
Administrative Expenses	0.79	0.79	0.79
Total Unadjusted Computed Contribution	20.20	21.96	17.18
Adjustments to Computed Contribution			
FS 112.64 (5) Compliance	2.31	2.12	1.13
Full funding credit <sup>(2)</sup>	0.00	0.00	(1.17)
Total Adjustments	2.31	2.12	(0.04)
Total Adjusted Contribution Requirement <sup>(3)</sup>	22.51	24.08	17.14
Member portion	5.16	6.16	5.16
Employer portion	17.35	17.92	11.98

(1) Financing period schedules begin on page B-7.

(2) This is a temporary credit toward the contribution requirement; see page B-9.

(3) FS 112.64 (2) states that "the total contributions to the retirement system or plan shall be sufficient to meet the normal cost of the retirement system or plan and to amortize the unfunded liability." Therefore, the Total Adjusted Contribution for the System shall be no less than Total Normal Cost for the System including the Administrative Expense Load.

FS 112.64 requires employer contributions to be deposited not less frequently than quarterly. Member contributions, which are in addition to the Employer contributions, must be deposited immediately after each pay period.

## RECOMMENDED AND ACTUAL CONTRIBUTIONS COMPARATIVE STATEMENT

Fiscal Date	Valuation Date	Percentage-of-Payroll Contributions			Dollar Contributions @	
		General Members	Utilities Authority	Police Members	Proj. Funding Requirement	Actual \$
79/80 (b)	9/78	7.75 %	8.05 %	10.21 %	\$ 700,500	\$ 785,821
84/85	9/83	7.61	7.82	9.59	1,189,618	1,349,378
89/90	9/88	6.02	7.76	9.17	1,779,600	2,021,209
94/95	9/93	4.99	6.80	4.77	1,846,977	2,386,067
99/00 (b)	9/98 #	0.51	1.20	1.45	709,194	982,054
00/01 (b)	9/99	0.00	0.26	0.00	801,012	1,195,351
01/02 (b)	9/00	0.00	0.26	0.00	906,649	2,158,784
02/03 (b)	9/01	2.91	1.10	0.00	2,048,079	2,271,079
03/04	9/02	4.67	3.23	1.38	2,893,397	3,610,663
04/05	9/03	6.15	4.93	3.76	3,948,626	5,634,357
05/06	9/04	8.01	6.23	6.76	6,283,117	8,975,380
06/07	9/05	11.05	11.94	14.14	3,624,157	4,114,963
07/08 (b)	9/06	11.59	11.01	14.88	3,939,766	4,082,846
08/09 (b)	9/07	9.71	10.06	12.26	3,517,935	3,580,089
09/10	9/08	10.36	10.67	12.79	3,964,443	3,377,350
10/11	9/09	11.06	11.86	12.97	3,999,560	3,181,447
11/12 (b)	9/10	12.59	14.08	13.51	3,937,037	3,566,751
12/13 (b)	9/11	16.50	18.51	15.83	4,860,538	4,266,803
13/14 (b)	9/12	16.20	17.41	15.33	4,676,221	4,356,127
14/15	9/13	14.61	16.81	13.76	4,242,676	4,093,268
15/16	9/14	15.03	16.30	13.76	4,196,009	4,211,311
16/17 (b)	9/15	14.89	16.23	14.61	4,296,532	
<b>17/18 (a)</b>	<b>9/16</b>	<b>14.09</b>	<b>15.12</b>	<b>13.05</b>	<b>4,301,830</b>	
<b>17/18 (b)</b>	<b>9/16</b>	<b>17.35</b>	<b>17.92</b>	<b>11.98</b>	<b>4,878,739</b>	

\* Prior to 9/30/96 the minimum employer contribution required in accordance with Sec. 21.3 of the Retirement and Benefit System Ordinance was 7.60% for General and Utilities Authority, 9.61% for Police.

@ Actual Employer contributions are determined by applying the Employer's contribution rate to the emerging payroll. Projected funding requirement is derived from the City portion of the contribution rates on page B-1. The payroll was increased by a factor of 1.0816 (1.04<sup>2</sup>) to reflect projected payroll growth to the beginning of the fiscal year during which the contribution will be made. Prior to the valuation date of 9/30/05, dollar contributions included Fire members.

(a) Before changes in benefit provisions and/or actuarial assumptions and cost methods.

(b) After changes in benefit provisions and/or actuarial assumptions and cost methods.

# Prior to the 9/98 actuarial valuation reimbursement of investment expenses (approx. 2% of payroll) were included in the contribution requirement. The plan was amended 4/98 to allow payment of investment expenses out of investment income.

**EXPERIENCE GAIN/(LOSS)  
YEAR ENDED SEPTEMBER 30, 2016**

	<b>Divisions</b>			<b>Total</b>
	<b>General Members</b>	<b>Utilities Authority</b>	<b>Police Members</b>	
<b>DERIVATION</b>				
(1) UAAL* at start of year	\$3,904,406	\$8,368,562	\$2,089,399	\$14,362,367
(2) Employer normal cost for year	970,794	1,178,283	934,247	3,083,324
(3) Employer contributions	1,241,098	2,038,699	931,515	4,211,311
(4) Interest accrued: .08 x [(1) + ½ [(2) – (3)]]	301,540	635,068	167,261	1,103,869
(5) Expected UAAL before changes: [(1) + (2) - (3) + (4)]	3,935,642	8,143,214	2,259,392	14,338,249
(6) Effect of assumption changes	3,523,964	4,976,532	1,395,375	9,895,871
(7) Effect of cost method changes/ accounting and timing differences	0	0	0	0
(8) Effect of benefit changes	0	0	0	0
(9) Expected UAAL after changes	7,459,606	13,119,746	3,654,767	24,234,120
(10) Actual UAAL	7,101,139	13,298,556	2,374,168	22,773,863
(11) Gain/(loss): (9) - (10)	358,467	(178,810)	1,280,599	1,460,257

\* UAAL represents *Unfunded Actuarial Accrued Liability*.



## DEVELOPMENT OF FUNDING VALUE OF RETIREMENT SYSTEM ASSETS

Year Ended September 30:	2013	2014	2015	2016	2017	2018	2019
A. Funding Value Beginning of Year	\$147,618,123	\$157,144,811	\$167,451,348	\$177,623,515			
B. Market Value End of Year	168,762,698	179,120,149	174,633,807	183,206,017			
C. Market Value Beginning of Year	154,199,397	168,762,698	179,120,149	174,633,807			
D. Non-Investment Net Cash Flow	(6,119,220)	(6,582,335)	(7,470,414)	(7,899,981)			
E. Investment Income							
E1. Market Total: B - C - D	20,682,521	16,939,786	2,984,072	16,472,191			
E2. Amount for Immediate Recognition (8.0%)	11,564,681	12,308,292	13,097,291	13,893,882			
E3. Amount for Phased-In Recognition: E1 - E2	9,117,840	4,631,494	(10,113,219)	2,578,309			
F. Phased-In Recognition of Investment Income							
F1. Current Year: 0.25 x E3	2,279,460	1,157,874	(2,528,305)	644,577			
F2. First Prior Year	3,636,260	2,279,460	1,157,874	(2,528,305)	\$ 644,577		
F3. Second Prior Year	(2,493,016)	3,636,260	2,279,460	1,157,874	(2,528,305)	\$ 644,577	
F4. Third Prior Year	<u>658,523</u>	<u>(2,493,014)</u>	<u>3,636,261</u>	<u>2,279,460</u>	<u>1,157,872</u>	<u>(2,528,304)</u>	<u>\$ 644,578</u>
F5. Total Recognized Investment Gain	4,081,227	4,580,580	4,545,290	1,553,606	(725,856)	(1,883,727)	644,578
G. Funding Value End of Year: A + D + E2 + F5	157,144,811	167,451,348	177,623,515	185,171,022			
H. Difference between Market & Funding Value	11,617,887	11,668,801	(2,989,708)	(1,965,005)			
I. Recognized Rate of Return	10.82%	10.98%	10.78%	8.89%			
J. Market Value Return	13.68%	10.24%	1.70%	9.65%			

The Funding Value of Assets recognizes assumed investment income (Line E2) fully each year. Differences between actual and assumed investment income (Line E3) are phased-in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, the Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, the Funding Value of Assets will tend to be greater than Market Value. If assumed rates are exactly realized for 3 consecutive years, it will become equal to Market Value.

**FUNDING INDICATORS # – HISTORICAL COMPARISON**  
**(\$ AMOUNTS IN THOUSANDS)**

Valuation Date	Indicator (1)	Indicator (2)			Indicator (3)		
	Gain/ (Loss)	Valuation Assets	Funded AAL*	Funded Ratio	Unfunded AAL	Member Payroll	Ratio to Payroll
9/30/93	\$ 4,360	\$ 75,833	\$ 72,883	104 %	\$ (2,950)	\$23,602	(12) %
9/30/94	2,627	83,023	77,060	108	(5,963)	24,137	(25)
9/30/95 (b)	2,031	92,515	86,560	107	(5,955)	26,174	(23)
9/30/96 (b)	4,188	103,164	93,874	110	(9,290)	27,529	(34)
9/30/97	9,324	119,224	100,121	119	(19,103)	29,986	(64)
9/30/98 (b)	4,181	132,975	109,210	122	(23,765)	30,296	(78)
9/30/99 (b)	4,315	146,903	120,514	122	(26,389)	31,688	(83)
9/30/00 (b)	6,465	162,020	129,969	125	(32,051)	33,312	(96)
9/30/01 (b)	(6,086)	165,023	137,067	120	(27,955)	35,600	(79)
9/30/02 (b)	(10,908)	167,050	149,437	112	(17,610)	37,037	(48)
9/30/03	(9,845)	168,943	162,127	104	(6,816)	40,313	(17)
9/30/04	(11,328)	171,558	186,671	92	15,113	43,544	35
9/30/05	(2,296)	185,776	216,534	86	30,758	48,880	63
9/30/06 (b)	3,801	120,062	130,861	92	10,800	30,532	35
9/30/07 (b)	9,087	135,944	138,610	98	2,666	30,984	9
9/30/08	(3,888)	143,467	150,475	95	7,008	32,952	21
9/30/09	(4,060)	147,094	158,755	93	11,661	31,016	38
9/30/10 (b)	(3,429)	148,691	164,865	90	16,174	26,779	60
9/30/11 (b)	(8,690)	142,463	167,683	85	25,220	25,744	98
9/30/12 (b)	854	147,618	171,745	86	24,127	25,842	93
9/30/13	4,086	157,145	177,505	89	20,360	25,199	81
9/30/14	4,960	167,451	182,407	92	14,956	25,150	59
9/30/15 (b)	5,140	177,624	191,986	93	14,362	25,475	56
<b>9/30/16 (a)</b>	<b>1,460</b>	<b>185,171</b>	<b>198,049</b>	<b>93</b>	<b>12,878</b>	<b>27,493</b>	<b>47</b>
<b>9/30/16 (b)</b>	<b>1,460</b>	<b>185,171</b>	<b>207,945</b>	<b>89</b>	<b>22,774</b>	<b>27,493</b>	<b>83</b>

# Excludes Fire after 9/05 valuation date.

\* Actuarial Accrued Liabilities.

(a) Before changes in benefit provisions and/or actuarial assumptions.

(b) After changes in benefit provisions and/or actuarial assumptions.

**UNFUNDED ACTUARIAL ACCRUED LIABILITY**  
**(\$ AMOUNTS IN THOUSANDS)\***

	September 30, 2016			September 30, 2015		
	General Members	Utilities Authority	Police Members	General Members	Utilities Authority	Police Members
A. Actuarial present value of future benefits	\$71,900	\$106,529	\$58,812	\$65,870	\$98,687	\$59,329
B. Actuarial present value of future normal costs	9,240	12,620	7,436	8,494	13,040	10,366
C. Actuarial accrued liability	62,660	93,909	51,376	57,376	85,647	48,962
D. Actuarial value of assets	55,559	80,610	49,002	53,472	77,279	46,873
E. Unfunded actuarial accrued liability	7,101	13,299	2,374	3,904	8,369	2,089
F. Funded Ratio	88.7%	85.8%	95.4%	93.2%	90.2%	95.7%

\* Totals may be off due to rounding.

**SOURCES AND FINANCING OF  
UNFUNDED ACTUARIAL ACCRUED LIABILITY  
GENERAL MEMBERS**

Year Established	Initial Years	Years Remaining	Unf'd. Act. Accr. Liab.		Amortization Factor	Amortization Payment*	% of Payroll Contribution*
			Initial Amount	Current Amount			
<b>Initial Unfunded</b>							
1981	34	5	\$ 2,135,178	\$ 412,235	4.1730	\$ 98,787	1.13 %
<b>Experience Changes</b>							
1991	30	5	(8,308)	(4,072)	4.1730	(976)	(0.01)
1992	30	6	(260,310)	(148,110)	4.8364	(30,624)	(0.35)
1993	30	7	(1,200,305)	(764,517)	5.4521	(140,223)	(1.60)
1994	30	8	(298,407)	(207,302)	6.0236	(34,415)	(0.39)
1995	30	9	(571,245)	(425,683)	6.5539	(64,951)	(0.74)
1996	30	10	(328,506)	(258,680)	7.0461	(36,712)	(0.42)
1997	30	11	(1,697,188)	(1,395,125)	7.5029	(185,945)	(2.13)
1998	30	12	(1,095,283)	(930,761)	7.9268	(117,419)	(1.34)
1999	30	13	(888,248)	(773,954)	8.3203	(93,020)	(1.06)
2000	30	14	(1,366,921)	(1,212,781)	8.6854	(139,634)	(1.60)
2001	30	15	1,108,179	998,539	9.0243	110,650	1.27
2002	30	16	2,074,314	1,888,513	9.3388	202,222	2.31
2003	30	17	2,097,459	1,921,029	9.6307	199,469	2.28
2004	30	18	2,013,373	1,847,878	9.9016	186,624	2.14
2005	30	19	208,003	190,658	10.1530	18,778	0.21
2006	30	20	(1,561,550)	(1,425,157)	10.3863	(137,215)	(1.57)
2007	30	21	(3,153,776)	(2,858,245)	10.6029	(269,572)	(3.09)
2008	30	22	1,535,312	1,378,379	10.8039	127,582	1.46
2009	30	23	1,306,244	1,159,180	10.9904	105,472	1.21
2010	30	24	301,258	263,698	11.1635	23,622	0.27
2011	30	25	3,140,943	2,707,224	11.3241	239,067	2.74
2012	30	26	(171,717)	(145,484)	11.4732	(12,680)	(0.15)
2013	30	27	(1,386,129)	(1,152,620)	11.6116	(99,265)	(1.14)
2014	30	28	(1,482,476)	(1,255,711)	11.7400	(106,960)	(1.22)
2015	30	29	(2,209,363)	(1,401,515)	11.8592	(118,180)	(1.35)
2016	30	30	(358,467)	(358,467)	11.9698	(29,948)	(0.34)
<b>Benefit Changes</b>							
1996	30	10	(126,041)	(99,251)	7.0461	(14,086)	(0.16)
1998	30	12	(4,204)	(3,573)	7.9268	(451)	(0.01)
2000	30	14	416,125	369,201	8.6854	42,508	0.49
2004	30	18	603,572	553,959	9.9016	55,946	0.64
2005	30	19	2,422,727	2,220,704	10.1530	218,724	2.50
2006	30	20	1,820,155	1,661,174	10.3863	159,938	1.83
2010	30	24	421,454	368,909	11.1635	33,046	0.38
2011	30	25	(604,106)	(520,688)	11.3241	(45,980)	(0.53)
2012	30	26	(520,387)	(440,887)	11.4732	(38,428)	(0.44)
<b>Assumption Changes</b>							
1995	30	9	822,391	612,834	6.5539	93,507	1.07
2001	30	15	(571,357)	(514,830)	9.0243	(57,049)	(0.65)
2011	30	25	154,468	133,138	11.3241	11,757	0.13
2015	30	29	1,398,986	1,187,336	11.8592	100,120	1.15
2016	30	30	3,523,964	3,523,964	11.9698	294,405	3.37
<b>Totals</b>				<b>\$7,101,139</b>		<b>\$548,491</b>	<b>6.29 %</b>

\* Actual wage growth over the past 10 years has been (1.37)%, versus the 4.5% assumed. FS 112 requires use of the 10-year average if less than assumed. Because the 10-year average is less than 0, 0 has been used in the above calculation as required.

**SOURCES AND FINANCING OF  
UNFUNDED ACTUARIAL ACCRUED LIABILITY  
UTILITIES AUTHORITY MEMBERS**

Year Established	Initial Years	Years Remaining	Unfd. Act. Accr. Liab.		Amortization Factor	Amortization Payment*	% of Payroll Contribution*
			Initial Amount	Current Amount			
<b>Initial Unfunded</b>							
1981	34	3	\$3,349,127	\$ 738,073	2.7294	\$ 270,415	2.15 %
<b>Experience Changes</b>							
1989	30	3	280,129	(30,600)	2.7294	(11,211)	(0.09)
1990	30	4	(130,266)	138,636	3.5287	39,288	0.31
1991	30	5	407,412	(104,721)	4.2785	(24,476)	(0.19)
1992	30	6	(238,416)	(205,424)	4.9817	(41,236)	(0.33)
1993	30	7	(388,969)	(851,205)	5.6413	(150,887)	(1.20)
1994	30	8	(1,360,632)	(660,113)	6.2600	(105,449)	(0.84)
1995	30	9	(978,978)	(715,355)	6.8403	(104,579)	(0.83)
1996	30	10	(974,186)	(738,759)	7.3846	(100,040)	(0.79)
1997	30	11	(940,560)	(1,815,826)	7.8952	(229,991)	(1.83)
1998	30	12	(2,192,535)	(2,188,308)	8.3741	(261,320)	(2.08)
1999	30	13	(2,534,640)	(1,018,109)	8.8232	(115,390)	(0.92)
2000	30	14	(1,141,977)	(1,195,740)	9.2445	(129,346)	(1.03)
2001	30	15	(1,309,143)	1,486,185	9.6397	154,173	1.22
2002	30	16	1,593,737	2,707,062	10.0103	270,426	2.15
2003	30	17	2,859,829	2,574,488	10.3580	248,551	1.97
2004	30	18	2,692,574	1,514,231	10.6841	141,728	1.13
2005	30	19	1,574,647	217,602	10.9900	19,800	0.16
2006	30	20	225,846	(2,593,168)	11.2768	(229,955)	(1.83)
2007	30	21	(2,695,199)	(3,044,967)	11.5459	(263,726)	(2.09)
2008	30	22	(3,178,605)	1,696,299	11.7983	143,774	1.14
2009	30	23	1,783,264	2,140,980	12.0351	177,895	1.41
2010	30	24	2,272,126	2,485,358	12.2571	202,768	1.61
2011	30	25	2,668,679	4,311,021	12.4654	345,839	2.75
2012	30	26	(1,001,517)	(905,940)	12.6608	(71,555)	(0.57)
2013	30	27	(1,332,212)	(1,184,589)	12.8440	(92,229)	(0.73)
2014	30	28	(2,039,760)	(1,991,856)	13.0159	(153,033)	(1.22)
2015	30	29	(1,615,435)	(1,579,273)	13.1771	(119,850)	(0.95)
2016	30	30	178,810	178,810	13.3283	13,416	0.11
<b>Benefit Changes</b>							
1996	30	10	1,797,497	1,411,836	7.3846	191,185	1.52
1998	30	12	(6,868)	(5,930)	8.3741	(708)	(0.01)
2000	30	14	217,608	198,756	9.2445	21,500	0.17
2005	30	19	5,714,128	5,505,569	10.9900	500,964	3.98
2007	30	21	879,772	842,784	11.5459	72,994	0.58
2011	30	25	(859,973)	(790,058)	12.4654	(63,380)	(0.50)
2012	30	26	(837,844)	(757,887)	12.6608	(59,861)	(0.48)
<b>Assumption Changes</b>							
1990	30	4	(71,195)	(24,226)	3.5287	(6,865)	(0.05)
1995	30	9	1,262,801	927,293	6.8403	135,563	1.08
2001	30	15	(1,106,750)	(1,032,062)	9.6397	(107,064)	(0.85)
2011	30	25	695,546	638,999	12.4654	51,262	0.41
2015	30	29	2,088,919	2,042,158	13.1771	154,978	1.23
2016	30	30	4,976,532	4,976,532	13.3283	373,381	2.97
<b>Totals</b>				<b>\$13,298,556</b>		<b>\$1,087,749</b>	<b>8.64 %</b>

\* Actual wage growth over the past 10 years has been 1.07%, versus the 4.5% assumed. FS 112 requires use of the 10-year average if less than assumed. This has been used in the above calculation as required.

**SOURCES AND FINANCING OF  
UNFUNDED ACTUARIAL ACCRUED LIABILITY  
POLICE MEMBERS**

Year Established	Initial Years	Years Remaining	Unfd. Act. Accr. Liab.		Amortization Factor	Amortization Payment*	% of Payroll Contribution*
			Initial Amount	Current Amount			
<b>Initial Unfunded</b>							
1981	34	5	\$ (92,516)	\$ (344,193)	4.1730	\$ (82,482)	(1.34) %
<b>Experience Changes</b>							
1991	30	5	(203,783)	(143,689)	4.1730	(34,433)	(0.56)
1992	30	6	(212,982)	(168,986)	4.8364	(34,940)	(0.57)
1993	30	7	(924,672)	(827,705)	5.4521	(151,813)	(2.46)
1994	30	8	(461,122)	(428,568)	6.0236	(71,148)	(1.15)
1995	30	9	(631,047)	(620,100)	6.5539	(94,615)	(1.53)
1996	30	10	(985,977)	(1,011,800)	7.0461	(143,597)	(2.33)
1997	30	11	(2,131,299)	(2,260,863)	7.5029	(301,332)	(4.89)
1998	30	12	769,031	836,379	7.9268	105,512	1.71
1999	30	13	(1,200,250)	(1,328,972)	8.3203	(159,727)	(2.59)
2000	30	14	(597,465)	(669,509)	8.6854	(77,084)	(1.25)
2001	30	15	578,886	655,272	9.0243	72,612	1.18
2002	30	16	1,258,164	1,432,227	9.3388	153,363	2.49
2003	30	17	1,317,638	1,502,620	9.6307	156,024	2.53
2004	30	18	2,033,822	2,315,573	9.9016	233,858	3.79
2005	30	19	(40,822)	(46,262)	10.1530	(4,556)	(0.07)
2006	30	20	455,702	512,655	10.3863	49,359	0.80
2007	30	21	(2,754,392)	(3,068,644)	10.6029	(289,416)	(4.69)
2008	30	22	569,652	627,127	10.8039	58,047	0.94
2009	30	23	481,424	522,683	10.9904	47,558	0.77
2010	30	24	458,881	490,407	11.1635	43,930	0.71
2011	30	25	856,807	899,913	11.3241	79,469	1.29
2012	30	26	319,593	329,374	11.4732	28,708	0.47
2013	30	27	(1,367,523)	(1,381,028)	11.6116	(118,935)	(1.93)
2014	30	28	(1,437,583)	(1,435,549)	11.7400	(122,278)	(1.98)
2015	30	29	(1,315,599)	(1,303,894)	11.8592	(109,948)	(1.78)
2016	30	30	(1,280,599)	(1,280,599)	11.9698	(106,986)	(1.73)
<b>Benefit Changes</b>							
1996	30	10	(52,503)	(53,880)	7.0461	(7,647)	(0.12)
1998	30	12	866,643	942,541	7.9268	118,905	1.93
2000	30	14	154,856	173,528	8.6854	19,979	0.32
2002	30	16	(2,757)	(3,139)	9.3388	(336)	(0.01)
2005	30	19	3,376,647	3,826,639	10.1530	376,897	6.11
2006	30	20	21,867	24,601	10.3863	2,369	0.04
2010	30	24	144,060	153,957	11.1635	13,791	0.22
2011	30	25	(576,034)	(605,013)	11.3241	(53,427)	(0.87)
2012	30	26	(211,273)	(217,739)	11.4732	(18,978)	(0.31)
<b>Assumption Changes</b>							
1995	30	9	576,369	566,370	6.5539	86,417	1.40
2000	30	14	93,418	104,682	8.6854	12,053	0.20
2001	30	15	418,050	473,213	9.0243	52,438	0.85
2011	30	25	577,020	606,051	11.3241	53,519	0.87
2015	30	29	1,193,697	1,183,113	11.8592	99,763	1.62
2016	30	30	1,395,375	1,395,375	11.9698	116,575	1.89
<b>Totals</b>				<b>\$2,374,168</b>		<b>\$(2,532)</b>	<b>(0.04) %</b>

\* Actual wage growth over the past 10 years has been (0.47)%, versus the 4.5% assumed. FS 112 requires use of the 10-year average if less than assumed. Because the 10-year average is less than 0, 0 has been used in the above calculation as required.

**ACTUARIAL BALANCE SHEET - SEPTEMBER 30, 2016**  
**(\$ AMOUNTS IN THOUSANDS)\***

**PRESENT RESOURCES AND EXPECTED FUTURE RESOURCES**

	<b>General Members</b>	<b>Utilities Authority Members</b>	<b>Police Members</b>	<b>Total</b>
A. Funding value of plan assets:				
1. Net assets from plan financial statements (Market)	\$54,969	\$ 79,755	\$48,482	\$183,206
2. Funding value adjustment	590	855	520	1,965
3. Funding value of assets	\$55,559	\$ 80,610	\$49,002	\$185,171
B. Actuarial present value of expected future employer contributions:				
1. For normal costs	\$ 6,087	\$ 7,178	\$ 5,030	\$ 18,295
2. For unfunded actuarial accrued liability	7,101	13,299	2,374	22,774
3. Total	\$13,188	\$ 20,477	\$ 7,404	\$ 41,069
C. Actuarial present value of expected future member contributions	3,152	5,442	2,406	11,000
D. Total Present and Future Resources	\$71,899	\$106,529	\$58,812	\$237,240

**ACTUARIAL PRESENT VALUE OF EXPECTED FUTURE  
BENEFIT PAYMENTS AND RESERVES**

	<b>General Members</b>	<b>Utilities Authority Members</b>	<b>Police Members</b>	<b>Total</b>
A. To retired members and beneficiaries	\$40,012	\$ 60,836	\$32,505	\$133,353
B. To vested terminated members	1,707	1,212	244	3,163
C. To present active members:				
1. Allocated to service rendered prior to valuation date	\$20,940	\$ 31,861	\$18,627	\$ 71,428
2. Allocated to service likely to be rendered after valuation date	9,240	12,620	7,436	29,296
3. Total	\$30,180	\$ 44,481	\$26,063	\$100,724
D. Total actuarial present value of expected future benefit payments	\$71,899	\$106,529	\$58,812	\$237,240

\* Totals may be off due to rounding.

## CUMULATIVE EXPERIENCE GAINS/(LOSSES)

<b>Year Ended September 30</b>	<b>Balance at Beginning of Year</b>	<b>Interest</b>	<b>Gain/(Loss) During Year</b>	<b>Value of Cost- of-Living Adjustment During Year</b>	<b>Balance at End of Year</b>
1999	\$ -	\$ -	\$ 4,314,699	\$ 709,305	\$ 3,605,394
2000	3,605,394	288,432	6,465,035	1,219,607	9,139,254
2001	9,139,254	731,140	(6,086,030)	1,186,656	2,597,708
2002	2,597,708	207,817	(10,907,939)	-	(8,102,414)
2003	(8,102,414)	(648,193)	(9,844,539)	-	(18,595,145)
2004	(18,595,145)	(1,487,612)	(11,328,205)	-	(31,410,961)
2005	(31,410,961)	(2,512,877)	(2,296,402)	-	(36,220,240)
2006*	(18,683,996)	(1,494,720)	3,801,047	-	(16,377,668)
2007	(16,377,668)	(1,310,213)	9,086,773	-	(8,601,108)
2008	(8,601,108)	(688,089)	(3,888,228)	-	(13,177,425)
2009	(13,177,425)	(1,054,194)	(4,059,794)	-	(18,291,413)
2010	(18,291,413)	(1,463,313)	(3,428,818)	-	(23,183,544)
2011	(23,183,544)	(1,854,684)	(8,690,267)	-	(33,728,495)
2012	(33,728,495)	(2,698,280)	853,641	-	(35,573,134)
2013	(35,573,134)	(2,845,851)	4,085,864	-	(34,333,121)
2014	(34,333,121)	(2,746,650)	4,959,820	-	(32,119,951)
2015	(32,119,951)	(2,569,596)	5,140,356	-	(29,549,191)
2016	(29,549,191)	(2,290,062)	1,460,257	-	(30,378,996)

\* After removing the estimated impact of Fire members.



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## **SECTION C**

SUMMARY OF BENEFIT PROVISIONS AND  
VALUATION DATA SUBMITTED BY THE  
RETIREMENT AND BENEFIT SYSTEM

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## **SUMMARY OF BENEFIT PROVISIONS**

### **(SEPTEMBER 30, 2016)**

**Participation:** Participation in the Retirement and Benefit System begins upon employment.

**Normal Retirement** (no reduction factor for age):

- Eligibility** - Original members: 20 or more years of service.
- All members** - General, Utilities Authority: 25 or more years of service regardless of age, or age 60 with 5 or more years of service.
- Police: 25 or more years of service, regardless of age, or age 55 with 5 or more years of service.

**Mandatory Retirement Age** - None.

**Annual Amount** - All members: Total service times 3.0% of final average salary.

*For members hired prior to October 1, 2012:*

- The maximum pension benefit is \$100,000 annually.

*For members hired on or after October 1, 2012:*

- The maximum annual pension benefit shall not exceed 75% of final average salary.
- The maximum pension benefit is \$100,000 annually.

The normal form of benefit is a benefit payable for life. Optional forms are available on an actuarial equivalent basis.

**Type of Final Average Salary** - General: Highest 5 consecutive years out of last 10. Police, Utilities Authority: Highest 5 years out of last 10. Overtime hours included in compensation are limited to 300 hours per fiscal year.

*For members hired prior to October 1, 2012:* Payments for unused sick and vacation time included in compensation are limited to unused sick and vacation time accrued through September 20, 2012 for General and Police, and July 1, 2011 for Utilities Authority.

*For members hired on or after October 1, 2012:* Payments for unused sick and vacation time are not included in compensation.

#### **Deferred Retirement Option Plan (DROP) Retirement:**

**Eligibility** - General, Police, and Utilities Authority members: Same as Normal Retirement, election may be made on or after normal retirement eligibility, but not after reaching 30 years of service. Participation in the DROP ends after five years.

**Annual Amount** - Computed as a normal retirement but based upon service and final average salary at time of DROP election. Member contributions cease and monthly benefits (and post-retirement increases, if any) accumulate in a self-directed DROP account and are payable to the member upon termination of employment.

**Deferred Retirement** (vested benefit):

**Eligibility** - *For Members hired prior to October 1, 2012: 5 or more years of service.*  
*For Members hired on or after October 1, 2012: 10 or more years of service.*  
Benefit begins upon attaining age 60.

**Annual Amount** - Computed as a normal retirement but based upon service and final average salary at time of termination.

**Duty Disability Retirement:**

**Eligibility** - No age or service requirements if the Retirement Board finds the member to be in receipt of weekly workers' compensation on account of disability in the course of duty.

**Annual Amount** - Computed as a normal retirement based upon service projected to the end of the duty disability period and final average salary at time of disability. Minimum benefit is 75% of final average salary during the duty disability period. The duty disability period ends on the earlier of the 25th anniversary of the member's hire date or the date the member attains age 65 but not prior to 5 years from the date of duty disability retirement.

**Non-Duty Disability Retirement:**

**Eligibility** - 5 or more years of service.

**Annual Amount** - Computed as a normal retirement but based upon service and final average salary at time of disability.

**Duty Death Before Retirement:**

**Eligibility** - No age or service requirements. Benefits begin upon termination of workers' compensation.

**Annual Amount** - A benefit equal to the same amount that was paid by workers' compensation to the spouse until death, to unmarried children under 18 and dependent parents.

**Non-Duty Death Before Retirement:**

**Eligibility** - 5 or more years of service.

**Annual Amount** - Computed as a normal retirement but actuarially reduced in accordance with a 100% joint and survivor election.

**Post-Retirement Increases:** COLA may be granted from investment returns in excess of actuarial interest assumption, not to exceed 3%.

**Military Service:** May be purchased by members who meet the eligibility conditions.

**Member Contributions:**     General: 5.16% of annual salary  
                                  Police: 5.16% of annual salary  
                                  Utilities Authority: 6.16% of annual salary

**Employer Contributions:** Actuarially determined amounts which together with member contributions are sufficient to at least cover the requirements of the funding objective stated on page A-1.

**Changes in Plan Provisions:** There were no changes in Plan Provisions since the last valuation.

# ACCOUNTING INFORMATION SUBMITTED FOR VALUATION

## REVENUES AND EXPENDITURES

	Year Ended	
	9/30/2016	9/30/2015
<b>REVENUES:</b>		
a. Member contributions:		
General	\$ 424,671	\$ 379,569
Police	338,330	327,754
Utilities Authority	770,508	765,768
b. Employer contributions:		
General	1,241,098	1,118,253
Police	931,515	888,193
Utilities Authority	2,038,699	2,086,821
c. Investment income:		
1. Interest and dividends	3,349,118	3,364,767
2. Gain or loss on sales	2,508,100	7,375,853
3. Unrealized gain/loss	11,261,975	(7,107,565)
d. Total revenues	\$ 22,864,014	\$ 9,199,414
<b>EXPENDITURES:</b>		
a. Refunds of member contributions:		
General	\$ 124,833	\$ 103,913
Police	227,175	104,662
Utilities Authority	140,340	78,895
b. Benefits paid:		
General	4,032,966	3,974,690
Police	2,934,218	2,767,271
Utilities Authority	5,917,139	5,786,109
c. Investment expenses	647,002	648,983
d. Administrative expenses	217,891	176,341
e. Other	50,240	44,893
f. Total expenditures	\$ 14,291,804	\$ 13,685,756
<b>ADJUSTMENTS:</b>	\$ -	\$ -
<b>RESERVE INCREASE:</b>	\$ 8,572,210	\$ (4,486,342)

## MARKET VALUE OF ASSETS

	9/30/2016	9/30/2015
Cash	\$ 95,891	\$ 36,572
Receivables & Accruals	623,581	700,322
Other short-term	3,076,924	5,342,869
Real Estate	20,372,890	13,657,912
Bonds - government	29,855,487	28,503,268
- corporate	15,586,770	18,824,158
Stocks - common	13,788,126	13,416,920
- mutual funds	99,752,022	94,179,144
Other - prepaid expenses	105,712	-
Total assets	183,257,403	174,661,165
Less accounts payable	51,386	27,358
Net assets	\$ 183,206,017	\$ 174,633,807

**RETIRED MEMBER AND BENEFICIARY DATA SEPTEMBER 30, 2016**  
**TABULATED BY VALUATION DIVISIONS**

Valuation Divisions	No.	Annual Benefits	Average Benefit	Actuarial Value of Benefits
General Members	196	\$ 4,059,532	\$ 20,712	\$ 40,012,407
Utilities Authority Members	221	5,911,156	26,747	60,836,224
Police Members	82	3,071,980	37,463	32,505,212
<b>Totals</b>	<b>499</b>	<b>\$13,042,668</b>	<b>\$26,138</b>	<b>\$133,353,843</b>

Divisions	All Retirement's Averages			New Age and Service Retired Members Added During Year Ended 9/30/2016		
	Attained Age	Retirement Age	Current	Averages		
			Annual Benefits	No.	Age	Annual Benefits
General Members	70.1	60.0	\$20,712	7	62.4	\$16,018
Utilities Authority Members	68.6	58.1	26,747	7	59.0	27,084
Police Members	65.0	53.8	37,463	5	53.5	48,395

## RETIRED MEMBER AND BENEFICIARY DATA HISTORICAL COMPARISON

Period	Added		Removed		Net Increase		End of Period		Expected Removals	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits	No.	Benefits
9/30/82	15	\$ 102,964	3	\$ 10,568	12	\$ 92,396	141	\$ 602,576	3.6	\$ 10,800
9/30/83	15	94,040	9	17,784	6	76,256	147	678,832	4.2	12,930
9/30/84	16	74,505	6	14,486	10	60,019	157	738,851	4.3	15,103
9/30/85	11	87,916	6	16,055	5	71,861	162	810,712	4.8	17,129
9/30/86	21	237,533	8	34,936	13	202,597	175	1,013,309	5.3	20,394
9/30/87	17	182,208	7	18,904	10	163,304	185	1,176,613	5.7	25,092
9/30/88	16	176,569	6	18,144	10	158,425	195	1,335,038	6.0	29,181
9/30/89	18	210,866	7	29,378	11	181,488	206	1,516,526	6.6	34,395
9/30/90	19	284,294	8	50,713	11	233,581	217	1,750,107	7.2	40,904
9/30/91	12	166,933	12	40,397	-	126,536	217	1,876,643	7.8	48,142
9/30/92	19	279,791	6	12,185	13	267,606	230	2,144,249	7.4	46,602
9/30/93	26	505,107	8	102,192	18	402,915	248	2,547,164	8.1	53,142
9/30/94	20	319,610	8	59,627	12	259,983	260	2,807,147	8.7	58,237
9/30/95	22	481,651	9	41,888	13	439,763	273	3,246,910	9.2	64,542
9/30/96	12	177,476	9	54,301	3	123,175	276	3,370,085	8.4	61,052
9/30/97	20	311,526	11	62,949	9	248,577	285	3,618,662	8.9	66,449
9/30/98	35	833,113	9	47,534	27	785,579	311	4,404,241	9.1	72,632
9/30/99	25	507,447	15	126,797	10	380,650	321	4,784,891	9.7	82,380
9/30/00	27	646,116	14	129,198	13	516,918	334	5,301,809	9.9	90,589
9/30/01	23	628,192	15	97,296	8	530,896	342	5,832,705	9.9	97,991
9/30/02	23	526,601	3	33,319	20	493,282	362	6,325,987	9.7	109,931
9/30/03	17	313,250	5	42,129	12	271,121	374	6,597,108	10.6	121,871
9/30/04	25	705,692	3	44,505	22	661,187	396	7,258,295	11.2	132,981
9/30/05	11	354,475	22	266,853	(11)	87,622	385	7,345,917	12.4	149,279
9/30/06 *	37	1,017,845	99	2,907,201	(62)	(1,889,356)	323	5,456,561	10.0	109,462
9/30/07	32	820,021	18	202,924	14	617,097	337	6,073,658	11.0	126,496
9/30/08	23	635,039	12	184,195	11	450,844	348	6,524,502	11.2	138,459
9/30/09	55	1,551,148	16	182,856	39	1,368,292	387	7,892,794	11.7	149,577
9/30/10	56	2,229,035	14	177,196	42	2,051,839	429	9,944,633	12.3	170,609
9/30/11	26	672,328	16	239,318	10	433,010	439	10,377,643	12.9	197,045
9/30/12	27	746,421	14	251,747	13	494,674	452	10,872,317	13.5	196,990
9/30/13	32	927,561	15	134,978	17	792,583	469	11,664,900	14.2	214,174
9/30/14	40	890,500	20	262,625	20	627,875	489	12,292,775	14.2	232,649
9/30/15	31	739,422	19	262,533	12	476,889	501	12,769,664	15.2	249,235
<b>9/30/16</b>	<b>24</b>	<b>653,823</b>	<b>26</b>	<b>380,819</b>	<b>(2)</b>	<b>273,004</b>	<b>499</b>	<b>13,042,668</b>	<b>16.1</b>	<b>270,359</b>

## RETIRED MEMBERS AND BENEFICIARIES HISTORICAL COMPARISON

Valuation Date	% Increase in Annual Benefits	No. of Active Per Retired	Annual Benefits as % of Active Payroll	Average Benefits
9/30/82	8.1 %	5.0	5.3 %	\$ 4,274
9/30/83	8.0	4.9	5.5	4,618
9/30/84	8.8	4.7	5.5	4,706
9/30/85	9.7	4.7	5.4	5,004
9/30/86	25.0	4.4	6.1	5,790
9/30/87	16.1	4.2	6.6	6,360
9/30/88	13.5	4.2	6.8	6,846
9/30/89	13.6	4.0	7.5	7,362
9/30/90	15.4	3.9	7.8	8,065
9/30/91	7.2	3.9	7.9	8,648
9/30/92	14.3	3.6	8.6	9,323
9/30/93	18.8	3.1	10.8	10,271
9/30/94	10.2	3.0	11.6	10,797
9/30/95	15.7	3.0	12.4	11,893
9/30/96	3.8	3.0	12.2	12,210
9/30/97	7.4	3.2	12.1	12,697
9/30/98	21.7	2.8	14.5	14,162
9/30/99	8.6	2.7	15.1	14,906
9/30/00	10.8	2.7	15.9	15,874
9/30/01	10.0	2.7	16.4	17,055
9/30/02	8.5	2.5	17.1	17,475
9/30/03	4.3	2.5	16.4	17,639
9/30/04	10.0	2.4	16.7	18,329
9/30/05	1.2	2.6	15.0	19,080
9/30/06 *	20.3	2.0	17.9	16,893
9/30/07	11.3	2.0	19.6	18,023
9/30/08	7.4	2.0	19.8	18,749
9/30/09	21.0	1.7	25.4	20,395
9/30/10	26.0	1.3	37.1	23,181
9/30/11	4.4	1.3	40.3	23,639
9/30/12	4.8	1.2	42.1	24,054
9/30/13	7.3	1.1	46.3	24,872
9/30/14	5.4	1.1	48.9	25,139
9/30/15	3.9	1.0	50.1	25,488
<b>9/30/16</b>	<b>2.1</b>	<b>1.1</b>	<b>47.4</b>	<b>26,138</b>

\* Removed 90 Fire retirees and beneficiaries, and \$2,811,761 annual benefits in the 9/30/2006 valuation.



**RETIRED MEMBER AND BENEFICIARY DATA AS OF SEPTEMBER 30, 2016**  
**BY TYPE OF BENEFIT BEING PAID**

<u>Type of Benefit Being Paid</u>	<u>No.</u>	<u>Annual Benefits</u>	<u>Average Benefits</u>
Age and Service Benefits			
Straight Life - benefit terminating at death of retirant	165	\$ 4,505,628	\$27,307
Option A - 100% joint and survivor benefit*	106	3,112,856	29,367
Option B/D/E - 50%/75%/67% joint and survivor benefit*	98	3,154,343	32,187
Option C - 10-year certain and life	25	557,110	22,284
Surviving beneficiaries	67	863,872	12,894
Other Age and Service Benefits	<u>1</u>	<u>13,155</u>	<u>13,155</u>
Total Age and Service Benefits	462	12,206,964	26,422
Casualty Benefits			
Duty disability	11	355,722	32,338
Non-duty disability	9	148,818	16,535
Duty death	2	47,846	23,923
Non-duty death	11	230,209	20,928
Surviving beneficiaries	<u>4</u>	<u>53,109</u>	<u>13,277</u>
Total Casualty Benefits	37	835,704	22,587
<b>Total Benefits Being Paid</b>	<b>499</b>	<b>\$13,042,668</b>	<b>\$26,138</b>

\* Includes pop-up provision.

**RETIRED MEMBERS AND BENEFICIARIES AS OF SEPTEMBER 30, 2016  
BY ATTAINED AGE**

<b>Age Last Birthday</b>	<b>Age and Service</b>		<b>Casualty</b>		<b>Total</b>	
	<b>No.</b>	<b>Annual Benefits</b>	<b>No.</b>	<b>Annual Benefits</b>	<b>No.</b>	<b>Annual Benefits</b>
Under 45	3	\$ 34,017	1	\$ 33,018	4	\$ 67,035
45-49	6	310,931	4	79,862	10	390,793
50-54	23	916,939	6	171,739	29	1,088,678
55-59	48	1,996,946	4	123,831	52	2,120,777
60-64	100	2,764,881	8	164,617	108	2,929,498
65-69	88	2,543,706	8	154,384	96	2,698,090
70-74	73	1,917,774	1	7,850	74	1,925,624
75-79	47	786,402	4	68,388	51	854,790
80-84	25	398,302	0	-	25	398,302
85-89	28	365,329	1	32,015	29	397,344
90 & Over	21	171,737	0	-	21	171,737
<b>Totals</b>	<b>462</b>	<b>\$ 12,206,964</b>	<b>37</b>	<b>\$ 835,704</b>	<b>499</b>	<b>\$ 13,042,668</b>

**INACTIVE VESTED MEMBERS AS OF SEPTEMBER 30, 2016  
BY ATTAINED AGE**

Attained Age	General Members		Utilities Authority*		Police Members		TOTAL	
	No.	Estimated Annual Benefits	No.	Estimated Annual Benefits	No.	Estimated Annual Benefits	No.	Estimated Annual Benefits
30-34	1	\$ 4,347	2	\$ 24,744			3	\$ 29,091
35-39	3	34,332					3	34,332
40-44	1	38,381	2	31,330	3	\$ 36,381	6	106,091
45-49	5	117,775	3	32,641	2	30,173	10	180,589
50-54	2	24,840	1	16,423	1	7,094	4	48,357
55-59	8	89,974	7	79,950			15	169,924
60-64			1	9,027			1	9,027
<b>TOTALS</b>	<b>20</b>	<b>\$309,650</b>	<b>16</b>	<b>\$194,114</b>	<b>6</b>	<b>\$73,647</b>	<b>42</b>	<b>\$577,411</b>

\* Deferred annuities were estimated for 3 Utilities Authority members who terminated during the 2015-2016 plan year.

**ACTIVE MEMBERS INCLUDED IN VALUATION  
GENERAL MEMBERS**

Valuation September 30	Active Members	Vested		Valuation Payroll	Average		
		Term. Members			Age	Service	Pay
1997	254	4		\$ 6,751,233	44.3 yrs.	8.3 yrs.	\$ 26,580
1998	249	3		6,868,334	44.6	8.5	27,584
1999	242	2		6,892,761	45.3	8.6	28,482
2000	260	2		7,717,224	45.8	8.5	29,682
2001	268	3		8,308,758	45.1	8.3	31,003
2002	275	7		8,901,179	45.5	8.1	32,368
2003	302	5		9,994,351	46.5	7.7	33,094
2004	294	7		10,546,747	46.1	8.1	35,873
2005	297	7		11,854,374	46.4	8.6	39,914
2006	287	6		11,206,771	46.5	8.0	39,048
2007	289	6		11,131,329	47.3	8.3	38,517
2008	281	6		11,949,389	47.9	9.0	42,525
2009	265	8		11,108,762	47.5	8.6	41,920
2010	226	13		8,874,396	46.8	8.0	39,267
2011	219	16		8,488,894	47.1	8.2	38,762
2012	216	16		8,625,945	47.8	8.9	39,935
2013	198	17		7,765,325	48.2	9.4	39,219
2014	198	14		7,912,918	48.3	9.3	39,964
2015	185	15		7,383,853	48.9	9.8	39,913
<b>2016</b>	<b>203</b>	<b>20</b>		<b>8,738,017</b>	<b>48.5</b>	<b>8.8</b>	<b>43,044</b>

**NUMBER ADDED TO AND REMOVED FROM ACTIVE MEMBERSHIP  
GENERAL MEMBERS**

Year Ended September 30	Number Added During Year		Normal Retirement		Disability Retirement		Died-In- Service		Terminations				Active Members End of Year
	A	E	A	E	A	E	A	E	Withdrawal	Vested	Totals	Transfer	
2007	40	38	5	16.1	0	0.4	2	0.5	31*	0	31	21.3	289
2008	19	27	7	14.8	0	0.4	0	0.5	19	1	20	19.7	281
2009	20	36	23	18.2	0	0.4	1	0.5	10	2	12	17.0	265
2010	10	49	23	12.9	0	0.4	0	0.5	21	5	26	16.1	226
2011	17	24	11	7.5	1	0.4	1	0.5	8	3	11	12.3	219
2012	10	13	4	7.0	0	0.5	3	0.3	5	1	6	12.3	216
2013	9	27	10	9.8	0	0.5	1	0.4	13	3	16	11.0	198
2014	23	23	10	8.4	0	0.5	0	0.4	13	0	13	9.5	198
2015	14	26	8	10.1	0	0.4	2	0.4	14	2	16	10.9	(1) 185
<b>2016</b>	<b>41</b>	<b>23</b>	<b>7</b>	<b>8.3</b>	<b>0</b>	<b>0.5</b>	<b>0</b>	<b>0.4</b>	<b>10</b>	<b>6</b>	<b>16</b>	<b>9.9</b>	<b>203</b>
<b>10 Year Totals</b>	<b>203</b>	<b>286</b>	<b>108</b>	<b>113.1</b>	<b>1</b>	<b>4.4</b>	<b>10</b>	<b>4.4</b>	<b>144</b>	<b>23</b>	<b>167</b>	<b>140.0</b>	

*A represents actual number; E represents expected number.*

*\* Includes 47 General Fire members.*

**ACTIVE MEMBERS INCLUDED IN VALUATION  
UTILITIES AUTHORITY MEMBERS**

Valuation September 30	Active Members	Vested		Valuation Payroll	Average		
		Term. Members			Age	Service	Pay
1997	260	2		\$ 9,272,216	43.3 yrs.	9.8 yrs.	\$ 35,662
1998	230	12		8,481,126	43.7	10.0	36,874
1999	247	10		9,431,774	44.0	9.3	38,185
2000	244	12		9,750,426	44.1	9.5	39,961
2001	257	13		10,236,646	44.1	9.0	39,831
2002	253	9		10,675,070	44.9	9.7	42,194
2003	248	10		10,744,695	45.3	10.0	43,325
2004	245	11		11,193,220	45.8	10.1	45,687
2005	256	12		12,754,845	46.5	10.1	49,824
2006	263	11		12,551,346	46.6	9.6	47,724
2007	278	10		13,494,349	46.5	9.3	48,541
2008	282	12		13,970,069	46.5	9.1	49,539
2009	266	7		13,244,000	46.0	9.3	49,789
2010	248	8		12,119,371	46.2	9.3	48,868
2011	237	10		11,893,916	47.0	9.9	50,185
2012	237	10		11,801,344	47.2	9.9	49,795
2013	232	9		11,534,243	46.7	9.6	49,717
2014	219	15		11,071,951	46.4	9.3	50,557
2015	228	18		11,841,919	46.3	9.1	51,938
<b>2016</b>	<b>229</b>	<b>16</b>		<b>12,588,492</b>	<b>46.3</b>	<b>9.4</b>	<b>54,972</b>

**NUMBER ADDED TO AND REMOVED FROM ACTIVE MEMBERSHIP  
UTILITIES AUTHORITY MEMBERS**

Year Ended September 30	Number Added During Year		Normal Retirement		Disability Retirement		Died-In- Service		Terminations				Active Members End of Year
	A	E	A	E	A	E	A	E	Withdrawal		Totals	Transfer	
									A	E			
2007	40	25	6	6.7	1	0.5	0	0.6	18	0	18	17.0	278
2008	27	23	11	9.2	0	0.5	0	0.6	9	3	12	18.7	282
2009	11	27	13	8.2	2	0.5	1	0.5	10	1	11	18.3	266
2010	11	29	19	9.7	0	0.5	0	0.5	9	1	10	15.3	248
2011	5	16	7	5.8	0	0.5	0	0.5	7	2	9	13.4	237
2012	20	20	8	8.6	0	0.6	0	0.4	11	1	12	11.0	237
2013	25	30	14	9.0	0	0.6	1	0.5	15	0	15	12.0	232
2014	23	36	18	8.8	0	0.6	0	0.4	12	6	18	13.3	219
2015	27	19	10	6.1	1	0.5	0	0.4	4	4	8	13.5	228
<b>2016</b>	<b>25</b>	<b>24</b>	<b>6</b>	<b>5.3</b>	<b>0</b>	<b>0.5</b>	<b>0</b>	<b>0.3</b>	<b>15</b>	<b>3</b>	<b>18</b>	<b>15.0</b>	<b>229</b>
<b>10 Year Totals</b>	<b>214</b>	<b>249</b>	<b>112</b>	<b>77.4</b>	<b>4</b>	<b>5.3</b>	<b>2</b>	<b>4.7</b>	<b>110</b>	<b>21</b>	<b>131</b>	<b>147.5</b>	

A represents actual number; E represents expected number.

**ACTIVE MEMBERS INCLUDED IN VALUATION  
POLICE MEMBERS**

Valuation September 30	Active Members	Vested Term. Members	Payroll	Average		
				Age	Service	Pay
1997	105	2	\$ 3,717,397	39.0 yrs.	9.2 yrs.	\$ 35,404
1998	111	3	4,234,703	37.7	7.9	38,150
1999	106	2	4,224,186	38.1	8.4	39,851
2000	112	2	4,503,739	38.6	7.9	40,212
2001	107	1	4,418,980	38.5	8.1	41,299
2002	102	2	4,567,931	39.7	9.0	44,784
2003	103	3	4,921,744	39.9	9.1	47,784
2004	103	3	5,496,631	40.3	9.9	53,365
2005	105	3	5,943,309	40.9	10.6	56,603
2006	111	2	6,773,879	39.3	9.4	61,026
2007	106	2	6,358,225	38.9	9.4	59,983
2008	117	2	7,032,172	39.2	9.4	60,104
2009	111	3	6,663,530	38.6	9.2	60,032
2010	102	3	5,785,106	38.4	9.0	56,717
2011	101	4	5,361,391	38.9	9.7	53,083
2012	99	3	5,415,125	39.0	9.8	54,698
2013	106	3	5,899,165	39.2	9.2	55,653
2014	109	2	6,165,492	38.4	8.9	56,564
2015	107	4	6,249,587	39.0	9.1	58,407
<b>2016</b>	<b>100</b>	<b>6</b>	<b>6,166,648</b>	<b>38.3</b>	<b>9.0</b>	<b>61,666</b>

**NUMBER ADDED TO AND REMOVED FROM ACTIVE MEMBERSHIP  
POLICE MEMBERS**

Year Ended September 30	Number Added During Year		Normal Retirement		Disability Retirement		Died-In- Service		Terminations				Active Members End of Year	
	A	E	A	E	A	E	A	E	Withdrawal		Totals			Transfer
									A	A	A	E		
2007	5	10	6	5.3	0	0.2	1	0.1	3	0	3	4.9		106
2008	13	2	0	4.7	0	0.2	0	0.1	2	0	2	4.2		117
2009	12	18	5	5.1	0	0.2	0	0.1	12	1	13	5.1		111
2010	4	13	9	4.4	0	0.2	0	0.1	4	0	4	5.3		102
2011	5	6	1	1.7	0	0.2	0	0.1	4	1	5	5.3		101
2012	14	16	1	0.9	3	0.3	0	0.1	12	0	12	3.7		99
2013	17	10	2	1.4	0	0.2	0	0.1	8	0	8	4.4		106
2014	19	16	4	2.0	0	0.2	0	0.1	12	0	12	5.3		109
2015	14	16	2	2.0	1	0.2	0	0.1	11	2	13	5.8		107
<b>2016</b>	<b>15</b>	<b>22</b>	<b>4</b>	<b>3.4</b>	<b>0</b>	<b>0.2</b>	<b>0</b>	<b>0.1</b>	<b>15</b>	<b>3</b>	<b>18</b>	<b>5.8</b>		<b>100</b>
<b>10 Year Totals</b>	<b>118</b>	<b>129</b>	<b>34</b>	<b>30.9</b>	<b>4</b>	<b>2.1</b>	<b>1</b>	<b>1.0</b>	<b>83</b>	<b>7</b>	<b>90</b>	<b>49.8</b>		

*A represents actual number; E represents expected number.*

**GENERAL MEMBERS  
AS OF SEPTEMBER 30, 2016  
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
20-24	2							2	\$ 43,636
25-29	10	1						11	343,954
30-34	4	1	5	1				11	441,791
35-39	11	3	2	2				18	611,506
40-44	9	5	4	7	3			28	1,387,900
45-49	15	6	8	5	2			36	1,675,661
50-54	13	5	12	4				34	1,410,015
55-59	5	3	14	8	6			36	1,785,119
60		1	2					3	127,490
61	1	1			1			3	160,624
62	1							1	49,178
63		3	1					4	130,640
64		1	1					2	170,590
65	1		1					2	63,188
66	2		1					3	106,475
67	2	2						4	182,842
71	1							1	8,530
72			1					1	9,325
75			1					1	9,293
79				2				2	20,260
<b>Totals</b>	<b>77</b>	<b>32</b>	<b>53</b>	<b>29</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>203</b>	<b>\$8,738,017</b>

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 48.5 years  
Service: 8.8 years  
Annual Pay: \$43,044

**UTILITIES AUTHORITY MEMBERS  
AS OF SEPTEMBER 30, 2016  
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
20-24	2							2	\$ 65,769
25-29	21	1						22	876,950
30-34	10	8	2					20	1,086,016
35-39	11	3	4	3				21	932,369
40-44	7	7	7	3	1			25	1,490,826
45-49	13	6	4	4	5	5		37	2,139,407
50-54	8	6	13	3	6	1		37	2,170,714
55-59	10	12	8	8	6	1		45	2,488,278
60	3	1		2		1	1	8	498,204
61		1	1					2	116,567
62	1	1	1	1				4	287,530
64		1						1	56,440
65	1			1				2	268,087
66	2							2	68,927
72			1					1	42,408
<b>Totals</b>	<b>89</b>	<b>47</b>	<b>41</b>	<b>25</b>	<b>18</b>	<b>8</b>	<b>1</b>	<b>229</b>	<b>\$12,588,492</b>

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 46.3 years  
Service: 9.4 years  
Annual Pay: \$54,972



**POLICE MEMBERS  
AS OF SEPTEMBER 30, 2016  
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
20-24	7							7	\$ 274,957
25-29	19							19	869,331
30-34	8	3	2					13	687,953
35-39	9	1	3	2				15	861,938
40-44	3	2	6	3				14	980,674
45-49	1		2	4	10			17	1,413,673
50-54	4			4	2			10	709,700
55-59			1	1	3			5	368,422
<b>Totals</b>	<b>51</b>	<b>6</b>	<b>14</b>	<b>14</b>	<b>15</b>	<b>0</b>	<b>0</b>	<b>100</b>	<b>\$6,166,648</b>

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age:           38.3       years  
Service:       9.0        years  
Annual Pay:   \$61,666

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## **SECTION D**

ACTUARIAL COST METHOD, ACTUARIAL  
ESTIMATES AND DEFINITIONS OF TECHNICAL  
TERMS

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## ACTUARIAL COST METHOD USED FOR THE VALUATION

The actuarial cost method is a procedure for allocating the actuarial present value of future benefits and expenses to time periods. The method used for this valuation is the individual entry-age actuarial cost method, and has the following characteristics:

***Actuarial Present Value of Future Benefits.*** Actuarial present values are calculated using the benefit provisions applicable to active members, vested terminated members, and retirees and beneficiaries as of the valuation date using the assumptions summarized elsewhere in this report.

***Normal Costs.*** The actuarial present values for each year of service rendered before and after the valuation date are determined so that:

- (i) the annual normal costs for each individual active member, payable from the member's effective date of employment (or entry age) to projected date of retirement, are sufficient to accumulate the value of the member's benefit at the time of retirement; and
- (ii) each annual normal cost is a constant percentage of the active member's year-by-year projected pensionable pay.

***Actuarial Accrued Liabilities.*** The actuarial present value of future benefits minus the actuarial present value of normal costs rendered after the valuation date is the Actuarial Accrued Liabilities.

***Funding Value of Assets.*** The accrued assets recognized as of the valuation date for the purpose of determining contribution requirements.

***Unfunded Actuarial Accrued Liabilities.*** The Actuarial Accrued Liabilities minus the funding value of assets are the Unfunded Actuarial Accrued Liabilities.

***Amortization of Unfunded Actuarial Accrued Liabilities.*** Unfunded Actuarial Accrued Liabilities were amortized by level (principal & interest combined) percent-of-payroll contributions over periods shown elsewhere in this report. Active member payroll was assumed to increase 4.0% a year for the purpose of determining the level percent contributions, unless the 10-year average annual payroll growth is lower than 4.0%.

***Actuarial Assumptions.*** Assumptions are established by the Board after consulting with the actuary. Non-economic assumptions are generally selected on the basis of the System's historical activity, modified for expected future differences. The reasonableness of the economic assumptions is based upon capital market expectations provided by various investment consultants and other sources such as the Social Security Trustees report. All actuarial assumptions are based on future expectations, not market measures.

**LEVEL PERCENT OF ACTIVE MEMBER COVERED PAYROLL  
AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY\*  
(\$ AMOUNTS IN THOUSANDS)  
GENERAL MEMBERS**

Year	Pay		Unfunded		Contribution	
	Inflated Dollars	Constant Dollars	Inflated Dollars	Constant Dollars	Inflated Dollars	Constant Dollars
2016	\$ 8,738	\$8,738	\$ 7,101	\$7,101	\$ 347	\$ 347
2017	9,088	8,738	7,284	7,004	361	347
2018	9,451	8,738	7,467	6,904	375	347
2019	9,829	8,738	7,649	6,800	390	347
2020	10,222	8,738	7,828	6,692	406	347
2025	12,437	8,738	8,685	6,102	589	414
2030	15,131	8,738	7,063	4,079	1,482	856
2035	18,410	8,738	2,846	1,351	325	154
2045	27,251	8,738	525	168	534	171
2046	28,341	8,738	0	0	0	0

* \$ 3,165,497	over 30 years	\$ 483,709	over 15 years
(214,179)	over 29 years	(843,580)	over 14 years
(1,255,711)	over 28 years	(773,954)	over 13 years
(1,152,620)	over 27 years	(934,334)	over 12 years
(586,371)	over 26 years	(1,395,125)	over 11 years
2,319,674	over 25 years	(357,931)	over 10 years
632,607	over 24 years	187,151	over 9 years
1,159,180	over 23 years	(207,302)	over 8 years
1,378,379	over 22 years	(764,517)	over 7 years
(2,858,245)	over 21 years	(148,110)	over 6 years
236,017	over 20 years	408,163	over 5 years
2,411,362	over 19 years	0	over 4 years
2,401,837	over 18 years	0	over 3 years
1,921,029	over 17 years	0	over 2 years
1,888,513	over 16 years	0	over 1 year
		<b>\$ 7,101,139</b>	<b>TOTAL</b>

Level percent-of-payroll financing of unfunded actuarial accrued liabilities treats each generation of taxpayers equally during the financing period. The alternative, level-dollar financing, produces declining percent-of-payroll contributions and places a greater relative burden on current taxpayers.

The annual rate of increase in member payroll used to compute the level percent-of-payroll contribution is the same rate of payroll growth used to compute actuarial liabilities and costs. It reflects across-the-board salary increases not group size increases.

If future payroll growth is less than the assumed rate due to smaller than projected salary increases, the percent-of-payroll contribution rate for unfunded actuarial accrued liabilities will tend to decline.

If future payroll growth is less than the assumed rate due to decreases in the number of members, the percent-of-payroll contribution rate for unfunded actuarial accrued liabilities will tend to increase but dollar contributions will be less than indicated in the preceding schedule.

**LEVEL PERCENT OF ACTIVE MEMBER COVERED PAYROLL  
AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY\*  
(\$ AMOUNTS IN THOUSANDS)  
UTILITY AUTHORITY MEMBERS**

Year	Pay		Unfunded		Contribution	
	Inflated Dollars	Constant Dollars	Inflated Dollars	Constant Dollars	Inflated Dollars	Constant Dollars
2016	\$12,588	\$12,588	\$13,299	\$13,299	\$ 820	\$ 820
2017	13,092	12,588	13,461	12,943	853	820
2018	13,616	12,588	13,601	12,575	887	820
2019	14,160	12,588	13,716	12,193	643	572
2020	14,727	12,588	14,098	12,051	633	541
2025	17,917	12,588	15,411	10,828	1,148	806
2030	21,799	12,588	13,269	7,663	2,317	1,338
2035	26,522	12,588	6,805	3,230	734	348
2045	39,259	12,588	855	274	870	279
2046	40,829	12,588	0	0	0	0

* \$	5,155,342	over 30 years	\$	454,123	over 15 years
	462,885	over 29 years		(996,984)	over 14 years
	(1,991,856)	over 28 years		(1,018,109)	over 13 years
	(1,184,589)	over 27 years		(2,194,238)	over 12 years
	(1,663,827)	over 26 years		(1,815,826)	over 11 years
	4,159,962	over 25 years		673,077	over 10 years
	2,485,358	over 24 years		211,938	over 9 years
	2,140,980	over 23 years		(660,113)	over 8 years
	1,696,299	over 22 years		(851,205)	over 7 years
	(2,202,183)	over 21 years		(205,424)	over 6 years
	(2,593,168)	over 20 years		(104,721)	over 5 years
	5,723,171	over 19 years		114,410	over 4 years
	1,514,231	over 18 years		707,473	over 3 years
	2,574,488	over 17 years		0	over 2 years
	2,707,062	over 16 years		0	over 1 year
				<b>\$ 13,298,556</b>	<b>TOTAL</b>

Level percent-of-payroll financing of unfunded actuarial accrued liabilities treats each generation of taxpayers equally during the financing period. The alternative, level-dollar financing, produces declining percent-of-payroll contributions and places a greater relative burden on current taxpayers.

The annual rate of increase in member payroll used to compute the level percent-of-payroll contribution is the same rate of payroll growth used to compute actuarial liabilities and costs. It reflects across-the-board salary increases not group size increases.

If future payroll growth is less than the assumed rate due to smaller than projected salary increases, the percent-of-payroll contribution rate for unfunded actuarial accrued liabilities will tend to decline.

If future payroll growth is less than the assumed rate due to decreases in the number of members, the percent-of-payroll contribution rate for unfunded actuarial accrued liabilities will tend to increase but dollar contributions will be less than indicated in the preceding schedule.

**LEVEL PERCENT OF ACTIVE MEMBER COVERED PAYROLL  
AMORTIZATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITY\*  
(\$ AMOUNTS IN THOUSANDS)  
POLICE MEMBERS**

Year	Pay		Unfunded		Contribution	
	Inflated Dollars	Constant Dollars	Inflated Dollars	Constant Dollars	Inflated Dollars	Constant Dollars
2016	\$ 6,167	\$6,167	\$2,374	\$2,374	\$ (72)	\$ (72)
2017	6,413	6,167	2,634	2,533	(75)	(72)
2018	6,670	6,167	2,918	2,697	(78)	(72)
2019	6,937	6,167	3,226	2,868	(81)	(72)
2020	7,214	6,167	3,562	3,044	(84)	(72)
2025	8,777	6,167	4,457	3,132	381	268
2030	10,679	6,167	2,063	1,191	1,080	624
2035	12,992	6,167	(1,646)	(781)	(327)	(155)
2045	19,232	6,167	19	6	19	6
2046	20,001	6,167	0	0	0	0

* \$	114,776	over 30 years	\$	1,128,485	over 15 years
	(120,781)	over 29 years		(391,299)	over 14 years
	(1,435,549)	over 28 years		(1,328,972)	over 13 years
	(1,381,028)	over 27 years		1,778,920	over 12 years
	111,635	over 26 years		(2,260,863)	over 11 years
	900,951	over 25 years		(1,065,680)	over 10 years
	644,364	over 24 years		(53,730)	over 9 years
	522,683	over 23 years		(428,568)	over 8 years
	627,127	over 22 years		(827,705)	over 7 years
	(3,068,644)	over 21 years		(168,986)	over 6 years
	537,256	over 20 years		(487,882)	over 5 years
	3,780,377	over 19 years		0	over 4 years
	2,315,573	over 18 years		0	over 3 years
	1,502,620	over 17 years		0	over 2 years
	1,429,088	over 16 years		0	over 1 year
				<b>\$ 2,374,168</b>	<b>TOTAL</b>

Level percent-of-payroll financing of unfunded actuarial accrued liabilities treats each generation of taxpayers equally during the financing period. The alternative, level-dollar financing, produces declining percent-of-payroll contributions and places a greater relative burden on current taxpayers.

The annual rate of increase in member payroll used to compute the level percent-of-payroll contribution is the same rate of payroll growth used to compute actuarial liabilities and costs. It reflects across-the-board salary increases not group size increases.

If future payroll growth is less than the assumed rate due to smaller than projected salary increases, the percent-of-payroll contribution rate for unfunded actuarial accrued liabilities will tend to decline.

If future payroll growth is less than the assumed rate due to decreases in the number of members, the percent-of-payroll contribution rate for unfunded actuarial accrued liabilities will tend to increase but dollar contributions will be less than indicated in the preceding schedule.

## ACTUARIAL ESTIMATES USED FOR THE VALUATION

Funding objective contribution requirements and actuarial present values are calculated by applying estimates of future activities (actuarial estimates) to the benefit provisions and people information of the System.

The principal areas of risk which require estimates of future activities are:

- (i) long-term rates of investment return to be generated by the assets of the System
- (ii) patterns of pay increases to members
- (iii) rates of mortality among members, retirants, and beneficiaries
- (iv) rates of withdrawal of active members
- (v) rates of disability among active members
- (vi) the age patterns of actual retirements

In a valuation, the monetary effect of each activity is calculated for as long as a present covered person survives - - - a period of time which can be as long as a century.

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Actual activities of the System will not coincide exactly with estimated activities, due to the nature of the activities. Each valuation provides a complete recalculation of estimated future activities and takes into account the effect of differences between estimated and actual activities to date. The result is a continual series of adjustments (usually small) to the computed contribution rate.

From time to time one or more of the estimates are modified to reflect experience trends (but not random or temporary year-to-year fluctuations).

In accordance with Chapter 112, Florida Statutes, 112.661(9), the Retirement Board adopts the assumed rate of return assumption used for actuarial valuation purposes. The actuarial assumptions are set by the Board. The rationale for certain actuarial assumptions is described in the October 1, 1995 through September 30, 2000 experience study report. All actuarial assumptions are estimates of future experience.

Actuarial estimates regarding the net investment return, inflation, real investment return, and salary increase rates are used, in combination with the other assumptions, to (i) determine the present value of amounts expected to be paid in the future and (ii) establish rates of contribution which are expected to remain relatively level as a percent of total valuation payroll.

**Net Rate of Investment Return.** 7.75% per annum, compounded annually, net of investment expenses.

**Inflation.** 2.75% per annum, compounded annually. This is the rate at which growth in the supply of money and credit is estimated to exceed growth in the supply of goods and services. It may be thought of as the rate of depreciation of the purchasing power of the dollar. There are a number of indices for measuring the inflation rate. The recent inflation rate, as measured by the Consumer Price Index, has been:

	<b>Year Ended September 30</b>					<b>Average for Period</b>
	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	
Actual	1.5%	0.0%	1.7%	1.2%	2.0%	1.3%
Assumed	3.0%	4.5%	4.5%	4.5%	4.5%	4.2%

**Real Investment Return.** 5.00% per annum, compounded annually. This is the rate of return assumed to be produced by investing a pool of assets in an inflation-free environment. Recent real investment return for the Retirement and Benefit System has been:

	<b>Year Ended September 30</b>					<b>Average for Period</b>
	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>2012</b>	
Total Rate of Return	8.9%	10.8%	11.0%	10.8%	8.0%	9.9%
Less Inflation Rate	1.5%	0.0%	1.7%	1.2%	2.0%	1.3%
Actual Real Rate of Return	7.4%	10.8%	9.3%	9.6%	6.0%	8.6%
Assumed Real Rate of Return	5.0%	3.5%	3.5%	3.5%	3.5%	3.8%
Assumed Net Rate of Return	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%

The total investment return rate was computed using the approximate formula  $i = I$  divided by  $1/2 (A + B - I)$ , where  $I$  is actual realized investment income plus market value adjustments,  $A$  is the beginning of year asset value, and  $B$  is the end of year asset value.

The preceding investment return rates reflect the particular characteristics of this Retirement and Benefit System and should not be used to measure an investment advisor's performance or for comparison with other retirement systems. Such use will usually mislead.



**Salary Increases.** Employee salaries are estimated to increase between the date of hire and date of retirement. Salary increases occur in recognition of (i) individual merit and seniority, (ii) inflation related depreciation of the purchasing power of salaries, and (iii) competition from other employers for personnel.

A schedule of estimated rates of increases in individual salaries for sample ages follows:

<b>Annual Rates of Salary Increases for Sample Ages</b>						
<b>Age</b>	<b>General and Utilities Authority</b>			<b>Police Officers</b>		
	<b>Merit &amp; Seniority</b>	<b>Wage Inflation</b>	<b>Total</b>	<b>Merit &amp; Seniority</b>	<b>Wage Inflation</b>	<b>Total</b>
20	2.5 %	4.0 %	6.5 %	4.0 %	4.0 %	8.0 %
30	1.7 %	4.0 %	5.7 %	2.8 %	4.0 %	6.8 %
40	1.1 %	4.0 %	5.1 %	2.2 %	4.0 %	6.2 %
50	0.6 %	4.0 %	4.6 %	1.2 %	4.0 %	5.2 %
55	0.5 %	4.0 %	4.5 %	0.7 %	4.0 %	4.7 %
60	0.5 %	4.0 %	4.5 %	0.2 %	4.0 %	4.2 %

The merit and seniority rates for General and Utilities Authority were first used in the September 30, 2016 valuation.

The merit and seniority rates for Police Officers were first used in the September 30, 2001 valuation.

It is estimated that the group size will remain constant and that total payroll for the group will increase at the rate of the general increase in wage levels due to inflation, which in this case is 4.0%.

A schedule of recent salary change experience follows:

	% Change in Salaries					Average
	Year Ended September 30					
	2016	2015	2014	2013	2012	5-Year
Rate of Change in Salaries						
- Total	<b>10.1</b> %	3.9 %	4.5 %	4.2 %	3.2 %	5.2 %
- General	<b>11.9</b>	1.0	3.5	3.7	3.9	4.7
- U.A.	<b>8.8</b>	5.2	4.0	2.8	1.6	4.5
- Police	<b>10.6</b>	5.2	6.9	7.9	5.4	7.2
Expected - Total						
- Total	<b>5.0</b>	5.8	5.9	5.8	5.8	5.7 %
- General	<b>4.7</b>	5.5	5.6	5.6	5.6	5.4
- U.A.	<b>4.8</b>	5.7	5.7	5.7	5.7	5.5
- Police	<b>6.3</b>	6.8	6.8	6.7	6.8	6.7

	% Change in Total Payroll						
	Year Ended September 30					Average*	
	2016	2015	2014	2013	2012	5-Year	10-Year
- Total	<b>7.9</b> %	1.3 %	(0.2) %	(2.5) %	0.4 %	1.4 %	(0.1) %
- General	<b>18.3</b>	(6.7)	1.9	(10.0)	1.6	1.4	(1.4)
- U.A.	<b>6.3</b>	7.0	(4.0)	(2.3)	(0.8)	1.1	1.1
- Police	<b>(1.3)</b>	1.4	4.5	8.9	1.0	1.9	(0.5)

\*5-year and 10-year averages include DROP payroll.

In order to achieve the funding objective of a contribution rate which remains level as a percent-of-payroll, the total rate of investment return must exceed the rate of average increase in salaries by an amount equal to the estimated real investment return rate.

**Mortality Tables.** The mortality tables used to measure retired life mortality were the Florida Retirement System (FRS) Mortality Tables, as described below:

- Male non-disabled retiree mortality (General & Utilities Authority): fully generational mortality. 50% of the RP-2000 Annuitant White Collar Table and 50% of the RP-2000 Annuitant Blue Collar Table, projected with scale BB. Sample values shown below.
- Male non-disabled retiree mortality (Police): fully generational mortality. 10% of the RP-2000 Annuitant White Collar Table and 90% of the RP-2000 Annuitant Blue Collar Table, projected with scale BB. Sample values shown below.
- Female non-disabled retiree mortality (All Divisions): fully generational mortality. 100% of the RP-2000 Annuitant White Collar Table, projected with scale BB. Sample values shown below.
- Male employee mortality (General & Utilities Authority): fully generational mortality. 50% of the RP-2000 Employee White Collar Table and 50% of the RP-2000 Employee Blue Collar Table, projected with scale BB.
- Male employee mortality (Police): fully generational mortality. 10% of the RP-2000 Employee White Collar Table and 90% of the RP-2000 Employee Blue Collar Table, projected with scale BB.
- Female employee mortality (All Divisions): fully generational mortality. 100% of the RP-2000 Employee White Collar Table, projected with scale BB.
- Male disabled mortality (General & Utilities Authority): 100% of the RP-2000 Disabled Male Table set back 4 years.
- Male disabled mortality (Police): 60% of the RP-2000 Disabled Male Table set back 4 years and 40% of the RP-2000 Annuitant White Collar Table.
- Female disabled mortality (General & Utilities Authority): 100% of the RP-2000 Disabled Female Table, set forward 2 years.
- Female disabled mortality (Police): 60% of the RP-2000 Disabled Female Table, set forward 2 years and 40% of the RP-2000 Annuitant White Collar Table.

Sample Ages in 2016	Single Life Retirement Values					
	Present Value of \$1 Monthly for Life			Future Life Expectancy (Years)		
	General & UA Males	Police Males	All Divisions Females	General & UA Males	Police Males	All Divisions Females
45	\$144.44	\$143.65	\$149.61	39.22	38.50	43.28
50	140.28	139.03	145.67	34.51	33.74	38.17
55	134.92	133.12	140.38	29.88	29.10	33.15
60	127.15	125.14	133.34	25.21	24.52	28.25
65	116.92	114.90	124.08	20.69	20.13	23.51
70	104.26	102.30	112.61	16.45	16.01	19.06
75	89.40	87.77	99.06	12.60	12.30	14.99
80	73.31	72.18	83.79	9.28	9.11	11.38

The margin for future mortality improvements is included in projection scales. 100% of deaths were assumed to be non-duty related.

**Rates of separation from active membership.** The rates do not apply to members eligible to retire and do not include separation on account of death or disability. This estimate measures the probabilities of members remaining in employment.

Samples Ages	Years of Service	Percent Separating Within Next Year		
		General and Utilities Authority	Police	
ALL	0	22.00 %	15.00 %	
	1	16.50	12.00	
	2	12.00	10.00	
	3	10.00	8.00	
	4	8.00	6.00	
20	5 & Over	8.00	6.00	
25		8.00	6.00	
30		8.00	6.00	
35		8.00	6.00	
40		8.00	6.00	
45		5.00	3.50	
50		2.25	1.00	
55		2.25	1.00	
60		2.25	1.00	
65		2.25	1.00	

The rates for all divisions were first used in the September 30, 2016 valuation.

**Rates of Disability.** These estimates represent the probabilities of active members becoming disabled.

Sample Ages	Percent Becoming Disabled Within Next Year	
	General and Utilities Authority	Police
20	0.04 %	0.07 %
25	0.04	0.09
30	0.04	0.10
35	0.05	0.14
40	0.10	0.21
45	0.17	0.32
50	0.36	0.52
55	0.59	0.92
60	0.90	1.53
65	1.00	1.65

The mortality table was set forward ten years for projecting disability costs. 100% of the disability retirements were assumed to be non-duty related for General and Utilities Authority members. 75% of the disability retirements were assumed to be non-duty for Police members.

**Rates of Retirement.** These rates are used to measure the probabilities of an eligible member retiring during the next year.

Service Years	Service Based		Age Based		
	General and Utilities Authority	Police	Retirement Ages	General and Utilities Authority	Police
25	40 %	75 %	55		35 %
26	40	75	56		30
27	40	75	57		30
28	40	75	58		30
29	40	75	59		30
30	40	100	60	10 %	30
31	40	100	61	5	30
32	40	100	62	12	30
33	40	100	63	6	30
34	40	100	64	14	40
35	100	100	65	65	100
			66	25	
			67	30	
			68	40	
			69	50	
			70	100	

These rates were first used for the September 30, 1995 valuation with the exception of the Police service based rates, which were first used for the September 30, 2000 valuation, Police age based rates which were first used for the September 30, 2001 valuation, and Utilities Authority service based rates which were first used for the September 30, 2007 valuation.

**Marital Status.** It is estimated that 80% of active members who meet the age and service requirements for pre-retirement survivor benefits are married. Female spouses are estimated to be 3 years younger than the male participant. Male spouses are estimated to be 3 years older than the female participant.

*Vested members* who terminate with a benefit worth less than 100% of their own accumulated contributions were presumed to elect a refund of accumulated contributions and forfeit the vested benefit.

*Lump sum payments* included in the calculation of the average pay upon which benefits are computed were estimated to increase benefits by the following percents.

General members	3.5 %
Utilities Authority members	3.0
Police members	4.0

*Administrative Expenses.* Administrative expenses for the next year are assumed to be equal to the previous year's amount.

*Investment Expenses.* Investment expenses are paid out of investment income.

*Active Member Group Size.* The valuation was based on a constant active member group size.

## DEFINITIONS OF TECHNICAL TERMS

**Accrued Service.** Service credited under the system which was rendered before the date of the actuarial valuation.

**Actuarial Accrued Liability.** The difference between the actuarial present value of future benefit payments and the actuarial present value of future normal costs. Also referred to as "accrued liability" or "past service liability."

**Actuarial Cost Method.** A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future benefit payments" between future normal costs and actuarial accrued liability. Sometimes referred to as the "actuarial valuation cost method."

**Actuarial Equivalent.** A single amount or series of amounts of equal actuarial present value to another single amount or series of amounts, computed on the basis of appropriate actuarial activities.

**Actuarial Present Value.** The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payment. Also referred to as "present value."

**Amortization.** Paying off an interest-discounted amount with periodic payments of interest and principal -- as opposed to paying off with lump sum payment.

**Experience Estimates (Assumptions).** Estimates of expected future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement estimates (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic estimates (salary increases and investment income) consist of the underlying rates in an inflation-free environment plus a provision for a long-term average rate of inflation.

**Experience Gain (Loss).** The difference between actual actuarial costs and estimated actuarial costs -- during the period between two valuation dates.

**Funding Value of Assets.** The actuarial value of assets used to determine contribution amounts.

**Normal Cost.** The actuarial cost allocated to the current year by the actuarial cost method. Sometimes referred to as "current service cost."

**Unfunded Actuarial Accrued Liability.** The difference between the actuarial accrued liability and the actuarial value of system assets. Sometimes referred to as "unfunded past service liability," "unfunded accrued liability" or "unfunded supplemental present value."

Most retirement systems have an unfunded actuarial accrued liability. They arise each time new benefits are added and each time an experience loss is realized.

Unfunded actuarial accrued liability does not represent a debt that is payable today. What is important is the ability to control the amount of unfunded actuarial accrued liability and the trend in its amount (after due allowance for devaluation of the dollar).



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## **SECTION E**

### **ADDITIONAL DISCLOSURE INFORMATION**

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**GASB Statements No. 67 and No. 68 are the accounting standards which replaced GASB Statements No. 25 and No. 27. GASB Statement No. 67 is first effective for fiscal year 2014 and GASB Statement No. 68 is first effective for fiscal year 2015. A separate GASB Statements No. 67 and No. 68 report has been issued outside of this report. This section contains historical GASB Statements No. 25 and No. 27 reporting information for prior fiscal years and illustrative information for fiscal year 2015 and after.**

## ADDITIONAL DISCLOSURE INFORMATION

### SCHEDULE OF FUNDING PROGRESS (DOLLAR AMOUNTS IN THOUSANDS)

Valuation Date	Valuation Assets	AAL*	Funded Ratio	Unfunded AAL*	Member Payroll	Ratio to Payroll
9/30/07 (b)	\$ 135,944	\$ 138,610	98 %	\$ 2,666	\$30,984	9 %
9/30/08	143,467	150,475	95	7,008	32,952	21
9/30/09	147,094	158,755	93	11,661	31,016	38
9/30/10 (b)	148,691	164,865	90	16,174	26,779	60
9/30/11 (b)	142,463	167,683	85	25,220	25,744	98
9/30/12 (b)	147,618	171,745	86	24,127	25,842	93
9/30/13	157,145	177,505	89	20,360	25,199	81
9/30/14	167,451	182,407	92	14,956	25,150	59
9/30/15 (b)	177,624	191,986	93	14,362	25,475	56
<b>9/30/16 (a)</b>	<b>185,171</b>	<b>198,049</b>	<b>93</b>	<b>12,878</b>	<b>27,493</b>	<b>47</b>
<b>9/30/16 (b)</b>	<b>185,171</b>	<b>207,945</b>	<b>89</b>	<b>22,774</b>	<b>27,493</b>	<b>83</b>

\* Actuarial Accrued Liabilities.

(a) Before changes in benefit provisions and/or actuarial assumptions.

(b) After changes in benefit provisions and/or actuarial assumptions.

### SCHEDULE OF EMPLOYER CONTRIBUTIONS

Fiscal Year	Aggregate Contribution Rates as Percents of Valuation Payroll	Projected Dollar Contribution Based on Valuation Payroll #	Actual Contribution Based on Actual Payroll@
08/09	10.40 %	\$ 3,517,935	\$ 3,580,089
09/10	11.06	3,978,173	3,377,350
10/11	11.81	3,999,560	3,181,447
11/12	13.46	3,937,037	3,566,751
12/13	17.29	4,860,538	4,266,803
13/14	16.57	4,676,221	4,356,127
14/15	15.42	4,242,676	4,093,268
15/16	15.28	4,196,009	4,211,311
16/17	15.44	4,296,532	
<b>17/18</b>	<b>16.41</b>	<b>4,878,739</b>	

# Contribution for 08/09 fiscal year and beyond excludes general fire district.

@ Actual Employer contributions are determined by applying the Employer's contribution rate to the emerging payroll. Projected funding requirement is based on a stable work force and projected salary increases.

## ADDITIONAL DISCLOSURE INFORMATION

### SUPPLEMENTARY INFORMATION

The information presented in the additional disclosure schedules was determined as part of the actuarial valuations at the dates indicated. Additional information as of the latest actuarial valuation follows:

Valuation Date	September 30, 2016
Actuarial Cost Method	Individual Entry Age
Amortization Method	Level Percent-of-Payroll, Closed
Remaining Amortization Periods#	3-30 years
Asset Valuation Method	4-year smoothed market
Actuarial Assumptions:	
Investment Rate of Return*	7.75%
Projected Salary Increases**	General & U.A.: 4.0% - 6.5% Police: 4.0% - 8.0%
* Includes Price Inflation at	2.75%
**Includes Wage Inflation and other general increases at	4.00%
Cost-of-living adjustments	None
Retirees and beneficiaries receiving benefits	499
Terminated plan members entitled to but not yet receiving benefits	42
Active plan members	
- Vested	315
- Non-vested	<u>217</u>
Total	1,073

# The periods are in compliance with Florida Statutes and Actuarial Standards of Practice, but do not necessarily produce an Annual Required Contribution with an aggregate amortization of the unfunded actuarial accrued liability under 30 years.

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**SECTION F**

STATE REQUIRED DATA

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## ACTUARIAL PRESENT VALUE OF ACCRUED BENEFITS (\$ IN THOUSANDS)\*

	September 30, 2016								September 30, 2015			
	After				Before				General Members	Utilities Authority	Police Members	Total
	General Members	Utilities Authority	Police Members	Total	General Members	Utilities Authority	Police Members	Total				
(i) Actuarial present value of active member benefits:												
Service retirement	\$25,628	\$37,907	\$23,202	\$ 86,737	\$25,043	\$36,956	\$26,138	\$ 88,137	\$22,494	\$33,842	\$26,923	\$ 83,259
Vested termination benefits	2,774	3,968	1,369	8,111	2,437	3,498	742	6,677	2,386	3,422	768	6,576
Disability retirement	666	895	881	2,442	733	1,002	1,082	2,817	688	962	1,115	2,765
Survivor benefits (pre-retirement)	868	1,232	412	2,512	1,034	1,440	453	2,927	947	1,362	464	2,773
Termination benefits - refunds	244	479	198	921	243	471	155	869	144	334	156	634
Total	30,180	44,481	26,062	100,723	29,490	43,367	28,570	101,427	26,659	39,922	29,426	96,007
(ii) Actuarial present value of terminated vested members	1,707	1,212	244	3,163	1,600	1,143	228	2,971	1,068	1,284	295	2,647
(iii) Actuarial present value of retired members & beneficiaries:												
Present value of benefits	40,012	60,836	32,505	133,353	37,856	57,819	31,281	126,956	38,143	57,481	29,608	125,232
Reserve	0	0	0	0	0	0	0	0	0	0	0	0
Total	40,012	60,836	32,505	133,353	37,856	57,819	31,281	126,956	38,143	57,481	29,608	125,232
(iv) Total actuarial present value of future benefit payments	71,899	106,529	58,811	237,239	68,946	102,329	60,079	231,354	65,870	98,687	59,329	223,886
(v) Present value of active member future payroll	61,084	88,338	46,620	196,043	64,885	94,385	54,672	213,942	55,842	90,682	54,831	201,355
(vi) Present value of future active member contributions	3,152	5,442	2,406	10,999	3,348	5,814	2,821	11,983	2,881	5,586	2,829	11,297
(vii) Active member accumulated contributions	4,288	7,746	3,345	15,380	4,288	7,746	3,345	15,380	4,263	7,283	3,559	15,105
(viii) Plan costs for fiscal year beginning October 1, 2017												
Normal costs												
Service pensions	11.44%	10.52%	12.68%		11.67%	10.80%	16.47%		11.63%	10.90%	16.74%	
Disability pensions	0.46%	0.42%	0.92%		0.53%	0.49%	1.15%		0.54%	0.50%	1.17%	
Death-in-service pensions	0.51%	0.50%	0.37%		0.62%	0.60%	0.41%		0.63%	0.62%	0.42%	
Deferred service pensions	2.26%	2.30%	1.87%		2.01%	2.05%	0.86%		2.21%	2.08%	0.88%	
Refunds of member contributions	0.76%	0.91%	0.55%		0.64%	0.76%	0.43%		0.57%	0.73%	0.41%	
Total normal cost	15.43%	14.65%	16.39%		15.47%	14.70%	19.32%		15.58%	14.83%	19.62%	
Payment to amortize unf'd act. accr. liab.	3.98%	6.52%	0.00%		1.71%	4.27%	0.00%		2.17%	5.01%	0.00%	
Administrative expenses	0.79%	0.79%	0.79%		0.79%	0.79%	0.79%		0.69%	0.69%	0.69%	
FS112.64(5) Requirement/Temporary Funding Credits	2.31%	2.12%	-0.04%		1.28%	1.52%	-1.90%		1.61%	1.86%	-0.54%	
Amount to be paid by participants	5.16%	6.16%	5.16%		5.16%	6.16%	5.16%		5.16%	6.16%	5.16%	
Expected plan sponsor contribution												
% of payroll	17.35%	17.92%	11.98%	16.41%	14.09%	15.12%	13.05%	14.33%	14.89%	16.23%	14.61%	15.44%
dollars	1,640	2,440	799	4,879	1,344	2,079	879	4,302	1,201	2,099	997	4,297

\* Totals may be off due to rounding.

## ACTUARIAL PRESENT VALUE OF ACCRUED BENEFITS (\$ IN THOUSANDS)\*

	September 30, 2016								September 30, 2015			
	After				Before				General Members	Utilities Authority	Police Members	Total
	General Members	Utilities Authority	Police Members	Total	General Members	Utilities Authority	Police Members	Total				
Actuarial Present Value of Accrued Benefits (calculated in accordance with FASB Statement No. 35)												
(i) Vested accrued benefits												
Retired members and beneficiaries	\$ 40,012	\$ 60,836	\$ 32,505	\$ 133,353	\$ 37,856	\$ 57,819	\$ 31,281	\$ 126,956	\$ 38,143	\$ 57,481	\$ 29,608	\$ 125,232
Terminated members	1,707	1,212	244	3,163	1,600	1,143	228	2,971	1,068	1,284	295	2,647
Active members (includes non-forfeitable accum. member contributions)	12,683	20,415	12,063	45,161	11,956	19,495	12,068	43,519	11,231	18,049	13,177	42,457
Total	\$ 54,402	\$ 82,463	\$ 44,812	\$ 181,677	\$ 51,412	\$ 78,457	\$ 43,577	\$ 173,446	\$ 50,442	\$ 76,814	\$ 43,080	\$ 170,336
(ii) Non-vested accrued benefits	1,030	1,961	1,071	4,062	1,111	2,103	1,317	4,531	806	1,725	1,103	3,634
(iii) Total actuarial p.v. of accrued benefits	\$ 55,432	\$ 84,424	\$ 45,883	\$ 185,739	\$ 52,523	\$ 80,560	\$ 44,894	\$ 177,977	\$ 51,248	\$ 78,539	\$ 44,183	\$ 173,970
(iv) Actuarial p.v. of accrued benefits at begin. of year	\$ 51,248	\$ 78,539	\$ 44,183	\$ 173,970	\$ 51,248	\$ 78,539	\$ 44,183	\$ 173,970	\$ 48,843	\$ 73,960	\$ 41,051	\$ 163,855
(v) Changes attributable to:												
Amendments	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Assumption change	2,909	3,864	989	7,762	-	-	-	-	1,286	1,959	1,125	4,370
Operation of decrements	5,433	8,078	3,872	17,383	5,433	8,078	3,872	17,383	5,198	8,485	4,879	18,562
Benefit payments	(4,158)	(6,057)	(3,161)	(13,376)	(4,158)	(6,057)	(3,161)	(13,376)	(4,079)	(5,865)	(2,872)	(12,816)
Other	-	-	-	-	-	-	-	-	-	-	-	-
(vi) Net change	4,184	5,885	1,700	11,769	1,275	2,021	711	4,007	2,405	4,579	3,132	10,116
(vii) Actuarial p.v. of Accr. benefits at end of year	\$ 55,432	\$ 84,424	\$ 45,883	\$ 185,739	\$ 52,523	\$ 80,560	\$ 44,894	\$ 177,977	\$ 51,248	\$ 78,539	\$ 44,183	\$ 173,970

\* Totals may be off due to rounding.

## RECONCILIATION OF MEMBERSHIP DATA

	<b>From 10/1/15 To 9/30/16</b>	<b>From 10/1/14 To 9/30/15</b>
<b>A. Active Members</b>		
1. Number Included in Last Valuation	520	526
2. New Members Included in Current Valuation	81	55
3. Non-Vested Employment Terminations	(40)	(29)
4. Vested Employment Terminations	(12)	(8)
5. Service Retirements	(17)	(20)
6. Disability Retirements	0	(2)
7. Deaths	0	(2)
8. Other	0	0
9. Number Included in this Valuation	532	520
<b>B. Terminated Vested Members</b>		
1. Number Included in Last Valuation	37	31
2. Additions from Active Members	12	8
3. Lump Sum Payments	(3)	0
4. Payments Commenced	(3)	(2)
5. Deaths	0	0
6. Other	(1)	0
7. Number Included in this Valuation	42	37
<b>C. Service Retirees, Disability Retirees and Beneficiaries</b>		
1. Number Included in Last Valuation	501	489
2. Additions from Active Members	16	22
3. Additions from Terminated Vested Members	3	2
4. Removals Resulting in No Further Payments	(26)	(19)
5. Deaths Resulting in New Survivor Benefits	5	7
6. Other	0	0
7. Number Included in this Valuation	499	501

March 14, 2017

Ms. Johnna Morris, CGFO, CPPT, MBA  
Director of Finance  
City of Fort Pierce Retirement and Benefit System  
100 North U.S. Highway 1  
Fort Pierce, Florida 34954-1480

Dear Johnna:

Enclosed are 10 copies of the September 30, 2016 Annual Actuarial Valuation of the City of Fort Pierce Retirement and Benefit System.

As directed by the Board, we have sent a copy directly to the following:

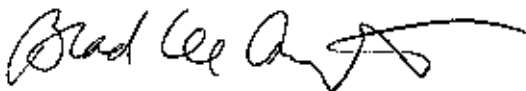
DiBartolomeo, McBee, Hartley & Barnes, P.A.

One copy should be sent, within 60 days to:

Bureau of Local Retirement Systems	Office of Municipal Police Officers'
Division of Retirement	& Firefighters' Retirement Funds
P.O. Box 9000	P.O. Box 3010
Tallahassee, Florida 32315-9000	Tallahassee, Florida 32315-3010

We welcome your questions and comments.

Sincerely yours,



Brad Lee Armstrong, ASA, FCA, EA, MAAA

BLA:bd  
Enclosures