

City of Jacksonville Beach Firefighters' Retirement System

Sixty-Seventh Annual Actuarial Valuation
October 1, 2017



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April 18, 2018

Board of Trustees
City of Jacksonville Beach
Firefighters' Retirement System
Jacksonville Beach, Florida

The results of the October 1, 2017 Annual Actuarial Valuation of the City of Jacksonville Beach Firefighters' Retirement System are presented in this report. The purpose of the annual valuation is to measure the System's funding progress and to determine the City's contribution rate for the fiscal year beginning October 1, 2018 in accordance with established funding policies. The results of the valuation may not be applicable for other purposes. Disclosures under the Governmental Accounting Board (GASB) Statements No. 67 and No. 68 were issued in a separate report.

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 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.

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

Valuation results, comments, recommendations and our certification are contained in Section A.

The valuation was based upon information compiled during the fiscal year ending September 30, 2017, furnished by the City, concerning pension fund benefits, financial transactions, and individual members, terminated members, retired members and beneficiaries. Data was checked for reasonableness and missing information, but was not audited. GRS is not responsible for the accuracy or completeness of the data provided to us. This information is summarized in Section B.

A description of the actuarial valuation process, actuarial assumptions and definitions of technical terms are contained in Section C. Additional Disclosure information is contained in Section D and a summary of valuation results in the State format is contained in Section E.

We believe the investment return assumption is at the upper boundary of what is reasonable. If the Board is unable to lower the investment return assumption below the current rate of 7.90% for the September 30, 2018 valuation and capital market assumptions do not improve, we will have to qualify the 2018 report, which will jeopardize State acceptance.

The computed contribution rate shown on page A-2 may be considered as a minimum contribution rate that complies with the Board's funding policy and/or state and city statutes. Users of this report should be aware that contributions made at that rate do not guarantee benefit security. Given the importance of benefit security to any retirement system, we suggest that contributions to the System in excess of those presented in this report be considered.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in Section C of this report. This report includes certain risk metrics but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment. We encourage a review and assessment of investment and other significant risks that may have a material effect on the plan's financial condition.

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 Jacksonville Beach Firefighters' Retirement 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. It is our opinion that the actuarial assumptions used for the valuation produce results which are reasonable.

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



SECTION A

**VALUATION RESULTS, COMMENTS, CONCLUSION,
RECOMMENDATIONS (IF ANY) AND STATEMENT BY
ENROLLED ACTUARY**

Funding Objective

The funding objective of the Retirement System is to establish and receive contributions, expressed as percents of active member payroll, which will achieve progress towards 100% funded status and will remain approximately level from year-to-year and will not have to be increased for future generations of citizens in the absence of benefit improvements. This objective is stated in the Ordinance and meets the requirements of Part VII, Chapter 112, Florida Statutes.

Contribution Rates

The Retirement System is supported by member contributions, property insurance premium tax monies received from the State pursuant to Chapters 175 Florida Statutes, City contributions, and investment income from Retirement System assets.

Contributions which satisfy the funding objective are determined by the actuarial valuation and are sufficient to:

- (1) cover the actuarial costs allocated to the current year (the normal cost) by the actuarial cost methods described in Section C; and
- (2) finance over a period of future years the actuarial costs not covered by present assets and anticipated future normal costs (Unfunded Actuarial Accrued Liability).

Contribution requirements for the Plan and fiscal year beginning October 1, 2018 are shown on page A-2.

Contributions to Finance Benefits of the Retirement System for the Plan Year Beginning October 1, 2018 to be Contributed During the Fiscal Year Beginning October 1, 2018

Contributions for	Contributions Expressed as Percents of UnDROPEd Active Member Payroll
<i>Normal Cost</i>	
Service pensions	9.05 %
Disability pensions	1.89
Survivor pensions	
Pre-retirement	0.52
Termination benefits	
Deferred service pensions	2.89
Refunds of member contributions	<u>0.94</u>
Total Normal Cost	15.29
<i>Unfunded Actuarial Accrued Liability ⁽¹⁾</i>	
Retired members and beneficiaries	0.00
Active and vested terminated members	<u>18.46</u>
Total unfunded actuarial accrued liability	18.46
<i>Administrative Expenses</i>	3.30
<i>Total Calculated Contribution Requirement</i>	37.05
<i>Adjustments to Calculated Contribution Requirement</i>	
Temporary full funding credit	0.00
FS 112.64(5) compliance	<u>0.22</u>
Total adjustments	0.22
<i>Total Adjusted Contribution Requirement</i>	37.27 %
Member portion	7.95 %
Estimated Chapter 175 and Additional Premium	7.56 %
Tax Revenue monies	
Estimated City portion	21.76 %

⁽¹⁾ *Unfunded Actuarial Accrued Liability was financed as level percents of unDROPEd member payroll. Please refer to page A-11 for a schedule of financing periods.*

FS 112.64 requires that City contributions be deposited not less frequently than quarterly. FS 175.131 requires that Chapter 175 monies be deposited within 5 days of receipt from the State. Member contributions, which are in addition to the City/Chapter contributions, must be deposited immediately after each pay period.

Procedures for determining dollar contributions are shown on page A-3.

Comparative contribution amounts for prior fiscal years are shown on page A-13.

Chapter 99-1, Laws of Florida Minimum Compliance and Extra Benefits

	Prior Year			Cumulative		
	Premium Tax Distributions	Supplemental Compensation Fund	Total	Premium Tax Distributions	Supplemental Compensation Fund	Total
A. Additional premium tax revenues as of 9/30/2016			\$ 27,608			
B. Chapter 175 receipts during fiscal year ending 9/30/2017	\$154,984	\$8,433	163,417	\$2,410,519	\$976,188	\$3,386,707
C. Chapter 175 "frozen" receipts during fiscal year ending 9/30/2017	77,527	3,082	80,609	1,473,013	55,293	1,528,306
D. Qualifying benefit improvements since Chapter 99-1 effective date	129,254	0	129,254	1,819,878	51,395	1,871,273
E. Additional premium tax revenues as of 9/30/2017 [A + B - C - D] not less than 0			27,608			

Determining Dollar Contributions

For any period of time, the percent-of-payroll contribution rate needs to be converted to dollar amounts. We recommend the following procedure.

The City/Chapter contribution amount is indicated in the following schedule. Included in these amounts is the projected increase in salary level between the valuation date and the fiscal year in which the contribution is made. The projection factor of 1.037733 $[(1.025)^{1.5}]$ is consistent with that used to calculate the actuarial liability. The member contribution amounts should not be used to reconcile actual member contributions.

Total Contribution Requirement	\$ 836,070
Less Member Contributions	178,341
Total Employer Contribution Requirement	657,730
Less Estimated Chapter 175 and Additional Premium	
Tax Revenue Monies	163,417
Estimated Base City Contribution	\$ 494,313 *

* *Chapter 175 Florida Statutes. The base City contribution amount may need to be increased if the amount received under the provisions of Chapter 175, Florida Statutes, is not sufficient to meet the total employer contribution requirement. CAUTION: If the amount received under the provisions of Chapter 175, Florida Statutes, exceeds \$209,863 the City may NOT use any of the excess to reduce the City contribution shown.*

The above City/Chapter contribution amounts are estimated to be contributed, on average, halfway through the fiscal year. If contributions are made on a later schedule, interest should be added at the rate of .64% (.0064) for each month of delay.

Funding Progress Achievement Indicators

There is no single all-encompassing measure of a retirement system's funding progress and current funded status.

A traditional measure has been the relationship of valuation assets to Unfunded Actuarial Accrued Liability - a measure that is influenced by the choice of actuarial cost method. This relationship is shown on page A-12.

We believe a better understanding of funding progress and status can be achieved using the following indicators.

Indicator (1) *The actuarial present value of gains or losses realized in the operation of the retirement system.* Gains and losses are expected to cancel each other over an economic cycle but sizable year-to-year fluctuations are common. An experience gain can result from assets increasing in value by more than anticipated, or by the system's obligation increasing by less than anticipated, or by other favorable combinations or deviation from expected asset and liability changes. Further details on the derivation of the gain (loss) are shown on page A-10.

Indicator (2) *The ratio of valuation assets to the actuarial present value of credited projected benefits* allocated in the proportion credited service is to projected total service. The ratio is expected to increase over time, but the basic trend may be interrupted by benefit improvements. This ratio is the most appropriate of the three described here for assessing the need for future contributions above the amounts needed to fund the normal cost.

Indicator (3) *The ratio of the unfunded actuarial present value of credited projected benefits to member payroll.* The unfunded actuarial present value of credited projected benefits is controlled by the funding program. The ratio to payroll is a relative index of condition where inflation is present in both components. The ratio is expected to decrease over time, but the basic trend may be interrupted by benefit improvements.

Funding Progress Indicators* - Historical Development (\$ amounts in thousands)

Valuation Date	Indicator (1)		Indicator (2)			Indicator (3)		
	Gain/(Loss)		Funding		Funded	Unfunded	Member	Ratio to
	Amount	% of AAL	Value of Assets	APVCPB [^]	Ratio	APVCPB [^]	Payroll	Payroll
10/1/1995 (a)	\$ 1,315	4.5 %	\$ 30,791	\$ 28,889	106.6 %	\$ (1,902)	\$ 10,601	(17.90) %
10/1/2000 (aa)	321	4.4	8,055	7,792	103.4	(263)	1,408	(18.69)
10/1/2003	49	0.5	8,049	8,213	98.0	164	1,345	12.21
10/1/2004	(705)	(8.0)	7,549	8,521	88.6	972	1,468	66.23
10/1/2005	(592)	(6.5)	7,483	8,998	83.2	1,515	1,651	91.74
10/1/2006	151	1.6	7,502	9,083	82.6	1,581	1,768	89.41
10/1/2007 (a)	289	3.0	8,044	9,356	86.0	1,312	1,726	76.00
10/1/2008	(248)	(2.5)	8,366	9,711	86.2	1,345	1,928	69.76
10/1/2009 (a)	(229)	(2.1)	8,468	10,588	80.0	2,120	1,985	106.80
10/1/2010	(457)	(4.0)	8,434	10,960	77.0	2,526	2,079	121.50
10/1/2011	(507)	(4.2)	8,363	11,421	73.2	3,058	2,120	144.26
10/1/2012	303	2.4	8,888	11,679	76.1	2,791	2,066	135.11
10/1/2013	242	1.9	9,701	12,119	80.1	2,418	1,836	131.67
10/1/2014 (a)	99	0.7	10,438	12,223	85.4	1,785	1,868	95.58
10/1/2015 (a)	35	0.3	11,135	13,520	82.4	2,386	1,848	129.07
10/1/2016 (a)	(267)	(1.8)	11,526	14,796	77.9	3,270	2,052	159.35
10/1/2017 (a)	(233)	(1.5)	12,223	15,748	77.6	3,524	2,162	163.04

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

(aa) After Minimum Benefit changes.

[^] AAL starting with 2014.

* None of these funding progress indicators are appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligations.

Comments and Conclusion

Comment A: We believe the investment return assumption is at the upper boundary of what is reasonable. If the Board is unable to lower the investment return assumption below the current rate of 7.90% for the September 30, 2018 valuation and capital market assumptions do not improve, we will have to qualify the 2018 report, which will jeopardize State acceptance.

Comment B: For the fiscal year ended September 30, 2017, the Firefighters' System had a \$233,079 experience loss. The loss was attributed to higher-than-expected pay increases (5.3% reported vs. 4.4% assumed), lower-than-expected recognized investment return on the funding value of assets (7.4% recognized vs. 7.9% assumed) due to unfavorable returns in two out of the last four years and lower-than-expected retiree mortality. The 10-year average payroll growth rate was 2.3% and compliance under Florida Statute 112.64(5) caused an increase in the City's contribution rate by 0.22% of payroll. Additional experience information is reported on pages B-7, B-13, C-4, C-5, and C-6. Before assumption changes, the funded ratio remained the same at 77.9% from 2016 to 2017 on a Funding Value of Assets basis and increased from 75.3% to 78.4% on a market value of assets basis.

Comment C: The method used for valuing the duty disability benefit was changed to project service granted to normal retirement age, should the member decide to have his or her benefit recomputed. These changes increased the computed contribution rate from 21.36% to 21.76% and decreased the funded ratio from 77.9% to 77.6%. The funded ratio on a market value basis is 78.2%.

Looking Forward: Due to the Board's use of a four-year smoothed market asset valuation method, greater-than-expected market returns during 2017 and lower-than-expected market returns during 2015 and 2016 have only been partially recognized in developing the Funding Value of Assets as of September 30, 2017. The Market Value of Assets currently exceeds the Funding Value of Assets by \$88,631. If losses from investment returns above the 7.90% assumed or losses from other sources do not emerge, this will create a downward pressure on contribution requirements and a coinciding upward pressure on the funded ratios in subsequent valuation years. An additional risk factor to the level of the contribution rate is the 10-year average payroll growth, which was 2.30% for the 10 years ending September 30, 2017. If the average payroll growth is lower in subsequent reports, this will increase the City's contribution requirement pursuant to compliance with Florida Statute 112.64(5).

Comments and Conclusion

Risks to Future Employer Contribution Requirements: There are ongoing risks to future employer contribution requirements to which the Retirement System is exposed, such as:

- Actual and Assumed Investment Rate of Return
- Actual and Assumed Mortality Rates
- Amortization Policy
- F.S. 112.64(5) Compliance Regarding Payroll Growth

We are recommending the Retirement System consider performing an experience study before the September 30, 2018 valuation.

Conclusion: It is the actuary's opinion that the required contribution rates determined by the most recent actuarial valuation are sufficient to meet the Retirement System's funding objective, presuming continued timely receipt of required contributions.

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 7.90% 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 schedule on page A-11, but may not be paid off in the definite future completely; 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.

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.

Statement by Enrolled Actuary

Statement by Enrolled Actuary: "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. 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."

4/18/2018

Date



Brad Lee Armstrong, ASA, EA, FCA, MAAA [17-5614]

Experience Gain (Loss) Year Ended October 1, 2017

DERIVATION

(1) UAAL* at start of year	\$3,269,951
(2) Normal cost for year (ER normal cost & expenses from the prior corresponding valuation x current valuation pay)	217,684
(3) Actual City/Chapter contribution	501,375
(4) Interest accrual .079 x [(1) + 1/2 [(2)-(3)]]	247,120
(5) Expected UAAL before changes	3,233,380
(6) Effect of timing/accounting	0
(7) Effect of assumption/cost method changes	57,945
(8) Effect of benefit changes	0
(9) Expected UAAL after changes	3,291,325
(10) Actual UAAL at end of year	3,524,404
(11) Gain (loss): (9) - (10)	\$ (233,079)
(12) % of AAL at start of year	(1.6)%

*UAAL represents Unfunded Actuarial Accrued Liability.

Valuation Date September 30	Actuarial Gain (Loss) As % of Beginning Accrued Liabilities
2008	(2.5) %
2009	(2.1)
2010	(4.0)
2011	(4.2)
2012	2.4
2013	1.9
2014	0.7
2015	0.3
2016	(2.0)
2017	(1.6)

Sources and Financing of Unfunded Actuarial Accrued Liability

Unfunded Actuarial Accrued Liability			Remaining Financing		Contribution			FS112.64(5) Compliance
Source of Unfunded Act. Accrued Liab.	Initial Amount	Fin. Per.	Current Amount	Period 9/30/2017	Amort. Factor	Dollar	% of Payroll	
Initial unfunded actuarial accrued liability								
			\$ (67,668)	3 yrs.	2.780379	\$ (24,338)	(1.13)%	0.00%
Changes from experience deviations.								
9/30/2002	637,858	25	653,218	10	7.821167	83,519	3.86%	0.04%
9/30/2003	(48,620)	25	(51,592)	11	8.404508	(6,139)	(0.28)%	(0.01)%
9/30/2004	704,589	25	768,358	12	8.958655	85,767	3.97%	0.04%
9/30/2005	591,854	25	658,761	13	9.485070	69,452	3.21%	0.04%
9/30/2006	(151,158)	25	(170,729)	14	9.985139	(17,098)	(0.79)%	(0.01)%
9/30/2007	(289,183)	25	(329,736)	15	10.460181	(31,523)	(1.46)%	(0.02)%
9/30/2008	248,390	25	284,709	16	10.911449	26,093	1.21%	0.01%
9/30/2009	228,877	25	262,717	17	11.340133	23,167	1.07%	0.02%
9/30/2010	457,120	25	510,310	18	11.747363	43,440	2.01%	0.03%
9/30/2011	506,544	25	556,986	19	12.134212	45,902	2.12%	0.04%
9/30/2012	(302,804)	25	(335,873)	20	12.501701	(26,866)	(1.24)%	(0.02)%
9/30/2013	(242,486)	25	(262,241)	21	12.850799	(20,407)	(0.94)%	(0.02)%
9/30/2014	(99,268)	25	(104,830)	22	13.182425	(7,952)	(0.37)%	0.00%
9/30/2015	(34,586)	25	(36,694)	23	13.497455	(2,719)	(0.13)%	0.00%
9/30/2016	266,779	25	274,855	24	13.796718	19,922	0.92%	0.02%
9/30/2017	233,079	25	233,079	25	14.081005	16,553	0.77%	0.01%
Changes from actuarial assumption and actuarial cost method revisions.								
9/30/1995	251,036	25 yrs.	117,756	3 yrs.	2.780379	42,352	1.96%	0.00%
9/30/2002	(152,905)	25	(156,587)	10	7.821167	(20,021)	(0.93)%	0.00%
9/30/2015	744,236	25	789,603	23	13.497455	58,500	2.71%	0.05%
9/30/2016	662,915	25	682,985	24	13.796718	49,503	2.29%	0.04%
9/30/2017	57,945	25	57,945	25	14.081005	4,115	0.19%	0.00%
Changes from amendments to benefit provisions.								
9/30/1997	161,519	25 yrs.	111,861	5 yrs.	4.409789	25,367	1.17%	0.01%
9/30/2000	359,387	25	327,679	8	6.560668	49,946	2.31%	0.02%
9/30/2007	111,694	25	127,358	15	10.460181	12,176	0.56%	0.01%
9/30/2009	365,850	25	419,939	17	11.340133	37,031	1.71%	0.03%
9/30/2014	(1,702,388)	25	(1,797,765)	22	13.182425	(136,376)	(6.31)%	(0.11)%
Totals			\$3,524,404			\$399,366	18.46%	0.22%

Weighted average remaining financing period: 17.6 yrs.

Unfunded Actuarial Accrued Liability

	<u>October 1, 2017</u>	<u>October 1, 2016</u>
A. Actuarial present value of future benefits	\$18,072,298	\$17,070,582
B. Actuarial present value of future normal costs	<u>2,324,417</u>	<u>2,274,966</u>
C. Actuarial accrued liability	15,747,881	14,795,616
D. Funding value of assets	<u>12,223,477</u>	<u>11,525,665</u>
E. Unfunded actuarial accrued liability	<u><u>\$ 3,524,404</u></u>	<u><u>\$ 3,269,951</u></u>

The Unfunded Actuarial Accrued Liability (UAAL) is not a good measure of the System's funded status because the amount is dependent upon the actuarial cost method (please refer to page C-1). The funding progress indicators (2) and (3) on pages A-4 and A-5 are less dependent of the actuarial cost method and are a better guide to funded status and funding progress. The funded status and the funding progress indicators would be different if based on the market value of assets instead of the funding value of assets.

Recommended and Actual Contributions Comparative Statement

Fiscal Year	Valuation Date	City/Chapter Dollar Contributions#		Recommended City/Chapter % of Payroll Contributions
		Recommended	Actual	
94/95	10/1/1993	\$ 681,170	\$ 716,980	10.12 %
95/96	10/1/1994	790,417	818,057	11.20
96/97	10/1/1995 (a)	612,267	618,521	10.01
97/98	10/1/1996	563,577	563,577	10.00
98/99	10/1/1997 (a)	161,897	170,318	13.09
99/00	10/1/1998	157,388	200,849	12.17
00/01	10/1/1999	140,765	154,219	9.93
01/02	10/1/2000 (aa)	188,644	188,644	12.45
02/03	10/1/2001	181,171	210,934	14.34
03/04	10/1/2002 (a)	187,031	200,796	14.64
04/05	10/1/2003 (a)	201,242	195,785	14.01
05/06	10/1/2004	289,937	313,076	18.49
06/07	10/1/2005	345,883	518,567	19.61
07/08	10/1/2006	347,184	584,172	18.38
08/09	10/1/2007 (a)	329,117	425,843	17.85
09/10	10/1/2008	373,810	423,928	18.15
10/11	10/1/2009 (a)	501,859	533,544	23.67
11/12	10/1/2010	573,563	573,563	25.83
12/13	10/1/2011	639,810	639,810	28.25
13/14	10/1/2012 (a)	408,279	457,932	18.50
14/15	10/1/2013 (a)	368,361	389,997	18.78
15/16	10/1/2014 (a)	422,041	422,041	21.15
16/17	10/1/2015 (a)	501,375	501,375	25.76
17/18	10/1/2016 (a)	608,384		28.57
18/19	10/1/2017	657,730		29.32

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

(aa) After Minimum Benefit changes.

Prior to the fiscal year ending 9/30/99, results include General, Police and Fire.

Actuarial Balance Sheet - October 1, 2017

Present Resources and Expected Future Resources

A. Funding value of system assets:	
1. Net assets from system financial statements (market value)	\$ 12,312,108
2. Funding value adjustment	<u>(88,631)</u>
3. Funding value of assets	12,223,477
B. Actuarial present value of expected future employer contributions:	
1. For normal costs	1,084,105
2. For unfunded actuarial accrued liability	<u>3,524,404</u>
3. Totals	4,608,509
C. Actuarial present value of expected future member contributions	<u>1,240,312</u>
D. Total Present and Expected Future Resources	<u><u>\$18,072,298</u></u>

Actuarial Present Value of Expected Future Benefit Payments and Reserves

A. To retired members and beneficiaries	\$ 7,145,068
B. To vested terminated members	0
C. To present active members:	
1. Allocated to service rendered prior to valuation date	8,575,205
2. Allocated to service likely to be rendered after valuation date	<u>2,324,417</u>
3. Totals	10,899,622
D. Extra Benefit Reserve	27,608
E. Reserve for DROP balances	0
F. Total Actuarial Present Value of Expected Future Benefit Payments	<u><u>\$18,072,298</u></u>

5-Year Projections of Future Funded Ratios and Future Employer Contributions

Year Ended 9/30	Active Count	Payroll	Benefit Payments	Actuarial Accrued Liability	Actuarial Value of Assets	Funded Ratio	Total Employer Contribution			Less Estimated Chapter 175 and Additional Premium Tax Revenue		Estimated City's Contributions
							Fiscal Year	% of Payroll	Dollar Amount			
2017	30	\$ 2,161,712	\$ 748,264	\$ 15,747,881	\$ 12,223,477	77.6%	2019	29.32%	\$ 657,730	\$ 163,417	\$ 494,313	
2018	30	2,192,687	785,289	16,523,109	13,114,724	79.1%	2020	29.69%	675,484	163,417	512,067	
2019	30	2,203,452	860,452	17,279,568	13,968,573	82.2%	2021	29.00%	663,208	163,417	499,791	
2020	30	2,259,877	914,652	18,041,163	14,968,271	85.1%	2022	27.57%	646,553	163,417	483,136	
2021	30	2,319,787	931,610	18,851,431	16,092,855	87.3%	2023	27.48%	661,470	163,417	498,053	
2022	30	2,354,861	961,272	19,696,824	17,300,617	89.6%	2024	27.23%	665,322	163,417	501,905	

Chapter 175 monies are assumed to stay level in future years.

Uses 2.50% wage growth assumption.

We have not determined any additional possible impact due to F.S. 112.64(5).

Actuarial assumptions were those used for the 9/30/2017 valuation.

Future experience was assumed to be consistent with the actuarial assumptions. If experience differs from the actuarial assumptions, future results could be significantly different from the projected results above.

Existing schedule of unrecognized investment gains and losses are reflected in this projection.

SECTION B

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

Summary of Benefit Provisions (as of October 1, 2017)

Normal Retirement (no reduction factor for age):

Eligibility

Members with 10 or more years of service as of July 21, 2014: 30 years of service regardless of age, or age 52 with 25 or more years of service, or age 55 with 5 or more years of service.

Members with less than 10 years of service as of July 21, 2014: 30 years of service regardless of age, or age 52 with 25 or more years of service, or age 55 with 10 or more years of service.

Mandatory Retirement Age - None.

Pension Amount

Members Not Eligible for Normal Retirement as of July 21, 2014: Total credited service times 3.0% of final average compensation. Maximum pension is 90% of final average compensation or \$90,000, whichever is less. Accrued benefits as of July 21, 2014 in excess of the maximum amount are retained.

The normal form of benefit is a benefit payable for the life of the retired member with the first 10 years guaranteed. Optional benefit forms are available on an actuarial equivalent basis.

Final Average Compensation - Highest 5 years out of last 10. Compensation includes base pay plus longevity and incentive pay. Excludes overtime and all other forms of compensation.

Early Retirement:

Eligibility - 20 years of service or age 50 with 10 years of service as of July 21, 2014. Members that do not meet these conditions are not eligible for Early Retirement.

Pension Amount - Computed as regular retirement, but reduced to take into account earlier commencement of retirement income payments, as follows:

3.0% per year reduction prior to Normal Retirement

Deferred Retirement (vested benefit):

Eligibility - 10 or more years of service for members with less than 5 years of service and new hires as of July 21, 2014. Benefit begins at the earlier of: age 55 with 10 years of service, age 52 with 25 years of service, and age 65 with 5 years of service.

Members with 5 or more years of service as of July 21, 2014: 5 or more years of service. Benefit begins at regular retirement age of 55.

Pension Amount - Computed as a normal retirement but based upon service and final average compensation at time of termination.

Summary of Benefit Provisions (Continued)

Duty Disability Retirement:

Eligibility - No age or service requirements.

Pension Amount - Computed as a normal retirement to regular retirement age. Minimum benefit is not less than 50% of final average compensation. At regular retirement age, the participant has the option to have the benefit re-computed as a normal retirement with additional service credit granted from date of retirement to the later of normal retirement age or five years after date of disability. Minimum benefit is not less than 42% of final average compensation.

Non-Duty Disability Retirement:

Eligibility - 10 or more years of service.

Pension Amount - Computed as a normal retirement. Minimum benefit is not less than 25% of final average compensation.

Duty Death Before Retirement:

Eligibility - No age or service requirements.

Pension Amount - To spouse: 100% of the normal retirement benefit. Minimum benefit is not less than 35% of final average compensation.

Non-Duty Death Before Retirement:

Eligibility - 5 or more years of service for members with more than 5 years of service as of July 21, 2014. 10 or more years of service for members with less than 5 years of service and new hires as of July 21, 2014.

Pension Amount - To spouse: 100% of the normal retirement benefit.

Member Contributions: 7.95% of pay.

Cost-of-Living Adjustments: A one-time, permanent benefit increase of 2% was granted to retirees who retired before January 1, 2009. Retirees who retire after January 1, 2009 and before July 21, 2014 will receive on the 2nd anniversary of retirement, a 2% benefit increase and an additional 2% compounded annually, inclusive of certain periods and/or survivor benefits. Members who were employed on and retire after July 21, 2014 receive a 2% benefit increase for service earned before July 21, 2014 and a 1% increase for service earned after July 21, 2014, compounded annually beginning two years after retirement. Members hired after July 21, 2014 are not eligible for a COLA.

Premium Tax Monies: A distribution of property insurance premium tax monies collected by the State pursuant to Chapter 175, Florida Statutes.

Summary of Benefit Provisions (Concluded)

City Contributions: Actuarially determined amounts which together with member contributions and premium tax monies are sufficient to at least cover the requirements of the funding objective.

Forfeiture of Retirement Benefits: Retirement benefits granted by the Retirement System are subject to forfeiture if an employee is convicted of an offense specified in Sections 112.3173 and 175.195, Florida Statutes, pursuant to the procedures set forth in the cited statute.

Prior Service Purchases: A former member with credited service who wishes to return to city employment may restore the forfeited credited service to receive credit for prior service within ninety (90) days after return to city employment.

Deferred Retirement Option Program (DROP): Any eligible member of the retirement system who meets the requirements of retirement may elect to participate, deferring receipt of retirement benefits while continuing employment with the City. The deferred monthly benefits shall accrue in the reserve for pension payments fund on behalf of the participant, plus 3.5% annual interest compounded monthly less a service fee, for the specified period of the DROP participation not to exceed 36 consecutive months. Upon termination from the DROP, the participant shall receive all accrued DROP benefits either by lump sum, direct rollover or partial lump sum. The DROP was closed to new members on July 21, 2014.

Backwards Deferred Retirement Option Program (BackDROP):

Eligibility – Same as normal retirement. Member must not be participating in the DROP on July 21, 2014 and must continue employment beyond the normal retirement date. The member may elect a BackDROP period for the number of months worked beyond their normal retirement date, up to a maximum of 36 months.

Amount of Pension – Computed as if the member had chosen to terminate on a day chosen by the member but not before the member's normal retirement date, using credited service and final average salary at the BackDROP date. In addition to the pension, there will be a lump sum payment equal to the pension benefits the member would have received had he/she retired on the BackDROP date with interest at the rate of 3.0% per year.

Claims Procedure: Claims for benefits should be filed with the office of the City Clerk. If a claim is denied, you will be notified and informed of the procedure to request a hearing before the Board of Trustees. An applicant for benefits must appeal said denial within 20 days of being informed of the denial by filing an appeal with the Board Secretary. If no appeal is filed within the time period then the denial shall be final.

Disclaimer: The preceding summary briefly describes the principle benefits of the Retirement System. Detailed benefit conditions and limitations are contained in the City of Jacksonville Beach Firefighters' Retirement System Ordinance as amended, which establishes the System. The Internal Revenue Code, Florida Statutes, and the Ordinance all govern the operation of the System, and should be consulted before you take any action concerning your membership or benefits. In case of any conflict between this Summary and the Ordinance or other applicable law, the Ordinance or other applicable law will prevail. Copies of the Ordinance are available at the office of the City Clerk.

Accounting Information Submitted for Valuation

Revenues and Expenditures

	Year Ended September 30, 2017	Year Ended September 30, 2016
Revenues:		
a. Member contributions	\$ 168,792	\$ 160,567
b. City contributions	337,958	223,486
c. Premium taxes from State	163,417	198,555
d. Total contributions to System	<u>\$ 670,167</u>	<u>\$ 582,608</u>
e. Investment income:		
1. Interest and dividends	280,180	310,476
2. Realized gain on investments	322,149	74,991
3. Unrealized gain on investments	748,158	500,022
4. Investment expense	(28,392)	(30,311)
f. Total investment income	<u>\$ 1,322,095</u>	<u>\$855,178</u>
g. Total revenues	<u>\$ 1,992,262</u>	<u>\$ 1,437,786</u>
Expenditures:		
a. Refunds of member contributions	0	0
b. Benefits paid	750,335	933,482
c. Administrative expenses	71,311	62,635
d. Total expenditures	<u>\$ 821,646</u>	<u>\$ 996,117</u>
Reserve Increase:		
Total revenues minus total expenditures	<u>\$ 1,170,616</u>	<u>\$ 441,669</u>

Summary of Assets (Market Value)

	Year Ended September 30, 2017	Year Ended September 30, 2016
Cash and Short-term Investments	\$ 323,816	\$ 111,558
Due from Other Government Units	8,432	39,952
Receivables less payables	18,909	13,643
Real Estate	640,916	none
U.S. Government Securities	1,021,936	1,141,363
Bonds - government	none	none
- corporate	2,233,317	1,991,756
Stocks - common	none	none
- preferred	none	none
Other (equity mutual funds)	<u>8,064,782</u>	<u>7,843,220</u>
Total assets	<u>\$12,312,108</u>	<u>\$11,141,492</u>

Derivation of Funding Value of Retirement System Assets

	2016	2017	2018	2019	2020
<u>Beginning of Year Values</u>					
(1) Market Value	\$10,699,823	\$11,141,492			
(2) Funding Value	11,134,615	11,525,665			
<u>End of Year</u>					
(3) Market Value	11,141,492	12,312,108			
(4) Net Addition to Assets	(413,509)	(151,479)			
Excluding Investment Income#					
(5) Total Net Investment Income#	855,178	1,322,095			
=(3)-(1)-(4)					
(6) Projected Net Rate of Return#	8.00%	7.90%			
(7) Projected Investment Income	874,229	904,544			
=(6) x [(2)+0.5 x (4)]					
(8) Investment Income in Excess of Projected	(19,051)	417,551			
<u>Excess Investment Income Recognized</u>					
(9a) From Current Year = .25 x (8)	(4,763)	104,388			
(9b) From One Year Prior	(215,009)	(4,763)	\$104,388		
(9c) From Two Years Prior	60,131	(215,009)	(4,763)	\$104,388	
(9d) From Three Years Prior	89,971	60,131	(215,007)	(4,762)	\$104,387
(9e) Total Cap. Val. Change Recogn.	(69,670)	(55,253)	(115,382)	99,626	104,387
= (9a)+(9b)+(9c)+(9d)					
(10) Increase(Decr.) in Funding Value	391,050	697,812			
= (4) + (7) + (9e)					
<u>End of Year</u>					
(11) Market Value	11,141,492	12,312,108			
(12) Funding Value = (2)+(10)	11,525,665	12,223,477			
(13) Market Value Rate of Return	8.1%	11.9%			
(14) Funding Value Rate of Return	7.4%	7.4%			
(15) Ratio of Market to Funding Value	96.7%	100.7%			

Net of expenses paid from investment income.

Accounting Information Submitted for Valuation Reconciliation to Market Value of Assets

Reserve Accounts

	9/30/2017	9/30/2016
Member Contributions (Members' Savings Reserve Fund)	\$ 2,294,736	\$ 2,050,387
City/State Contributions (Pension Reserve Fund)	0	0
Retired Members and Beneficiaries (Retirement Reserve Fund)	10,017,372	9,091,105
DROP Balances (Pension Payments Fund)	0	0
Total Reserve Accounts	12,312,108	11,141,492
Funding Value Adjustment	(88,631)	384,173
Funding Value of Assets	\$12,223,477	\$ 11,525,665

Retirement System reserve accounts are maintained and reported on a market value basis by the outside auditor.

Retired Member and Beneficiary Data Historical Schedule

Year Ended	Added		Removed		Net Increase		End of Year		Expected Removals	
	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions	No.	Annual Pensions	No.	Pensions
9/30/1975			3	\$ 5,238	(3)	\$ (5,238)	38	\$ 96,998		
9/30/1980	4	\$ 12,535	2	6,322	2	6,213	43	126,043		
9/30/1985	6	38,897	3	9,338	3	29,559	54	206,265	1.7	\$ 4,085
9/30/1990	6	63,868	5	14,043	1	49,825	63	346,855	1.9	6,447
9/30/1993	6	87,030	7	27,306	(1)	59,724	73	681,929	2.2	11,617
9/30/1994	12	187,409	2	14,164	10	173,245	83	855,174	2.1	12,465
9/30/1995	8	184,693	6	24,617	2	160,076	85	1,015,250	2.3	14,657
9/30/1996	14	247,257	7	33,348	7	213,909	92	1,229,159	1.9	14,218
9/30/1997	5	65,068	4	22,208	1	42,860	93	1,272,018	2	16,685
9/30/1998 #							14	289,524	2.0	16,685
9/30/1999							14	289,524	0.2	3,497
9/30/2000	1	32,824			1	32,824	15	322,348	0.2	3,883
9/30/2001	3	136,130			3	136,130	18	458,478	0.2	4,487
9/30/2002	3	147,176 *			3	147,176	21	605,654	0.3	5,710
9/30/2003	1	54,211	2	55,764	(1)	(1,553)	20	604,101	0.3	7,094
9/30/2004	1	60,277			1	60,277	21	664,378	0.3	7,970
9/30/2005	4	70,107	1	15,608	3	54,499	24	718,877	0.4	8,984
9/30/2006							24	718,877	0.4	9,685
9/30/2007							24	718,877	0.4	10,710
9/30/2008							24	718,877	0.5	11,858
9/30/2009	1	42,517	1	28,994		13,523	24	732,400	0.5	13,143
9/30/2010			1	24,355	(1)	(24,355)	23	708,045	0.6	14,312
9/30/2011			2	48,190	(2)	(48,190)	21	659,855	0.6	14,354
9/30/2012							21	659,855	0.6	15,813
9/30/2013	3	82,016	1	14,397	2	67,619	23	727,474	0.7	17,445
9/30/2014	1	25,134			1	25,134	24	752,608	0.7	18,427
9/30/2015		1,386				1,386	24	753,994	0.8	20,452
9/30/2016	1	17,077	1	17,077		1,413	24	755,407	0.9	22,569
9/30/2017		1,442	1	8,585	(1)	(7,143)	23	748,264	0.8	20,245
Expected for 9/30/2018									0.7	21,083

Prior to 1998 valuation, results include General, Police and Fire.

* Includes changes in benefits due to minimum benefit requirement.

Normal (Age and Service) Retirements

Valuation Year	No.	Average			Newly Retired During Year			
		Attained Age	Retirement Age	Annual Pensions	Averages			
					Retirement Age	Service	Annual Pensions	
2004	15	63.5 yrs.	55.0 yrs.	\$33,293	1	51.0 yrs.	30.2 yrs.	\$60,279
2005	16	63.1	55.0	30,772	1	50.0	10.2	15,057
2006	16	64.1	55.0	30,772				
2007	16	65.1	55.0	30,772				
2008	16	66.1	55.0	30,772				
2009	16	67.1	55.3	31,340				
2010	16	68.1	55.3	31,299				
2011	14	69.1	55.3	34,180				
2012	14	70.1	55.3	34,180				
2013	16	67.7	55.5	34,134	3	56.6	22.2	27,338
2014	17	68.7	54.2	33,604	1	55.0	21.7	25,134
2015	17	69.7	54.2	33,686				
2016	16	68.9	55.2	34,812				
2017	16	69.9	55.2	34,902				

Retired Members and Beneficiaries Historical Comparison

Valuation Date	% Incr. in Annual Pensions#	No. of Active Per Retired	Pension Payroll as % of Active Payroll	Average Pension#
10/1/1990 *	16.8 %			\$ 5,506
10/1/1995	18.7	2.7 %	16.7 %	11,944
10/1/2000	11.3	2.2	22.9	21,490
10/1/2004	10.0	1.4	45.3	31,637
10/1/2005	8.2	1.2	43.5	29,953
10/1/2006	0.0	1.3	40.7	29,953
10/1/2007	0.0	1.3	41.7	29,953
10/1/2008	0.0	1.3	37.3	29,953
10/1/2009	1.9	1.3	36.9	30,517
10/1/2010	(3.3)	1.3	34.1	30,785
10/1/2011	(6.8)	1.4	31.1	31,422
10/1/2012	0.0	1.4	31.9	31,422
10/1/2013	10.2	1.2	39.6	31,629
10/1/2014	3.5	1.2	40.3	31,359
10/1/2015	0.2	1.2	40.8	31,416
10/1/2016	0.2	1.3	36.8	31,475
10/1/2017	(0.9)	1.3	34.6	32,533

Prior to 1999 valuation, results include General, Police and Fire.

* For the 5 years ending with the valuation date.

Retired Members and Beneficiaries as of October 1, 2017 by Type of Pension Being Paid*

New Plan Pensions

Type of Pension Being Paid	No.	Annual Pension	Average Pension	Actuarial Liability
<i>Age and Service Pensions</i>				
Regular	3	\$ 42,651	\$ 14,217	\$ 427,328
Option I	3	168,483	56,161	1,528,605
Option II	6	186,377	31,063	1,874,422
Option III	4	160,927	40,232	1,781,448
Survivor Beneficiaries	3	53,756	17,919	405,557
Total Age and Service Pensions	19	612,194	32,221	6,017,360
<i>Disability Pensions</i>				
Regular	1	25,414	25,414	179,826
Option I	1	34,326	34,326	270,253
Option III	2	76,330	38,165	677,629
Total Disability Pensions	4	136,070	34,018	1,127,708
Total New Plan Pensions	23	\$748,264	\$32,533	\$7,145,068

- * *Regular - benefit terminating upon death of retired member*
Option I - 10-year certain
Option II - 100% joint and survivor benefit
Option III - 50%, 66⅔% and 75% joint and survivor benefit
Surviving Beneficiaries - benefit terminating upon death of beneficiary

Retired Members and Beneficiaries as of October 1, 2017 by Type of Pension Being Paid*

Old Plan Pensions

Type of Pension Being Paid	No.	Annual Pension	Average Pension	Actuarial Liability
<i>Age and Service Pensions</i>				
Survivor Beneficiaries	0	\$ -	N/A	\$ -
Total Age and Service Pensions	0	0	N/A	0
Total Old Plan Pensions	0	\$ -	N/A	\$ -
<i>Total New & Old Plan Pensions Being Paid</i>				
Pensions Being Paid	23	\$ 748,264	\$32,533	\$ 7,145,068

* *Regular - benefit terminating upon death of retired member*
Automatic Spouse Benefit - 75% joint and survivor benefit
Surviving Beneficiaries - benefit terminating upon death of beneficiary

Retired Member and Beneficiary Data as of October 1, 2017 by Attained Ages

Attained Ages	New Plan		Old Plan		Totals	
	No.	Annual Benefits	No.	Annual Benefits	No.	Annual Benefits
58	1	\$ 25,134			1	\$ 25,134
59	2	55,820			2	55,820
64	2	91,921			2	91,921
65	1	34,326			1	34,326
67	4	174,895			4	174,895
68	1	42,850			1	42,850
69	1	45,013			1	45,013
70	4	148,961			4	148,961
75	1	28,719			1	28,719
76	2	24,466			2	24,466
78	1	4,800			1	4,800
81	1	17,077			1	17,077
85	1	32,948			1	32,948
89	1	21,334			1	21,334
Totals	23	\$748,264	0	\$ -	23	\$748,264

Vested Terminated Members as of October 1, 2017 by Attained Ages

Attained Ages	No.	Annual Benefits
0	0	\$0
Totals	0	\$0

Active and Vested Terminated Members Included in Valuation

Valuation Date	Active Members	Vested Terminated Members	Valuation Payroll	Average		
				Age	Service	Pay
10/1/2007	30	3	\$ 1,725,988	34.0 yrs.	5.3 yrs.	\$ 57,533
10/1/2008	31	3	1,927,966	35.3	5.9	62,192
10/1/2009	30	2	1,984,765	36.6	7.1	66,159
10/1/2010	30	2	2,078,655	37.4	7.9	69,289
10/1/2011	30	2	2,120,109	38.1	8.8	70,670
10/1/2012	30	2	2,065,908	38.5	9.5	68,864
10/1/2013	28	1	1,836,131	38.2	10.2	65,576
10/1/2014	28	0	1,867,968	39.2	11.3	66,713
10/1/2015	28	0	1,848,443	40.2	12.3	66,016
10/1/2016	30	0	2,052,021	40.3	12.4	68,401
10/1/2017	30	0	2,161,712	41.3	13.4	72,057

Number Added to and Removed from Active Membership

Year Ended September 30	Number Added During Year		Terminations During Year										Active Members End of Year
			Normal Retirement		Disability Retirement		Died-in-Service		Withdrawal				
	A	E	A	E	A	E	A	E	A	A	A	E	
2008	3	2	0	0.4	0	0.0	0	0.0	0	2	2	3.1	31
2009	0	1	0	0.3	0	0.1	0	0.0	0	1	1	3.0	30
2010	1	1	0	0.3	0	0.1	0	0.0	0	1	1	2.4	30
2011	1	1	0	0.8	0	0.1	0	0.0	0	1	1	2.2	30
2012	1	1	0	0.8	0	0.1	0	0.0	0	1	1	2.2	30
2013	0	2	2	1.7	0	0.1	0	0.0	0	0	0	2.1	28
2014	0	0	0	0.4	0	0.1	0	0.0	0	0	0	1.9	28
2015	0	0	0	0.3	0	0.1	0	0.0	0	0	0	1.9	28
2016	2	0	0	0.7	0	0.1	0	0.0	0	0	0	1.8	30
2017	0	0	0	0.8	0	0.1	0	0.0	0	0	0	1.5	30
5-yr. Totals													
2013 - 2017	2	2	2	3.9	0	0.5	0	0.0	0	0	0	9.2	
Expected for 2018				0.7		0.2		0.0				1.4	

A represents actual number.

E represents expected number.

Active Members as of October 1, 2017 By Near Age and Years of Service (Excluding DROP Members)

Near 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
25-29	1	2						3	\$ 165,860
30-34	1	1	1					3	170,973
35-39		1	2					3	193,988
40-44			5	5	1			11	811,871
45-49		2	3	2				7	483,482
50-54								0	0
55-59				1		1	1	3	335,538
Totals	2	6	11	8	1	1	1	30	\$2,161,712

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

Age: 41.3 years

Service: 13.4 years

Annual Pay: \$72,057

SECTION C

ACTUARIAL COST METHOD, ACTUARIAL ASSUMPTIONS AND DEFINITIONS OF TECHNICAL TERMS

Actuarial Cost Method

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

- (i) The annual normal costs for each individual active member is sufficient to accumulate the value of the member's pension at time of retirement or BackDROP.
- (ii) Each annual normal cost is a constant percentage of the member's year-by-year projected pensionable compensation.

The entry-age actuarial cost method allocates the actuarial present value of each member's projected benefits on a level basis over the member's pensionable compensation between the entry age of the member and the estimated exit ages. This is based on our understanding of the approach preferred by the Florida Division of Retirement.

The portion of the actuarial present value allocated to the valuation year is called the normal cost. The portion of the actuarial present value not provided for by the actuarial present value of future normal costs is called the Actuarial Accrued Liability (AAL). Deducting accrued assets from the AAL determines the Unfunded Actuarial Accrued Liability (UAAL). The UAAL was financed as a level percent of member payroll. Please refer to page A-11 for a schedule of financing periods.

The characteristics of this method of financing the UAAL are shown on page C-2.

The sum of active member payroll was assumed to increase 2.50% a year for the purpose of determining the level percent contributions, except to the extent needed for FS 112.64(5) compliance. This assumption is consistent with the base rate of increase in salaries used to calculate actuarial present values.

Level Percent of Active Member Payroll Amortization of Unfunded Actuarial Accrued Liability* (amortization schedule \$ amounts in thousands)

Year Ended September 30	Payroll		Unfunded		Contribution	
	Inflated Dollars	Constant Value	Inflated Dollars	Constant Value	Inflated Dollars	Constant Value
2017	\$2,162	\$2,162	\$3,524	\$3,524	\$404	\$404
2018	2,211	2,162	3,379	3,303	413	404
2019	2,262	2,162	3,212	3,069	422	404
2020	2,314	2,162	3,022	2,822	413	386
2021	2,368	2,162	2,827	2,581	422	386
2026	2,653	2,162	1,626	1,325	380	310
2031	2,972	2,162	654	475	154	112
2036	3,330	2,162	231	150	(71)	(46)
2040	3,647	2,162	184	109	155	92
2041	3,731	2,162	35	21	36	21
2042	3,817	2,162	0	0	0	0
\$ 291,024	over 25 years		\$ 768,358	over 12 years		
957,840	over 24 years		(51,592)	over 11 years		
752,909	over 23 years		496,631	over 10 years		
(1,902,595)	over 22 years		0	over 9 years		
(262,241)	over 21 years		327,679	over 8 years		
(335,873)	over 20 years		0	over 7 years		
556,986	over 19 years		0	over 6 years		
510,310	over 18 years		111,861	over 5 years		
682,656	over 17 years		0	over 4 years		
284,709	over 16 years		50,088	over 3 years		
(202,378)	over 15 years		0	over 2 years		
(170,729)	over 14 years		0	over 1 year		
658,761	over 13 years					
			<u>\$ 3,524,404</u> TOTAL			

Level percent-of-payroll financing of Unfunded Actuarial Accrued Liability (UAAL) 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 participant payroll used to compute the level percent-of-payroll contribution is the same rate of payroll growth used to compute actuarial liability 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 the UAAL will tend to decline.

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

Actuarial Assumptions Used for the Valuation

Funding objective contribution requirements and actuarial present values are calculated by applying estimates of future plan activities (actuarial assumptions) to the benefit provisions and people information of the system, using the actuarial cost method described on page C-1. All actuarial assumptions used in this report are estimates of future experience.

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

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

In making 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.

Actual activities of the system will not coincide exactly with estimated activities, due to their nature. Each valuation provides a complete recalculation of estimated future activities and takes into account the effect of differences between estimated and actual activity 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 assumptions are modified to reflect experience trends (but not random or temporary year-to-year fluctuations).

The actuarial assumptions are adopted by the Board of Trustees after consultation with the actuary. In general, the actuarial assumptions were based on the System's experience, as well as experience of plans similar in nature where the System's experience was insufficient. The reasonableness of the economic assumptions was based upon capital market expectations provided by various investment consultants (including the System's) and other sources such as the Social Security Trustees report. All actuarial assumptions are based on future expectations, not market measures.

Actuarial Assumptions Used for the Valuation

The actuarial assumptions regarding the INFLATION rate, the SALARY INCREASE rates, and REAL INVESTMENT RETURN were effective October 1, 2017. These actuarial assumptions are used, in combination with the other actuarial 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 covered payroll.

The annual interest rate used in making this valuation was 7.90%. It is composed of inflation and real investment return. **We believe the investment return assumption is at the upper boundary of what is reasonable. If the Board is unable to lower the investment return assumption below the current rate of 7.90% for the September 30, 2018 valuation and capital market assumptions do not improve, we will have to qualify the 2018 report, which will jeopardize State acceptance.**

Price Inflation. 2.50% 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:

	Year Ended September 30					Average	
	2017	2016	2015	2014	2013	3-Year	5-Year
Actual	2.2%	1.5%	(0.0)%	1.7%	1.2%	1.2%	1.3%
Assumed	2.5%	3.0%	3.5%	3.5%	3.5%	3.0%	3.2%

Real Investment Return. 5.40% per annum, compounded annually. This is the rate of return estimated to be produced by investing a pool of assets in an inflation-free environment. Recent real investment return for the Retirement System has been:

	Year Ended September 30					Average	
	2017	2016	2015	2014	2013	3-Year	5-Year
Net Rate	7.4%	7.4%	8.8%	9.3%	8.6%	7.9%	8.3%
Less Inflation Rate	2.2%	1.5%	(0.0)%	1.7%	1.2%	1.2%	1.3%
Net Real Rate	5.2%	5.9%	8.8%	7.6%	7.4%	6.7%	7.0%
Target Real Rate	5.4%	5.0%	4.5%	4.5%	4.5%	5.0%	4.8%

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 funding asset value and B is the end of year funding value of assets.

The preceding investment return rates reflect the particular characteristics of this Retirement 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.

Actuarial Assumptions Used for the Valuation

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:

Attributable to:	Annual Rates for Salary Increase for Sample				
	20	30	40	50	60
Merit & Seniority	3.8%	2.7%	2.1%	1.1%	0.2%
General Increase in Wage Level Due to:					
Price Inflation	2.5%	2.5%	2.5%	2.5%	2.5%
Other Factors	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>
Total	6.3%	5.2%	4.6%	3.6%	2.7%

The valuation is based on a constant group size and total payroll increasing at the rate of the general increase in wage levels due to inflation and other causes, which in this case is 2.50% a year.

A schedule of recent salary change experience, as measured by average reported pay, follows:

	Year Ended September 30					Average		
	2017	2016	2015	2014	2013	3-Year	5-Year	10-Year
% Change:								
Actual (1)	5.3%	7.3%	(1.0)%	1.7%	(1.5)%	3.8%	2.3%	3.4%
Assumed	4.4%	5.5%	6.2%	6.4%	6.5%	5.4%	5.8%	6.1%
% Change in Total Payroll (2)	5.3%	11.0%	(1.0)%	1.7%	(11.1)%	5.0%	0.9%	2.3%

(1) Excluding terminations and new members.

(2) Including pays of members electing DROP participation but still working.

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. The schedule on the following page illustrates the recent history of the relationship between total investment return and average pay changes:

Actuarial Assumptions Used for the Valuation

	Year Ended September 30					Average	
	2017	2016	2015	2014	2013	3-Year	5-Year
Net Investment Return Rate	7.4%	7.4%	8.8%	9.3%	8.6%	7.9%	8.3%
Rate of Change in Average Pay	5.3%	7.3%	(1.0)%	1.7%	(1.5)%	3.8%	2.3%
Difference: Actual	2.1%	0.1%	9.8%	7.6%	10.1%	4.1%	6.0%
Target	5.4%	5.0%	4.5%	4.5%	4.5%	5.0%	4.8%

Mortality Table. 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: 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.
- Female non-disabled retiree mortality: fully generational mortality. 100% of the RP-2000 Annuitant White Collar Table, projected with scale BB.
- Male employee mortality: 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: fully generational mortality. 100% of the RP-2000 Employee White Collar Table, projected with scale BB.
- Male disabled mortality: 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: 60% of the RP-2000 Disabled Female Table, set forward 2 years and 40% of the RP-2000 Annuitant White Collar Table. Sample values follow:

Sample Ages in 2017	Value of \$1 Monthly for Life		Future Life Expectancy (Years)	
	Men	Women	Men	Women
50	\$137.18	\$143.58	33.86	38.26
55	131.52	138.53	29.21	33.25
60	123.86	131.77	24.64	28.35
65	113.97	122.82	20.24	23.61
70	101.70	111.68	16.11	19.15
75	87.46	98.45	12.39	15.07
80	72.11	83.46	9.18	11.45

The margin for future mortality improvements is included in projection scales. 75% of pre-retirement deaths were assumed to be duty related.

Actuarial Assumptions Used for the Valuation

Rates of withdrawal 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 assumption measures the probabilities of members remaining in employment.

Sample Ages	Years of Service	% of Active Members Separating During Next Year
	0	20.00%
	1	15.00%
	2	12.00%
	3	10.00%
	4	7.00%
25	5 & Over	9.90%
30		9.68%
35		7.81%
40		4.84%
45		2.53%
50		2.09%
55		2.09%
60		2.09%

These rates were first used for the October 1, 2016 valuation.

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

Sample Ages	% of Active Members Becoming Disabled During Next Year
20	0.14%
25	0.18%
30	0.20%
35	0.28%
40	0.42%
45	0.64%
50	1.04%
55	1.84%
60	3.06%

The mortality table was set forward 10 years from the age at disability for projecting disability costs. The rates assume 75% of disabilities will be duty related. These rates were first used for the October 1, 1995 valuation.

Actuarial Assumptions Used for the Valuation

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

Retirement Ages	Age Based	Yrs. of Service	Service Based	Early Retirement Ages	Early Retirement Rates
52	50%	30	100%	40	5%
53	40%			41	5%
54	30%			42	5%
55	30%			43	5%
56	20%			44	5%
57	20%			45	5%
58	20%			46	5%
59	20%			47	5%
60	100%			48	5%
				49	5%
				50-54	5%

A Fire member is eligible for normal retirement after 30 years of service, or after attaining age 52 with 25 years of service, or after attaining age 55 with 5 (10 years if less than 10 years of service as of July 21, 2014) or more years of service.

A Fire member is eligible for early retirement after 20 years of service or after attaining age 50 with 10 years of service if eligible for early retirement by July 21, 2014.

These rates were first used for the October 1, 2002 valuation.

Administrative Expenses. Administrative expenses are projected to continue at the same percent-of-payroll as experienced during the preceding fiscal year.

Investment Expenses. Investment expenses are offset against gross investment income.

Active Member Group Size. The valuation was based on a constant active member group size. This is unchanged from previous valuations.

Vested members who terminate with a benefit worth less than 100% of their own accumulated contributions were assumed to forfeit their vested benefit.

Compensation reported for the actuarial valuation includes all amounts included in the final average compensation for benefit purposes.

Summary of Assumptions Used September 30, 2017

Pensions in an Inflationary Environment

Value of \$1,000/month Retirement Benefit to an Individual Who Retires at Age 52 in an Environment of 2.50% Inflation

Age	Value
52	\$1,000
53	976
54	952
55	929
60	820
65	724
70	640
75	566
80	500
85	442

The life expectancy of a 55 year old male retiree is age 84. The life expectancy for a 55 year old female retiree is age 88. Half of the people will outlive their life expectancy. The effects of even moderate amounts of inflation can be significant for those who live to an advanced age.

Summary of Assumptions Used

Miscellaneous and Technical Assumptions

Marriage Assumption. 100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits.

Pay Increase Timing. Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

Decrement Timing. Decrements of all types are assumed to occur mid-year.

Eligibility Testing. Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

Benefit Service. Exact fractional service is used to determine the amount of benefit payable.

Decrement Relativity. Decrement rates are used without adjustment for multiple decrement table effects.

Decrement Operation. Disability and mortality decrements do not operate during the first 5 years of service. Disability and withdrawal do not operate during retirement eligibility.

Normal Form of Benefit. The normal form of benefit is a benefit payable for the life of the retired member with the first 10 years guaranteed. Optional benefit forms are available on an actuarial equivalent basis.

Loads. None.

Incidence of Contributions. Contributions are assumed to be received continuously throughout the year based upon the computed percent-of-payroll shown in this report, and the actual payroll payable at the time contributions are made. New entrant normal cost contributions are applied to the funding of new entrant benefits.

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 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.

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 liabilities. 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 assumptions.

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 a lump sum payment.

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

Funding Value of Assets. Also referred to as actuarial value of assets, smoothed market value of assets, or valuation assets.

Valuation assets recognize assumed investment return fully each year. Differences between actual and assumed investment return are phased-in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, valuation assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, valuation assets will tend to be greater than market value. If assumed rates are exactly realized for 3 consecutive years, valuation assets will become equal to market value.

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

Definitions of Technical Terms

Pension Benefit Obligation. A standardized disclosure measure of the present value of pension benefits, adjusted for the effects of projected salary increases, estimated to be payable in the future as a result of employee service to date. The PBO is independent of the actuarial funding method used to determine contributions.

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

Most retirement systems have Unfunded Actuarial Accrued Liability. An amount arises each time new benefits are added and each time an experience loss occurs.

The existence of Unfunded Actuarial Accrued Liability is not in itself bad, any more than a mortgage on a house is bad. 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 the amount (after due allowance for devaluation of the dollar).

SECTION D

ADDITIONAL DISCLOSURE INFORMATION

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.

Contributions Required and Contributions Made

The City's funding policy provides for periodic employer contributions at actuarially determined rates that, expressed as percentages of annual covered payroll, are designed to accumulate sufficient assets to pay benefits when due. The normal cost and Actuarial Accrued Liability (AAL) are determined using an entry-age actuarial funding method. Unfunded Actuarial Accrued Liability (UAAL) is being amortized as a level percent-of-payroll over periods of 3 to 25 years.

During the year ended September 30, 2017 contributions totaling \$670,167 -- \$501,375 employer and \$168,792 employee -- were made in accordance with contribution requirements determined by an actuarial valuation of the plan as of October 1, 2015. The total employer contributions consisted of \$217,684 for normal cost and administrative expenses and \$283,691 for amortization of the UAAL and \$0 for additional premium tax revenue. Employer contributions represented 23.2% of covered payroll.

Significant actuarial assumptions used to compute contribution requirements were the same as those used to compute the standardized measure of the AAL.

Computed Employer Contribution Comparative Schedule

Fiscal Year Beginning October 1	Valuation Date	Contribution Rates		Dollar Contribution For Fiscal Year	
		As Percents of Valuation Payroll	Valuation Payroll	Computed	Actual
2008	10/01/2007	17.85	\$ 1,725,988	\$ 329,117	\$425,843
2009	10/01/2008	18.15	1,927,966	373,810	423,928
2010	10/01/2009 *	23.67	1,984,765	501,859	533,544
2011	10/01/2010	25.83	2,078,655	573,563	573,563
2012	10/01/2011	28.25	2,120,109	639,810	639,810
2013	10/01/2012 *	18.50	2,065,908	408,279	457,932
2014	10/01/2013 *	18.78	1,836,131	368,361	389,997
2015	10/01/2014 *	21.15	1,867,968	422,041	422,041
2016	10/01/2015 *	25.76	1,848,443	501,375	501,375
2017	10/01/2016 *	28.57	2,052,021	608,384	
2018	10/01/2017 *	29.32	2,161,712	657,730	

* After changes in benefit provisions and/or actuarial assumptions.

Actuarial Accrued Liability

The Actuarial Accrued Liability (AAL) is a measure intended to help users assess (i) a pension fund's funded status on a going-concern basis, and (ii) progress being made toward accumulating the assets needed to pay benefits as due. Allocation of the actuarial present value of projected benefits between past and future service was based on service using the individual entry-age actuarial cost method. Assumptions, including projected pay increases, were the same as used to determine the Fund's level percent-of-payroll annual required contribution between entry-age and assumed exit age. Entry-age was established by subtracting credited service from current age on the valuation date.

The preceding methods comply with the financial reporting standards established by the Governmental Accounting Standards Board (GASB).

The entry age AAL was determined as part of an actuarial valuation of the plan as of October 1, 2017. Significant actuarial assumptions used in determining the entry age AAL include (a) a rate of return on the investment of present and future assets of 7.90% per year compounded annually, (b) projected salary increases of 2.50% per year compounded annually, 2.50% attributable to inflation and 0.00% attributable to other causes, (c) additional projected salary increases of 3.8% to 0.0% per year, depending on age, attributable to seniority/merit, and (d) the assumption that benefits will not increase after retirement.

As of October 1, 2017, the Unfunded Actuarial Accrued Liability (UAAL) was \$3,524,404 determined as follows:

Actuarial Accrued Liability:	
Active participants (25 vested and 5 non-vested)	\$ 8,575,205
Retired participants and beneficiaries currently receiving benefits (23 vested)	7,145,068
Vested terminated participants not yet receiving benefits (0 vested)	0
Extra Benefit Reserve	27,608
DROP Reserve	0
Total Actuarial Accrued Liability	<u>15,747,881</u>
Actuarial Value of Assets (market value was \$12,312,108)	<u>12,223,477</u>
Unfunded Actuarial Accrued Liability	\$ 3,524,404

During the year ended September 30, 2017 the Plan experienced a net change of \$952,265 in the AAL, of which \$57,945 was due to changes in actuarial assumptions. There were no changes in benefit provisions or methods.

Supplementary Information Schedule of Funding Progress

Actuarial Valuation Date October 1	Actuarial Value of Assets# (a)	Actuarial Accrued Liability (AAL) Entry Age (b)	Unfunded AAL (b)-(a)	Funded Ratio (a)/(b)	Active Participant Covered Payroll (c)	Unfunded AAL as a Percentage of Active Member Covered Payroll ((b-a)/c)
1998	\$43,678	\$39,897	\$ (3,781)	109.5	\$10,536	(35.9) %
1999 @	7,324	7,294	(30)	100.4	1,318	(2.3)
2000 *	8,055	8,011	(44)	100.6	1,408	(3.2)
2001	8,257	8,467	210	97.5	1,174	17.9
2002	8,242	9,001	759	91.6	1,196	63.5
2003	8,049	8,816	767	91.3	1,345	57.0
2004	7,549	9,058	1,509	83.3	1,468	102.8
2005	7,483	9,707	2,224	77.1	1,651	134.7
2006	7,502	9,662	2,160	77.6	1,768	122.2
2007 *	8,044	10,099	2,055	79.7	1,726	119.1
2008 *	8,366	10,726	2,360	78.0	1,928	122.4
2009 *	8,468	11,472	3,004	73.8	1,985	151.4
2010	8,434	11,987	3,553	70.4	2,079	170.9
2011	8,363	12,512	4,149	66.8	2,120	195.7
2012	8,888	12,779	3,891	69.6	2,066	188.3
2013	9,701	13,271	3,570	73.1	1,836	194.4
2014 *	10,438	12,223	1,785	85.4	1,868	95.6
2015 *	11,135	13,520	2,385	82.4	1,848	129.0
2016 *	11,526	14,796	3,270	77.9	2,052	159.4
2017	12,223	15,748	3,525	77.6	2,162	163.1

Dollar amounts are in thousands.

* After changes in benefits and/or actuarial assumptions and/or actuarial cost methods.

The Actuarial Value of Assets is four-year smoothed market value.

@ Prior to 1999 valuation, results include General, Police and Fire.

Analysis of the dollar amounts of Actuarial Value of Assets (AVA), Actuarial Accrued Liability (AAL), or Unfunded Actuarial Accrued Liability (UAAL) in isolation can be misleading. Expressing the AVA as a percentage of the AAL provides one indication of the System's funded status on a going-concern basis. Analysis of this percentage over time indicates whether the System is becoming financially stronger or weaker. Generally, the greater this percentage the stronger the plan. The UAAL and annual covered payroll are both affected by inflation. Expressing the UAAL as a percentage of covered payroll approximately adjusts for the effects of inflation and aids analysis of the progress being made in accumulating sufficient assets to pay benefits when due. Generally, the smaller this percentage the stronger the plan.

SECTION E

SUMMARY OF VALUATION RESULTS IN STATE FORMAT

Summary of Valuation Results in State Format (\$ amounts in thousands)

	October 1, 2017		October 1, 2016
	After	Before	
(a) Participant Data			
(i) Active members - number	30	30	30
- annual payroll	\$ 2,162	\$ 2,162	\$ 2,052
(ii) Retired members & beneficiaries (excl. disability)			
- number	19	19	20
- annualized benefit payroll	612	612	619
(iii) Disabled members & beneficiaries			
- number	4	4	4
- annualized benefit payroll	136	136	136
(iv) Terminated vested members			
- number	0	0	0
- annualized deferred benefit payroll	0	0	0
(b) Assets			
(i) Actuarial value for funding	12,223	12,223	11,526
(ii) Market value	12,312	12,312	11,141
(c) Actuarial Liability			
(i) Actuarial present value of active member benefits:			
service retirement	8,629	8,630	7,641
termination benefits - pension	1,104	1,104	1,079
disability retirement	863	770	742
survivor benefits (pre-retirement)	265	265	252
termination benefits - refunds	38	38	36
extra benefit reserve	28	28	28
Total	10,927	10,835	9,778
(ii) Actuarial present value of terminated vested member benefits	0	0	0
(iii) Actuarial present value of retired member benefits:			
service retirement & survivors	6,017	6,017	6,144
DROP reserve	0	0	0
disability retirement & survivors	1,128	1,128	1,149
Total	7,145	7,145	7,293
(iv) Total actuarial present value of future benefit payments	18,072	17,980	17,071
(v) Payables	0	0	0
(vi) Actuarial accrued liability	15,748	15,690	14,796
(vii) Unfunded actuarial accrued liability ⁽¹⁾	\$ 3,524	\$ 3,466	\$ 3,270

(1) Please refer to page A-11 for requested detail.

Summary of Valuation Results in State Format (\$ amounts in thousands)

	October 1, 2017		October 1, 2015
	After	Before	
(d) Actuarial Present Value of Accrued Benefits (calculated in accordance with FASB Statement No. 35)			
(i) Vested accrued benefits			
Retired members and beneficiaries	\$ 7,145	\$ 7,145	\$ 7,293
Terminated members	0	0	0
Active members (includes non-forfeitable accum. member contributions of \$2,295 for 2017 and \$2,050 for 2016)	6,193	6,149	5,358
Total	13,338	13,294	12,651
(ii) Non-vested accrued benefits	81	79	67
(iii) Total actuarial p.v. of accrued benefits	13,419	13,373	12,718
(iv) Actuarial p.v. of accrued benefits at begin. of year	12,718	12,718	12,157
(v) Changes attributable to:			
Amendments	0	0	0
Assumption change	46	0	370
Operation of decrements	1,405	1,405	1,124
Benefit payments	(750)	(750)	(933)
Other	none	none	none
(vi) Net change	701	655	561
(vii) Actuarial p.v. of accr. benefits at end of year	13,419	13,373	12,718
(e) Plan costs for fiscal year beginning October 1, 2018 and October 1, 2017 (EANC)			
(i) Normal costs			
Service pensions	9.05%	9.05%	8.89%
Disability pensions	1.89%	1.69%	1.71%
Survivor pensions (pre-retirement)	0.52%	0.51%	0.51%
Deferred service pensions	2.89%	2.89%	2.93%
Refunds of member contributions	0.94%	0.94%	0.93%
Total normal cost	15.29%	15.08%	14.97%
(ii) Payment to amortize unf'd. act. accr. liab.	18.46%	18.27%	17.50%
(iii) FS112.64(5) Compliance	0.22%	0.22%	1.00%
(iv) Administrative expenses	3.30%	3.30%	3.05%
(v) Amount to be paid by members	7.95%	7.95%	7.95%
(vi) Expected plan sponsor/Chapter 175 contribution	29.32%	28.92%	28.57%
- dollars	\$ 658	\$ 649	\$ 608

Summary of Valuation Results in State Format (\$ amounts in thousands)

		October 1, 2017		October 1, 2015
		After	Before	
(f)	Past Contributions (fiscal year ending 9/30/2017 & 2016)			
	(i) Required minimum:			
	Plan sponsor / Chapter 175 monies	\$ 501	\$ 501	\$ 422
	Members	155	155	159
	Total	656	656	581
	(ii) Actual:			
	Plan sponsor / Chapter 175 monies	501	501	422
	Members	169	169	161
	Total	670	670	583
(g)	Net Experience Gain (Loss)	(233)	(233)	(267)
(h)	Other Disclosures			
	(i) Present value of active member future salaries			
	from attained age	\$15,601	\$15,601	\$15,499
	from entry age		not applicable to individual EANC method	
	(ii) Present value of active member future contribs.			
	from attained age	\$ 1,240	\$ 1,240	\$ 1,232
	from entry age		not applicable to individual EANC method	

Reconciliation of Membership for the Plan Year Ended September 30, 2017

	Active Members	Vested Terminated Members	Service Retired	Disability Retired	All Beneficiaries
No. at Start of Year	30	0	16	4	4
Increase (Decrease) From					
Service Retirement					
DROP Retirement					
Disability Retirement					
Deaths					(1)
Other Pension Terminations					
Vested Terminations					
Non-Vested Terminations					
New Entrants/Rehires					
No. at End of Year	30	0	16	4	3



April 18, 2018

Mr. Duston Scott
Payroll/Benefits Administrator
City of Jacksonville Beach
11 North Third Street
Jacksonville Beach, FL 32250

Dear Duston:

Enclosed are 15 copies of the report of the Sixty-seventh Annual Valuation of the City of Jacksonville Beach Firefighters' Retirement System. As directed, copies have been sent directly to:

Attention: Mr. Ryan Tucker
Purvis, Gray and Company
222 N.E. 1st Street
Gainesville, FL 32602

Attention: Ms. Sarah Carr, Benefits Administrator
Municipal Police Officers' & Firefighters'
Retirement Trust Funds Office
Division of Retirement
P.O. Box 3010
Tallahassee, FL 32315-3010

Attention: Mr. Douglas E. Beckendorf, Actuary
Local Retirement Section
Division of Retirement
P.O. Box 9000
Tallahassee, FL 32315-9000

Sincerely,

A handwritten signature in black ink that reads "Brad Lee Armstrong". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Brad Lee Armstrong, ASA, EA, FCA, MAAA

BLA:bd
Enclosures

**Purvis, Gray and Company
Attention: Mr. Ryan Tucker
P.O. Box 23999
222 N. E. 1st Street
Gainesville, FL 32602**

**Attention: Sara Carr, Benefits Administrator
Municipal Police Officers' & Firefighters'
Retirement Trust Funds Office
Division of Retirement
P.O. Box 3010
Tallahassee, FL 32315-3010**

**Mr. Douglas E. Beckendorf, Actuary
Local Retirement Section
Division of Retirement
P.O. Box 9000
Tallahassee, Florida 32315-9000**