City of Delray Beach
Firefighters' Retirement System

ACTUARIAL VALUATION REPORT
AS OF OCTOBER 1, 2018

ANNUAL EMPLOYER CONTRIBUTION FOR THE FISCAL YEAR
ENDING SEPTEMBER 30, 2020

GRS

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May 14, 2019

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

**Re: City of Delray Beach Firefighters' Retirement System
Actuarial Valuation as of October 1, 2018**

Dear Board Members:

The results of the October 1, 2018 Annual Actuarial Valuation of the City of Delray Beach Firefighters' Retirement System are presented in this report.

This report 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 purposes of the valuation are to measure the System's funding progress, to determine the employer contribution rate for the fiscal year ending September 30, 2020, and to determine the actuarial information for Governmental Accounting Standards Board (GASB) Statement No. 67. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

The contribution rate in this report is determined using the actuarial assumptions and methods disclosed in Section B of this report. This report includes risk metrics on page 4 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.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The findings in this report are based on data and other information through October 1, 2018. The valuation was based upon information furnished by the Plan Administrator concerning Retirement System benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the Plan Administrator.

This report was prepared using certain assumptions approved by the Board as authorized under Florida Statutes and prescribed by the Florida Statutes as described in the section of this report entitled Actuarial Assumptions and Cost Method. The assumed mortality rates detailed in the Actuarial Assumptions and Cost Method section were prescribed by Chapter 112.63, Florida Statutes. All actuarial assumptions used in this report are reasonable for purposes of this valuation.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the City of Delray Beach Firefighters' Retirement System as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the Actuarial Standards of Practice issued by the Actuarial Standards Board, and with applicable statutes.

Jeffrey Amrose and Trisha Amrose are members of the American Academy of Actuaries. These actuaries meet the Academy's Qualification Standards to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

This actuarial valuation and/or cost determination was prepared and completed by us or under our direct supervision, and we acknowledge responsibility for the results. To the best of our knowledge, the results are complete and accurate. In our opinion, the techniques and assumptions used are reasonable, meet the requirements and intent of Part VII, Chapter 112, Florida Statutes, and are based on generally accepted actuarial principles and practices. 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.

Gabriel, Roeder, Smith & Company will be pleased to review this valuation and Report with the Board of Trustees and to answer any questions pertaining to the valuation.

Respectfully submitted,

GABRIEL, ROEDER, SMITH & COMPANY

By Jeff Amrose

Jeffrey Amrose, MAAA
Enrolled Actuary No. 17-6599
Senior Consultant and Actuary

Trisha Amrose

Trisha Amrose, MAAA
Enrolled Actuary No. 17-8010
Consultant and Actuary

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SECTION A

DISCUSSION OF VALUATION RESULTS

DISCUSSION OF VALUATION RESULTS

Comparison of Required Employer Contributions

The required employer contribution this year compared with the preceding year is as follows:

	For FYE 9/30/2020 Based on 10/1/2018 Valuation	For FYE 9/30/2019 Based on 10/1/2017 Valuation	Increase (Decrease)
Required Contribution	$ 8,748,165	$ 7,834,461	$ 913,704
As % of Contr. Year Payroll	74.33 %	74.52 %	(0.19) %
Estimated State Contribution	1,074,825	1,074,825 *	0
As % of Contr. Year Payroll	9.13 %	10.22 %	(1.09) %
Net Employer Contribution**	7,673,340	6,759,636	913,704
As % of Contr. Year Payroll	65.20 %	64.30 %	0.90 %

* Updated from the prior year's valuation report to reflect the State contribution received for the fiscal year ending September 30, 2018.

** Contribution may be offset by the $435,051 prepaid City contribution.

Payment of Required Contribution

The contribution developed in this valuation has been calculated as though payments are made at the end of each biweekly pay period. **If the full contribution for the fiscal year ending September 30, 2020 is paid on October 1, 2019, the net required employer contribution is $7,376,752 or 62.68% of covered payroll.**

Further, the required Employer contribution has been computed with the assumption that the amount to be received from the State in 2019 and 2020 will be equal to the amount received in 2018 of $1,074,825. If the actual payment from the State falls below this amount, then the Employer must increase its contribution by the difference.

Actual contributions for the fiscal year ending September 30, 2018 were $5,463,192 from the City (after using $1,088,805 of the prepaid City contribution) plus $1,074,825 of annual State revenue, for a total of $6,538,017. The total annual required contribution was $6,538,017.

Revisions in Benefits

There were no revisions in benefits since the prior valuation.

Revisions in Actuarial Assumptions and Methods

Effective October 1, 2018, the investment return assumption was lowered from 7.25% to 7.00%, net of investment expenses.

As a result of this change, the required contribution increased by $491,959 (4.18% of covered payroll).

Actuarial Experience

There was a net actuarial loss of $1,495,646 since the last valuation which means that actual experience was less favorable than expected. The loss was primarily due to higher than expected average salary increases (10.7% compared to 5.5% expected) and more than expected retirements (5 actual compared to 2 expected). The liability loss was partially offset by gains due to an investment return above the assumed rate of 7.25%. The investment rate of return was 8.2% based on market value of assets and 8.1% based on actuarial value of assets. The net loss caused the required employer contribution to increase by 1.14% of covered payroll.

Funded Ratio

This year's funded ratio is 61.6% compared to 62.0% last year. The funded ratio was 63.3% before the assumption change described above. The ratio is equal to the actuarial value of assets divided by the actuarial accrued (past service) liability.

Analysis of Change in Employer Contribution

The components of change in the required Employer contribution are as follows:

Contribution Rate Last Year	64.30	%
Experience (Gains) or Losses	1.14	
Revision in Assumptions/Methods	4.18	
Amortization Payment on UAAL	(4.36)	
Normal Cost Rate	(0.66)	
Administrative Expense	(0.49)	
Change in State Contribution Rate	1.09	
Contribution Rate This Year	65.20	%

Variability of Future Contribution Rates

The Actuarial Cost Method used to determine the required contribution is intended to produce contribution rates which are generally level as a percent of payroll. Even so, when experience differs from the assumptions, as it often does, the employer's contribution rate can vary significantly from year-to-year. Over time, if the year-to-year gains and losses offset each other, the contribution rate would be expected to return to the current level, but this does not always happen.

The Market Value of Assets exceeds the Actuarial Value of Assets by $2,609,630 as of the valuation date (see Section C). This difference will be gradually recognized in the absence of offsetting gains and losses. In turn, the computed employer contribution rate will decrease by approximately 1.96% of covered payroll.

Relationship to Market Value

If Market Value had been the basis for the valuation, the City contribution rate would have been 63.24% and the funded ratio would have been 63.2%. In the absence of other gains and losses or changes, the City contribution rate should decrease to that level over the next several years.

Conclusion

It is important to note that system assets are not sufficient to cover the liabilities for current retirees. As of October 1, 2018, the assets are $93.6 million (after reflecting the $10.1 million reserve which is earmarked for future COLAs) and the liability for current retirees is $108.5 million. Some steps have been taken to address these issues, such as shortening the amortization period and lowering the investment return assumption. Given the low funded ratio, it is advisable to consider further steps. For each additional $5 million contributed, the funded ratio will increase by 3.0%.

The remainder of this Report includes detailed actuarial valuation results, information relating to the pension fund, financial accounting information, miscellaneous employee data and a summary of plan provisions.

RISKS ASSOCIATED WITH MEASURING THE ACCRUED LIABILITY AND ACTUARIALLY DETERMINED CONTRIBUTION

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

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 due to changing conditions; 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. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. Investment risk – actual investment returns may differ from the expected returns;
2. Contribution risk – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
3. Salary and Payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
4. Longevity risk – members may live longer or shorter than expected and receive pensions for a period of time other than assumed;
5. Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The computed contribution rate shown on page 1 may be considered as a minimum contribution rate that complies with the Board's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures include the following:

	2018	2017
Ratio of the market value of assets to total payroll*	8.4	8.7
Ratio of the actuarial accrued liability to payroll*	13.8	14.2
Ratio of actives to retirees and beneficiares	1.0	1.0
Ratio of net cash flow to market value of assets	-0.4%	-2.1%

* *Net of the COLA reserve*

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

RATIO OF ACTIVES TO RETIREES AND BENEFICIARIES

A young plan with many active members and few retirees will have a high ratio of active to retirees. A mature open plan may have close to the same number of actives to retirees resulting in a ratio near 1.0. A super-mature or closed plan may have significantly more retirees than actives resulting in a ratio below 1.0.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

ADDITIONAL RISK ASSESSMENT

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.

CHAPTER REVENUE

Increments in Chapter revenue over that received in 1998 must first be used to fund the cost of compliance with minimum benefits. As of the valuation date, all minimum benefits of Chapter 175 have been adopted.

Actuarial Confirmation of the Use of State Chapter Money		
1. Base Amount Previous Plan Year	$ 1,134,704	
2. Amount Received for Previous Plan Year	1,074,825	
3. Benefit Improvements	0	
4. Excess Funds for Previous Plan Year	0	
5. Accumulated Excess at Beginning of Previous Year	0	
6. Prior Excess Used in Previous Plan Year	0	
7. Accumulated Excess as of Valuation Date (Available for Benefit Improvements): (4) + (5) - (6)	0	*
8. Base Amount This Plan Year	$ 1,074,825	

* Not including the COLA Account, which is shown on the following page.

The Accumulated Excess shown in line 7 is being held in reserve and is subtracted from Plan assets (see Section C of this Report). The Base Amount in line 8 is the amount the employer may take as a credit against its required contribution; however, in no event may the employer take credit for more than the actual amount of Chapter revenue received.

Under the mutual agreement between the City and the Union, the City may use up to $1,206,994 to offset the required contribution. Any excess Chapter 175 revenue above this amount will be applied to the COLA Account. Please see the following page for the development of the COLA Account.

COLA ACCOUNT

ANALYSIS OF EXCESS STATE CONTRIBUTIONS

	October 1, 2018	October 1, 2017
A. COLA Account at Beginning of Year	$9,784,311	$9,092,732 *
B. Investment Return	8.16%	11.39%
C. Investment Earnings	798,400	1,035,662
D. Chapter 175 Regular Revenue	1,074,825	1,134,704
E. Chapter 175 Supplemental Revenue	0	0
F. Total Chapter 175 Revenue	1,074,825	1,134,704
G. Chapter Revenue in Excess of $1,206,994	0	0
H. Benefit Enhancement Percentage	0.50%	0.50%
I. Total Present Value of Benefit Enhancement	444,026	344,083
J. COLA Account at End of Year (A. + C. + G. - I.)	$10,138,685	$9,784,311

* From Foster & Foster actuarial valuation report dated March 31, 2017.

SECTION B

VALUATION RESULTS

PARTICIPANT DATA		
	October 1, 2018	**October 1, 2017**
ACTIVE MEMBERS		
Number	139	133
Covered Annual Payroll	$ 11,150,507	$ 9,960,429
Average Annual Payroll	$ 80,219	$ 74,890
Average Age	35.4	35.7
Average Past Service	8.5	8.8
Average Age at Hire	26.9	26.9
RETIREES, BENEFICIARIES & DROP		
Number	130	123
Annual Benefits	$ 8,030,319	$ 7,525,113
Average Annual Benefit	$ 61,772	$ 61,180
Average Age	60.4	59.4
DISABILITY RETIREES		
Number	4	5
Annual Benefits	$ 136,524	$ 162,834
Average Annual Benefit	$ 34,131	$ 32,567
Average Age	61.4	64.4
TERMINATED VESTED MEMBERS (EXCLUDING NON-VESTED REFUNDS PAYABLE)		
Number	0	0
Annual Benefits	$ 0	0
Average Annual Benefit	$ 0	0
Average Age	0.0	0.0

ACTUARIALLY DETERMINED CONTRIBUTION (ADC)			
A. Valuation Date	October 1, 2018 *After Change*	October 1, 2018 *Before Change*	October 1, 2017
B. ADC to Be Paid During Fiscal Year Ending	9/30/2020	9/30/2020	9/30/2019
C. Assumed Dates of Employer Contributions	Biweekly	Biweekly	Biweekly
D. Annual Payment to Amortize Unfunded Actuarial Liability	$ 5,724,692	$ 5,443,372	$ 5,171,663
E. Employer Normal Cost	2,282,165	2,104,027	1,990,286
F. ADC if Paid on the Valuation Date: D+E	8,006,857	7,547,399	7,161,949
G. ADC Adjusted for Frequency of Payments	8,288,378	7,821,973	7,422,501
H. ADC as % of Covered Payroll	74.33 %	70.15 %	74.52 %
I. Assumed Rate of Increase in Covered Payroll to Contribution Year	5.55 %	5.55 %	5.55 %
J. Covered Payroll for Contribution Year	11,769,360	11,769,360	10,513,233
K. ADC for Contribution Year: H x J	8,748,165	8,256,206	7,834,461
L. Estimated Credit for State Revenue in Contribution Year	1,074,825	1,074,825	1,074,825
M. Required Employer Contribution (REC) in Contribution Year	7,673,340	7,181,381	6,759,636
N. REC as % of Covered Payroll in Contribution Year: M/J	65.20 %	61.02 %	64.30 %

ACTUARIAL VALUE OF BENEFITS AND ASSETS			
A. Valuation Date	October 1, 2018 *After Change*	October 1, 2018 *Before Change*	October 1, 2017
B. Actuarial Present Value of All Projected Benefits for			
1. Active Members			
a. Service Retirement Benefits	$ 72,731,896	$ 68,959,644	$ 63,853,795
b. Vesting Benefits	1,121,487	1,059,394	1,019,308
c. Disability Benefits	1,609,170	1,542,989	1,367,673
d. Preretirement Death Benefits	940,676	895,138	777,038
e. Return of Member Contributions	391,371	388,452	302,310
f. Total	76,794,600	72,845,617	67,320,124
2. Inactive Members			
a. Service Retirees & Beneficiaries	107,023,528	104,321,406	98,247,717
b. Disability Retirees	1,489,171	1,459,046	1,705,614
c. Terminated Vested Members*	16,284	16,284	206,930
d. COLA Account	10,138,685	10,138,685	9,784,311
e. Total	118,667,668	115,935,421	109,944,572
3. Total for All Members	195,462,268	188,781,038	177,264,696
C. Actuarial Accrued (Past Service) Liability under Entry Age Normal	164,163,274	159,691,285	151,453,131
D. Actuarial Value of Accumulated Plan Benefits per FASB No. 35	142,479,073	138,309,306	131,217,061
E. Plan Assets			
1. Market Value	103,733,220	103,733,220	96,312,093
2. Actuarial Value	101,123,590	101,123,590	93,945,622
F. Unfunded Actuarial Accrued Liability	63,039,684	58,567,695	57,507,509
G. Actuarial Present Value of Projected Covered Payroll	112,974,649	111,157,355	96,428,036
H. Actuarial Present Value of Projected Member Contributions	10,017,420	9,859,692	8,564,204
I. Accumulated Contributions of Active Members	6,179,116	6,179,116	5,617,749

* Terminated Vested liability includes refunds payable for terminated non-vested members.

CALCULATION OF EMPLOYER NORMAL COST			
A. Valuation Date	October 1, 2018 *After Change*	October 1, 2018 *Before Change*	October 1, 2017
B. Normal Cost for			
1. Service Retirement Benefits	$ 2,830,652	$ 2,663,209	$ 2,444,750
2. Vesting Benefits	93,161	87,830	76,956
3. Disability Benefits	108,687	105,168	94,649
4. Preretirement Death Benefits	64,222	61,685	55,202
5. Return of Member Contributions	77,692	78,384	68,799
6. Total for Future Benefits	3,174,414	2,996,276	2,740,356
7. Assumed Amount for Administrative Expenses	111,297	111,297	146,369
8. Total Normal Cost	3,285,711	3,107,573	2,886,725
C. Expected Member Contribution	1,003,546	1,003,546	896,439
D. Employer Normal Cost: B8-C	2,282,165	2,104,027	1,990,286
E. Employer Normal Cost as a % of Covered Payroll	20.47%	18.87%	19.98%

A. UAAL AMORTIZATION PERIOD AND PAYMENTS						
Original UAAL			Current UAAL			
Date Established	Base Established	Amortization Period (Years)	Years Remaining	Amount	Payment After Change	Payment Before Change
10/1/2015	Initial Unfunded Liability	18	15	$ 37,358,497	$ 3,580,743	$ 3,630,771
10/1/2015	Benefit Change	20	17	(1,085,163)	(96,264)	(97,770)
10/1/2016	Assumption Change	20	18	3,924,753	336,642	342,177
10/1/2016	Actuarial Loss	20	18	6,776,180	581,221	590,776
10/1/2017	Actuarial Gain	20	19	(1,588,009)	(132,078)	(134,352)
10/1/2017	Assumption Change	20	19	11,697,633	972,914	989,670
10/1/2017	Method Change	20	19	(11,842)	(985)	(1,002)
10/1/2018	Actuarial Loss	20	20	1,495,646	120,927	123,102
10/1/2018	Assumption Changes	20	20	4,471,989	361,572	N/A
				$ 63,039,684	$ 5,724,692	$ 5,443,372

B. Amortization Schedule

The UAAL is being amortized as a level percentage of covered annual payroll over the number of years remaining in the amortization period. The following schedule illustrates the expected amortization of the UAAL:

Amortization Schedule	
Year	Expected UAAL
2018	$ 63,039,684
2019	61,327,054
2020	59,422,860
2021	57,312,867
2022	54,981,819
2023	52,413,386
2028	35,353,394
2033	9,140,714
2038	-

ACTUARIAL GAINS AND LOSSES

The assumptions used to anticipate mortality, employment turnover, investment income, expenses, salary increases, and other factors have been based on long range trends and expectations. Actual experience can vary from these expectations. The variance is measured by the gain and loss for the period involved. If significant long term experience reveals consistent deviation from what has been expected and that deviation is expected to continue, the assumptions should be modified. The net actuarial gain (loss) for the past year is computed as follows:

1. Last Year's UAAL	57,507,509
2. Last Year's Employer Normal Cost	1,990,286
3. Last Year's Contributions	
a. Employer Contribution	5,463,192
b. State Contribution Used to Offset Required Contribution	1,074,825
c. Total Contributions	6,538,017
4. Interest at the Assumed Rate on:	
a. 1 and 2 for one year	4,313,590
b. 3 from dates paid	201,319
c. a - b	4,112,271
5. This Year's Expected UAAL Prior to Revision: 1 + 2 - 3c + 4c	57,072,049
6. Change in UAAL Due to Plan Amendments and/or Changes in Actuarial Assumptions and Methods	4,471,989
7. This Year's Expected UAAL (after changes): 5 + 6	61,544,038
8. This Year's Actual UAAL (after changes)	63,039,684
9. Net Actuarial Gain/(Loss): 7 - 8	(1,495,646)
10. Gain/(Loss) Due to Investment	800,312
11. Gain/(Loss) Due to Other Sources	(2,295,958)

Net actuarial gains/(losses) since October 1, 2016 have been as follows:

Year Ending	Actuarial Gain / (Loss)
9/16	$ (6,763,388)
9/17	$ 1,589,255
9/18	(1,495,646)

The fund earnings and salary increase assumptions have considerable impact on the cost of the plan so it is important that they are in line with the actual experience. The following table shows the actual fund earnings and salary increase rates compared to the assumed rates for the last few years:

Year Ending	Investment Return		Salary Increases	
	Actual*	Assumed	Actual**	Assumed
9/30/2014	9.4 %	8.0 %	0.8 %	5.7 %
9/30/2015	8.8	8.0	9.8	5.6
9/30/2016	7.1	8.0	28.1	5.6
9/30/2017	7.1 ***	8.0	(4.5)	5.3
9/30/2018	8.1	7.25	10.7	5.5
Average	8.1 %	---	8.4 %	---

** Prior to 9/30/2017, the investment return was based on the combined Police and Fire Retirement System.*
*** Prior to 9/30/2016, the salary increase was based on the combined Police and Fire Retirement System.*
**** Before reflecting fresh start of assets as of 10/1/2016 and new asset smoothing method.*

The actual investment return rates shown above are based on the actuarial value of assets. The actual salary increase rates shown above are the increases received by those active members who were included in the actuarial valuations both at the beginning and end of each period.

Number Added To and Removed from Active Participation

Actual (A) Versus Expected (E) Decrements

Year Ended	Number Added During Year		Service & DROP Retirement		Disability Retirement		Died In Service		Terminations				Active Members End of Year
									Vested	Other	Totals		
	A	E	A	E	A	E	A	E	A	A	A	E	
9/30/2017	25	4	2	4	0	0	0	0	0	2	2	3	133
9/30/2018	14	8	5	2	0	0	0	0	0	3	3	4	139
9/30/2019				4		0		0				5	

RECENT HISTORY OF VALUATION RESULTS									
Valuation Date	Number of Active Members	Number of Inactive Members	Covered Annual Payroll	Actuarial Value of Assets	Accrued Liability	Unfunded Accrued Liability	Funded Ratio	Employer Normal Cost Amount	Employer Normal Cost % of Payroll
10/1/2015	110	116	$8,019,724	$83,276,890	$121,406,576	$38,129,686	68.6 %	$1,366,029	17.03 %
10/1/2016	112	127	9,536,432	89,529,663	136,953,691	47,424,028	65.4	1,563,454	16.39
10/1/2017	133	128	9,960,429	93,945,622	151,453,131	57,507,509	62.0	1,990,286	19.98
10/1/2018	139	134	11,150,507	101,123,590	164,163,274	63,039,684	61.6	2,282,165	20.47

Results before October 1, 2017 were determined by the Retirement System's prior actuary, Foster & Foster.

RECENT HISTORY OF REQUIRED AND ACTUAL CONTRIBUTIONS										
	End of Year To Which Valuation Applies	Required Contributions						Actual Contributions		
		Employer & State		Estimated State		Net Employer				
Valuation Date		Amount	% of Payroll	Amount	% of Payroll	Amount	% of Payroll	Employer	State	Total
10/1/2015	9/30/2017	$5,332,347	62.99 %	$1,193,140	14.09 %	$4,139,207	48.90 %	$4,197,643	$1,134,704	$5,332,347
10/1/2016	9/30/2018	6,538,017	64.95	1,134,704	11.27	5,403,313	53.68	$5,463,192	$1,074,825	$6,538,017
10/1/2017	9/30/2019	7,834,461	74.52	1,074,825	10.22	6,759,636	64.30	---	---	---
10/1/2018	9/30/2020	8,748,165	74.33	1,074,825	9.13	7,673,340	65.20	---	---	---

Results before October 1, 2017 were determined by the Retirement System's prior actuary, Foster & Foster.

ACTUARIAL ASSUMPTIONS AND COST METHOD

Valuation Methods

Actuarial Cost Method - Normal cost and the allocation of benefit values between service rendered before and after the valuation date were determined using an **Individual Entry-Age Actuarial Cost Method** having the following characteristics:

(i) the annual normal cost for each individual active member, payable from the date of employment to the date of retirement, is sufficient to accumulate the value of the member's benefit at the time of retirement;

(ii) each annual normal cost is a constant percentage of the member's year by year projected covered pay.

Actuarial gains/(losses), as they occur, reduce (increase) the Unfunded Actuarial Accrued Liability.

Financing of Unfunded Actuarial Accrued Liabilities - Unfunded Actuarial Accrued Liabilities (full funding credit if assets exceed liabilities) were amortized by level (principal & interest combined) percent-of-payroll contributions over a reasonable period of future years.

Actuarial Value of Assets – The Actuarial Value of Assets phase in the difference between the expected return on actuarial value and actual return on market value of assets at the rate of 20% per year. The Actuarial Value of Assets will be further adjusted to the extent necessary to fall within the corridor whose lower limit is 80% of the Market Value of plan assets and whose upper limit is 120% of the Market Value of plan assets. During periods when investment performance exceeds the assumed rate, Actuarial Value of Assets will tend to be less than Market Value. During periods when investment performance is less than assumed rate, Actuarial Value of Assets will tend to be greater than Market Value.

Valuation Assumptions

The actuarial assumptions used in the valuation are shown in this Section. Both the economic and decrement assumptions were established following an Experience Study, as prepared by Foster & Foster, dated October 28, 2013. The investment return assumption was updated in 2017 and 2018. The covered group is too small to provide statistically significant experience on which to base the mortality assumption. Mortality is based on a commonly used mortality table and projection scale.

Economic Assumptions

The investment return rate assumed in the valuation is 7.00% per year, compounded annually (net after investment expenses), previously 7.25%.

The **Inflation Rate** assumed in this valuation is 2.5% per year. The Inflation Rate is defined to be the expected long-term rate of increases in the prices of goods and services.

The assumed **real rate of return** over inflation is defined to be the portion of total investment return that is more than the assumed inflation rate. Considering other economic assumptions, the 7.0% investment return rate translates to an assumed real rate of return over inflation of 4.50%.

The active member population is assumed to remain constant. For purposes of financing the unfunded liabilities, total payroll is assumed to grow at 1.17% per year (the average growth over the last ten years as determined in 2014).

The rates of salary increase used are 6.25% per year for the first 10 years of service, 5.00% thereafter. This assumption is used to project a member's current salary to the salaries upon which benefits will be based. Part of the assumption for each age is for merit and/or seniority increase, and the other 2.5% recognizes wage inflation, including price inflation, productivity increases, and other macroeconomic forces.

Demographic Assumptions

The mortality table is the RP-2000 Combined Healthy Participant Mortality Table (for pre-retirement mortality) and the RP-2000 Mortality Table for Annuitants (for post-retirement mortality), with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 90% blue collar adjustment and a 10% white collar adjustment. For females, the base mortality rates include a 100% white collar adjustment. These are the same rates used for Special Risk Class members of the Florida Retirement System (FRS) in the July 1, 2016 FRS Valuation, as mandated by Florida Statutes, Chapter 112.63.

FRS Healthy Post-Retirement Mortality for Special Risk Class Members

Sample Attained Ages (in 2018)	Probability of Dying Next Year: Men	Probability of Dying Next Year: Women	Future Life Expectancy (years): Men	Future Life Expectancy (years): Women
50	0.53 %	0.23 %	34.01	38.40
55	0.67	0.32	29.37	33.39
60	0.90	0.47	24.80	28.48
65	1.29	0.73	20.40	23.74
70	1.98	1.22	16.26	19.27
75	3.21	2.07	12.52	15.19
80	5.29	3.47	9.30	11.56

This assumption is used to measure the probabilities of each benefit payment being made after retirement

FRS Healthy Pre-Retirement Mortality for Special Risk Class Members

Sample Attained Ages (in 2018)	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	0.22 %	0.15 %	35.00	38.75
55	0.39	0.24	29.88	33.61
60	0.71	0.39	25.00	28.59
65	1.21	0.70	20.44	23.76
70	1.98	1.22	16.26	19.27
75	3.21	2.07	12.52	15.19
80	5.29	3.47	9.30	11.56

This assumption is used to measure the probabilities of active members dying prior to retirement (75% of pre-retirement deaths are assumed to be service-connected).

For disabled retirees, the mortality table used was 60% of the RP-2000 for Disabled Annuitants with ages set back 4 years for males and set forward 2 years for females, and 40% of the RP2000 Annuitant Mortality Table with a White Collar adjustment with no age setback, both with no provision being made for future mortality improvements. These are the same rates used for Special Risk Class members of the Florida Retirement System (FRS) in the July 1, 2016 FRS Valuation, as mandated by Florida Statutes, Chapter 112.63.

FRS Disabled Mortality for Special Risk Class Members

Sample Attained Ages (in 2018)	Probability of Dying Next Year		Future Life Expectancy (years)	
	Men	Women	Men	Women
50	1.67 %	0.91 %	23.74	27.06
55	2.03	1.26	20.77	23.37
60	2.47	1.67	17.91	19.90
65	3.07	2.24	15.15	16.62
70	3.90	3.18	12.52	13.58
75	5.30	4.60	10.02	10.86
80	7.59	6.66	7.80	8.48

The rates of retirement used to measure the probability of eligible members retiring during the next year were as follows:

Number of Years Eligible for Normal Retirement	Probability of Normal Retirement*
0	25%
1	10%
2	10%
3	25%
4	25%
5	100%

** 100% at first eligibility for those hired on or after October 4, 2016 with 25 years of service at retirement.*

No early retirement rates were assumed.

Rates of separation from active membership were as shown below (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	% of Active Members Separating Within Next Year
20	8.0 %
25	7.0
30	6.0
35	3.0
40+	0.0

Rates of disability among active members (75% of disabilities are assumed to be service-connected).

Sample Ages	% Becoming Disabled Within Next Year
20	0.07 %
25	0.08
30	0.09
35	0.12
40	0.15
45	0.26
50	0.50
55	0.78

Miscellaneous and Technical Assumptions

Administrative & Investment Expenses	The investment return assumption is intended to be the return net of investment expenses. Annual administrative expenses are assumed to be equal to the prior year's expenses. Assumed administrative expenses are added to the Normal Cost.
Benefit Service	Service calculated based on completed months is used to determine the amount of benefit payable.
Cost of Living Adjustment	The cost of living adjustment for members who receive future normal retirement benefits is 1.0% starting on the 25th anniversary of the retirees' hire date. Additional increases are available when the revenue under Chapter 175 exceeds $1,206,994. Effective October 4, 2016, the adjustment will begin one year after separating from employment.
Decrement Operation	Disability and mortality decrements operate during retirement eligibility.
Decrement Timing	Decrements of all types are assumed to occur at the beginning of the 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.
Forfeitures	For vested separations from service, it is assumed that 0% of members separating will withdraw their contributions and forfeit an employer financed benefit. It was further assumed that the liability at termination is the greater of the vested deferred benefit (if any) or the member's accumulated contributions.
Incidence of Contributions	Employer contributions are assumed to be made at the end of each biweekly pay period. Member 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.
Marriage Assumption	100% of males and 100% of females are assumed to be married for purposes of death-in-service benefits. Male spouses are assumed to be three years older than female spouses for active member valuation purposes.

Normal Form of Benefit	For married participants, a monthly income payable for life of the member; upon death of member, 100% of member's benefit payable to spouse for one year and 60% thereafter until death or remarriage of spouse. For members who were not eligible for normal retirement on October 4, 2016, the normal form for the benefit based on service after October 4, 2016 is a 10-Year Certain and Life annuity.
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.
Service Credit Accruals	It is assumed that members accrue one year of service credit per year.

GLOSSARY

Actuarial Accrued Liability (AAL)	The difference between the Actuarial Present Value of Future Benefits, and the Actuarial Present Value of Future Normal Costs.
Actuarial Assumptions	Assumptions about future plan experience that affect costs or liabilities, such as: mortality, withdrawal, disablement, and retirement; future increases in salary; future rates of investment earnings; future investment and administrative expenses; characteristics of members not specified in the data, such as marital status; characteristics of future members; future elections made by members; and other items.
Actuarial Cost Method	A procedure for allocating the Actuarial Present Value of Future Benefits between the Actuarial Present Value of Future Normal Costs and the Actuarial Accrued Liability.
Actuarial Equivalent	Of equal Actuarial Present Value, determined as of a given date and based on a given set of Actuarial Assumptions.
Actuarial Present Value (APV)	The amount of funds required to provide a payment or series of payments in the future. It is determined by discounting the future payments with an assumed interest rate and with the assumed probability each payment will be made.
Actuarial Present Value of Future Benefits (APVFB)	The Actuarial Present Value of amounts which are expected to be paid at various future times to active members, retired members, beneficiaries receiving benefits, and inactive, nonretired members entitled to either a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.
Actuarial Valuation	The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial Valuation for a governmental retirement system typically also includes calculations of items needed for compliance with GASB No. 67, such as the Funded Ratio and the Actuarially Determined Contribution (ADC).
Actuarial Value of Assets	The value of the assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets or a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the Actuarially Determined Contribution (ADC).

Amortization Method	A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization Payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the rate at which total covered payroll of all active members is assumed to increase.
Amortization Payment	That portion of the plan contribution or ADC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.
Amortization Period	The period used in calculating the Amortization Payment.
Actuarially Determined Contribution (ADC)	The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation, determined under GASB No. 67. The ADC consists of the Employer Normal Cost and Amortization Payment.
Closed Amortization Period	A specific number of years that is reduced by one each year, and declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc.
Employer Normal Cost	The portion of the Normal Cost to be paid by the employer. This is equal to the Normal Cost less expected member contributions.
Equivalent Single Amortization Period	For plans that do not establish separate amortization bases (separate components of the UAAL), this is the same as the Amortization Period. For plans that do establish separate amortization bases, this is the period over which the UAAL would be amortized if all amortization bases were combined upon the current UAAL payment.
Experience Gain/Loss	A measure of the difference between the normal cost rate from last year and the normal cost rate from this year.
Funded Ratio	The ratio of the Actuarial Value of Assets to the Actuarial Accrued Liability.
GASB	Governmental Accounting Standards Board.
GASB No. 67 and GASB No. 68	These are the governmental accounting standards that set the accounting rules for public retirement systems and the employers that sponsor or contribute to them. Statement No. 68 sets the accounting rules for the employers that sponsor or contribute to public retirement systems, while Statement No. 67 sets the rules for the systems themselves.

Normal Cost	The annual cost assigned, under the Actuarial Cost Method, to the current plan year.
Open Amortization Period	An open amortization period is one which is used to determine the Amortization Payment but which does not change over time. In other words, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year. In theory, if an Open Amortization Period is used to amortize the Unfunded Actuarial Accrued Liability, the UAAL will never completely disappear, but will become smaller each year, either as a dollar amount or in relation to covered payroll.
Unfunded Actuarial Accrued Liability	The difference between the Actuarial Accrued Liability and Actuarial Value of Assets.
Valuation Date	The date as of which the Actuarial Present Value of Future Benefits are determined. The benefits expected to be paid in the future are discounted to this date.

SECTION C

PENSION FUND INFORMATION

Statement of Plan Assets at Market Value

Item	September 30 2018	2017
A. Cash and Cash Equivalents (Operating Cash)	$ 2,599	$ 4,277
B. Receivables		
1. Member Contributions	$ 36,014	$ 32,337
2. Interest and Dividends	122,033	252,745
3. Due from Broker	1,106,110	205,074
4. Prepaid Expenses and Other	-	3,553
5. State Contribution	1,074,825	-
6. Total Receivables	$ 2,338,982	$ 493,709
C. Investments		
1. Short Term Investments	$ 2,278,465	$ 2,236,985
2. Domestic Equities	47,651,509	43,384,176
3. International Equities	17,404,123	17,101,478
4. Domestic Fixed Income	16,946,808	16,401,634
5. International Fixed Income	3,840,576	3,732,090
6. Real Estate	8,954,689	8,344,962
7. Other	5,516,025	6,298,193
8. Total Investments	$ 102,592,195	$ 97,499,518
D. Liabilities		
1. Prepaid City Contribution	$ (435,051)	$ (1,523,856)
2. Accounts Payable	(77,623)	(57,812)
3. Due to Broker	(600,024)	(103,743)
4. Due to Police Officers Retirement System	(87,858)	-
5. Total Liabilities	$ (1,200,556)	$ (1,685,411)
E. Total Market Value of Assets Available for Benefits	$ 103,733,220	$ 96,312,093
F. Allocation of Investments		
1. Short Term Investments	2.2%	2.3%
2. Domestic Equities	46.5%	44.5%
3. International Equities	17.0%	17.5%
4. Domestic Fixed Income	16.5%	16.8%
5. International Fixed Income	3.7%	3.8%
6. Real Estate	8.7%	8.6%
7. Other	5.4%	6.5%
8. Total Investments	100.0%	100.0%

Note: The asset amounts do not include DROP account balances.

Reconciliation of Plan Assets

Item		September 30 2018		2017
A. Market Value of Assets at Beginning of Year	$	96,312,093	$	88,287,564
1. Adjustment for Final Settlement of Legacy Fund Split		160,328		-
2. Market Value of Assets After Adjustment		96,472,421		88,287,564
B. Revenues and Expenditures				
1. Contributions				
a. Member Contributions	$	991,333	$	903,846
b. Employer Contributions		5,463,192		4,197,643
c. State Contributions		1,074,825		1,134,704
d. Total	$	7,529,350	$	6,236,193
2. Investment Income				
a. Interest, Dividends, and Other Income	$	2,654,297	$	2,337,178
c. Net Realized/Unrealized Gains/(Losses)*		5,927,177		8,138,535
d. Investment Expenses		(742,107)		(531,410)
e. Net Investment Income	$	7,839,367	$	9,944,303
3. Benefits and Refunds				
a. Regular Monthly Benefits	$	(7,986,172)	$	(8,002,925)
b. Refunds		(10,449)		(6,673)
c. Lump Sum Benefits Paid		-		-
d. Total	$	(7,996,621)	$	(8,009,598)
4. Administrative and Miscellaneous Expenses	$	(111,297)	$	(146,369)
C. Market Value of Assets at End of Year	$	103,733,220	$	96,312,093

** The breakdown between realized and unrealized gain/losses was not provided.*

Note: The asset amounts do not include DROP account balances.

Reconciliation of DROP Accounts

Year Ended 9/30	Balance at Beginning of Year	Credits	Interest	Distributions	Balance at End of Year
2017	$10,488,353	$1,541,096	$741,658	($1,680,260)	$11,090,847
2018	$11,090,847	$1,278,933	$762,812	($1,716,794)	$11,415,798

ACTUARIAL VALUE OF ASSETS

	Valuation Date – September 30	2017	2018	2019	2020	2021	2022
A.	Actuarial Value of Assets Beginning of Year	$ 88,287,564	$ 93,945,622				
B.	Market Value End of Year	96,312,093	103,733,220				
C.	Market Value Beginning of Year	88,287,564	96,312,093				
D.	Non-Investment/Administrative Net Cash Flow	(1,919,774)	(418,240)				
E.	Investment Income						
	E1. Actual Market Total: B-C-D	9,944,303	7,839,367				
	E2. Assumed Rate of Return	8.00%	7.25%	7.00%	7.00%	7.00%	7.00%
	E3. Assumed Amount of Return	6,986,214	6,795,896				
	E4. Amount Subject to Phase-In: E1–E3	2,958,089	1,043,471				
F.	Phased-In Recognition of Investment Income						
	F1. Current Year: 0.2 x E4	591,618	208,694				
	F2. First Prior Year	-	591,618	208,694			
	F3. Second Prior Year	-	-	591,618	208,694		
	F4. Third Prior Year	-	-	-	591,618	208,694	
	F5. Fourth Prior Year	-	-	-	-	591,618	208,694
	F6. Total Phase-Ins	591,618	800,312	800,312	800,312	800,312	208,694
G.	**Actuarial Value of Assets End of Year**						
	G1. Preliminary Actuarial Value of Assets End of Year: A+D+E3+F6	93,945,622	101,123,590				
	G2. Upper Corridor Limit: 120%*B	115,574,512	124,479,864				
	G3. Lower Corridor Limit: 80%*B	77,049,674	82,986,576				
	G4. Actuarial Value of Assets End of Year	93,945,622	101,123,590				
H.	Difference between Market & Actuarial Value of Assets	2,366,471	2,609,630				
I.	**Actuarial Rate of Return**	8.7%	8.1%				
J.	**Market Value Rate of Return**	11.4%	8.2%				
K.	**Ratio of Actuarial Value of Assets to Market Value**	97.5%	97.5%				

Year Ending September 30th	Investment Rate of Return*	
	Market Value	**Actuarial Value**
2014	10.0 %	9.4 %
2015	(1.2)	8.8
2016	8.9	7.1
2017	11.4	7.1 **
2018	8.2	8.1
Average Returns:		
All Years	7.3 %	8.1 %

** Prior to 9/30/2017, the investment return was based on the combined Police and Firefighter Retirement System.*
*** Before reflecting fresh start of assets as of 10/1/2016 and new asset smoothing method.*

The above rates are based on the retirement system's financial information reported to the actuary. They may differ from figures that the investment consultant reports, in part because of differences in the handling of administrative and investment expenses, and in part because of differences in the handling of cash flows.

SECTION D

FINANCIAL ACCOUNTING INFORMATION

FASB NO. 35 INFORMATION

A. Valuation Date	October 1, 2018	October 1, 2017
B. Actuarial Present Value of Accumulated Plan Benefits		
1. Vested Benefits		
a. Members Currently Receiving Payments	$ 108,512,699	$ 99,953,331
b. Terminated Vested Members	16,284	206,930
c. Other Members	32,783,228	30,315,019
d. Total	141,312,211	130,475,280
2. Non-Vested Benefits	1,166,862	741,781
3. Total Actuarial Present Value of Accumulated Plan Benefits: 1d + 2	142,479,073	131,217,061
4. Accumulated Contributions of Active Members	6,179,116	5,617,749
C. Changes in the Actuarial Present Value of Accumulated Plan Benefits		
1. Total Value at Beginning of Year	131,217,061	110,990,089
2. Increase (Decrease) During the Period Attributable to:		
a. Plan Amendment	0	0
b. Change in Actuarial Assumptions	4,169,767	10,502,640
c. Latest Member Data, Benefits Accumulated and Decrease in the Discount Period	15,088,866	17,733,930
d. Benefits Paid	(7,996,621)	(8,009,598)
e. Net Increase	11,262,012	20,226,972
3. Total Value at End of Period	142,479,073	131,217,061
D. Market Value of Assets (Net of COLA Reserve)	93,594,535	86,527,782
E. Actuarial Assumptions - See page entitled Actuarial Assumptions and Methods		

SCHEDULE OF CHANGES IN THE EMPLOYER'S NET PENSION LIABILITY AND RELATED RATIOS GASB Statement No. 67

Fiscal year ending September 30,	2018	2017
Total Pension Liability		
Service Cost	$ 2,325,806	$ 2,278,992
Interest	12,106,606	11,308,126
Benefit Changes	-	-
Difference between actual & expected experience	(2,577,793)	4,638,688
Assumption Changes	11,883,072	-
Benefit Payments	(8,424,033)	(8,142,089)
Refunds	(10,449)	(6,673)
Net Change in Total Pension Liability	15,303,209	10,077,044
Total Pension Liability - Beginning	153,224,007	143,146,963
Total Pension Liability - Ending (a)	$ 168,527,216	$ 153,224,007
Plan Fiduciary Net Position		
Contributions - Employer	$ 4,374,387	$ 5,721,499
Contributions - Employer (from State)	1,074,825	1,134,704
Contributions - Non-Employer Contributing Entity	-	-
Contributions - Member	991,333	903,846
Net Investment Income	8,602,179	10,685,983
Benefit Payments	(8,424,033)	(8,142,089)
Refunds	(10,449)	(6,673)
Administrative Expense	(111,297)	(146,391)
Other	160,328 *	-
Net Change in Plan Fiduciary Net Position	6,657,273	10,150,879
Plan Fiduciary Net Position - Beginning	108,926,796	98,775,917
Plan Fiduciary Net Position - Ending (b)	$ 115,584,069	$ 108,926,796
Net Pension Liability - Ending (a) - (b)	52,943,147	44,297,211
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	68.58 %	71.09 %
Covered Payroll	$ 10,494,232	$ 8,954,177
Net Pension Liability as a Percentage of Covered Payroll	504.50 %	494.71 %

** Due from Police Pension Fund for final settlement of Legacy Fund split.*

SCHEDULE OF THE EMPLOYER'S NET PENSION LIABILITY
GASB Statement No. 67

FY Ending September 30,	Total Pension Liability	Plan Net Position	Net Pension Liability	Plan Net Position as a % of Total Pension Liability	Covered Payroll	Net Pension Liability as a % of Covered Payroll
2017	$ 153,224,007	$ 108,926,796	$ 44,297,211	71.09%	$ 8,954,177	494.71%
2018	168,527,216	115,584,069	52,943,147	68.58%	10,494,232	504.50%

NOTES TO SCHEDULE OF THE EMPLOYER'S NET PENSION LIABILITY
GASB Statement No. 67

Valuation Date:	October 1, 2017
Measurement Date:	September 30, 2018

Methods and Assumptions Used to Determine Net Pension Liability:

Actuarial Cost Method	Entry Age Normal
Inflation	2.50%
Salary Increases	5.00% to 6.25% depending on service
Investment Rate of Return	7.25%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition.
Mortality	RP-2000 Combined Healthy Participant Mortality Table (for pre-retirement mortality) and the RP-2000 Mortality Table for Annuitants (for post-retirement mortality), with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 90% blue collar adjustment and a 10% white collar adjustment. For females, the base mortality rates include a 100% white collar adjustment. These are the same rates currently in use for Special Risk Class members of the Florida Retirement System (FRS), as required under Florida Statutes, Chapter 112.63.

Other Information:

Notes	See Section A in the October 1, 2017 Actuarial Valuation Report. Effective as of October 1, 2017, the investment return assumption was lowered from 8.0% to 7.25%. The mortality assumption for active members prior to retirement was revised in accordance with a revision to the active member pre-retirement mortality assumption used by the Florida Retirement System (FRS) in their July 1, 2016 Actuarial Valuation.

SCHEDULE OF CONTRIBUTIONS
GASB Statement No. 67

FY Ending September 30,	Actuarially Determined Contribution	Actual Contribution	Contribution Deficiency (Excess)	Covered Payroll	Actual Contribution as a % of Covered Payroll
2017	$ 5,332,347	$ 6,856,203	$ (1,523,856)	$ 8,954,177	76.57%
2018	6,538,017	5,449,212	1,088,805	10,494,232	51.93%

NOTES TO SCHEDULE OF CONTRIBUTIONS
GASB Statement No. 67

Valuation Date:	October 1, 2016
Notes	Actuarially determined contributions are calculated as of October 1, which is two years prior to the end of the fiscal year in which contributions are reported.

Methods and Assumptions Used to Determine Contribution Rates:

Actuarial Cost Method	Entry Age Normal
Amortization Method	Level Dollar, Closed
Remaining Amortization Period	20 years
Asset Valuation Method	Actuarial Value of Assets in the most recent valuation is increased by the average annual market value rate of return for the past four years.
Inflation	2.50%
Salary Increases	5.0% to 6.25% based on service
Investment Rate of Return	8.00%
Retirement Age	Experience-based table of rates that are specific to the type of eligibility condition.
Mortality	RP-2000 Mortality Table for Annuitants, with mortality improvements projected to all future years after 2000 using Scale BB. For males, the base mortality rates include a 90% blue collar adjustment and a 10% white collar adjustment. For females, the base mortality rates include a 100% white collar adjustment. These are the same rates used for Special Risk Class members of the Florida Retirement System (FRS) in their July 1, 2014 valuation, as required under Florida Statutes, Chapter 112.63.

Other Information:

Notes	See Discussion of Valuation Resuts in the October 1, 2016 Actuarial Valuation Report.

SINGLE DISCOUNT RATE
GASB Statement No. 67

A single discount rate of 7.25% was used to measure the total pension liability. This single discount rate was based on the expected rate of return on pension plan investments of 7.25%. The projection of cash flows used to determine this single discount rate assumed that plan member contributions will be made at the current contribution rate and that employer contributions will be made at rates equal to the difference between the total actuarially determined contribution rates and the member rate. Based on these assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments (7.25%) was applied to all periods of projected benefit payments to determine the total pension liability.

Regarding the sensitivity of the net pension liability to changes in the single discount rate, the following presents the plan's net pension liability, calculated using a single discount rate of 7.25%, as well as what the plan's net pension liability would be if it were calculated using a single discount rate that is 1-percentage-point lower or 1-percentage-point higher.

Sensitivity of the Net Pension Liability to the Single Discount Rate Assumption

1% Decrease 6.25%	Current Single Discount Rate Assumption 7.25%	1% Increase 8.25%
$71,560,780	$52,943,147	$37,681,690

SECTION E

MISCELLANEOUS INFORMATION

RECONCILIATION OF MEMBERSHIP DATA		
	From 10/1/17 To 10/1/18	**From 10/1/16 To 10/1/17**
A. Active Members		
1. Number Included in Last Valuation	133	112
2. New Members Included in Current Valuation	14	25
3. Non-Vested Employment Terminations	(3)	(2)
4. Vested Employment Terminations	0	0
5. DROP Retirement	(5)	(2)
6. Service Retirements	0	0
7. Disability Retirements	0	0
8. Deaths	0	0
9. Other - Transfer/Rehire	0	0
10. Number Included in This Valuation	139	133
B. Terminated Vested Members		
1. Number Included in Last Valuation	0	0
2. Additions from Active Members	0	0
3. Lump Sum Payments/Refund of Contributions	0	0
4. Payments Commenced	0	0
5. Deaths	0	0
6. Other - Rehire	0	0
7. Number Included in This Valuation	0	0
C. DROP Plan Members		
1. Number Included in Last Valuation	16	24
2. Addition from Active Members	5	2
3. Retirements	(4)	(10)
4. Deaths Resulting in No Further Payments	0	0
5. Other	0	0
6. Number Included in This Valuation	17	16
D. Service Retirees, Disability Retirees and Beneficiaries		
1. Number Included in Last Valuation	112	103
2. Additions from Active Members	0	0
3. Additions from DROP	4	10
4. Additions from Terminated Vested Members	0	0
5. Deaths Resulting in No Further Payments	(1)	(1)
6. Deaths Resulting in New Survivor Benefits	1	0
7. End of Certain Period - No Further Payments	0	0
8. Other - Data Correction	1	0
9. Number Included in This Valuation	117	112

ACTIVE MEMBERS AS OF OCTOBER 1, 2018

	Years of Service to Valuation Date									
Age Group	0-1	1-2	2-3	3-4	4-5	5-9	10-14	15-19	20-24	25 & Up	**Totals**
20-24 NO	5	4	1	-	-	-	-	-	-	-	10
TOT PAY	267,695	210,408	57,490	-	-	-	-	-	-	-	535,593
AVG PAY	53,539	52,602	57,490	-	-	-	-	-	-	-	53,559
25-29 NO	4	10	6	2	2	1	-	-	-	-	25
TOT PAY	214,156	538,623	348,046	121,537	124,172	66,086	-	-	-	-	1,412,620
AVG PAY	53,539	53,862	58,008	60,769	62,086	66,086	-	-	-	-	56,505
30-34 NO	3	4	5	2	1	9	9	-	-	-	33
TOT PAY	160,617	217,833	290,750	123,433	63,792	632,278	850,944	-	-	-	2,339,647
AVG PAY	53,539	54,458	58,150	61,717	63,792	70,253	94,549	-	-	-	70,898
35-39 NO	1	2	4	1	3	5	6	9	-	-	31
TOT PAY	53,539	108,690	228,284	61,670	189,164	357,121	547,508	920,095	-	-	2,466,071
AVG PAY	53,539	54,345	57,071	61,670	63,055	71,424	91,251	102,233	-	-	79,551
40-44 NO	-	-	1	-	-	-	9	9	-	-	19
TOT PAY	-	-	58,810	-	-	-	841,547	856,717	-	-	1,757,074
AVG PAY	-	-	58,810	-	-	-	93,505	95,191	-	-	92,478
45-49 NO	-	-	-	-	-	-	1	7	4	-	12
TOT PAY	-	-	-	-	-	-	85,029	718,541	433,764	-	1,237,334
AVG PAY	-	-	-	-	-	-	85,029	102,649	108,441	-	103,111
50-54 NO	1	-	-	-	-	-	1	4	1	-	7
TOT PAY	53,539	-	-	-	-	-	87,233	390,678	104,216	-	635,666
AVG PAY	53,539	-	-	-	-	-	87,233	97,670	104,216	-	90,809
55-59 NO	-	-	-	-	-	-	-	2	-	-	2
TOT PAY	-	-	-	-	-	-	-	181,386	-	-	181,386
AVG PAY	-	-	-	-	-	-	-	90,693	-	-	90,693
60-64 NO	-	-	-	-	-	-	-	-	-	-	-
TOT PAY	-	-	-	-	-	-	-	-	-	-	-
AVG PAY	-	-	-	-	-	-	-	-	-	-	-
65 & Up NO	-	-	-	-	-	-	-	-	-	-	-
TOT PAY	-	-	-	-	-	-	-	-	-	-	-
AVG PAY	-	-	-	-	-	-	-	-	-	-	-
TOT NO	14	20	17	5	6	15	26	31	5	-	139
TOT AMT	749,546	1,075,554	983,380	306,640	377,128	1,055,485	2,412,261	3,067,417	537,980	-	10,565,391
AVG AMT	53,539	53,778	57,846	61,328	62,855	70,366	92,779	98,949	107,596	-	76,010

INACTIVE MEMBERS AS OF OCTOBER 1, 2018

	Terminated Vested		Disabled		Retired		Beneficiaries		Grand Total	
		Total		Total		Total		Total		Total
Age	Number	Benefits	Number	Benefits	Number	Benefits	Number	Benefits	Number	Benefits
Under 20	0	-	0	-	0	-	2	7,884	2	7,884
20 - 24	0	-	0	-	0	-	0	-	0	-
25 - 29	0	-	0	-	0	-	0	-	0	-
30 - 34	0	-	0	-	0	-	1	5,337	1	5,337
35 - 39	0	-	0	-	0	-	0	-	0	-
40 - 44	0	-	0	-	0	-	1	17,081	1	17,081
45 - 49	0	-	0	-	7	524,285	0	-	7	524,285
50 - 54	0	-	0	-	28	2,040,267	0	-	28	2,040,267
55 - 59	0	-	1	39,220	30	2,149,544	0	-	31	2,188,764
60 - 64	0	-	2	72,264	19	1,334,206	0	-	21	1,406,470
65 - 69	0	-	1	25,040	15	967,046	1	35,160	17	1,027,246
70 - 74	0	-	0	-	12	607,324	3	49,291	15	656,615
75 - 79	0	-	0	-	6	218,282	2	39,057	8	257,339
80 - 84	0	-	0	-	0	-	0	-	0	-
85 - 89	0	-	0	-	1	11,153	1	12,157	2	23,310
90 - 94	0	-	0	-	0	-	1	12,245	1	12,245
95 - 99	0	-	0	-	0	-	0	-	0	-
100 & Over	0	-	0	-	0	-	0	-	0	-
Total	0	-	4	136,524	118	7,852,107	12	178,212	134	8,166,843
Average Age		N/A		61		61		59		60

SECTION F

SUMMARY OF PLAN PROVISIONS

SUMMARY OF PLAN PROVISIONS

A. Ordinances

The Plan was established under the Code of Ordinances for the City of Delray Beach, Florida, Chapter 33, and was most recently amended under Ordinance No. 17-16 passed and adopted on its second reading on October 4, 2016. The Plan is also governed by certain provisions of Chapter 175, Florida Statutes, Part VII, Chapter 112, Florida Statutes and the Internal Revenue Code.

B. Effective Date

April 22, 1974

C. Plan Year

October 1 through September 30

D. Type of Plan

Qualified, governmental defined benefit retirement plan; for GASB purposes it is a single employer plan.

E. Eligibility Requirements

All full-time firefighters

F. Credited Service

Years and completed months of full-time service with the City during which time prescribed employee contributions are made. No service is credited for any periods of employment for which the member received a refund of their contributions.

G. Compensation

Compensation is the total base wages, including state education compensation and fire career education compensation, but excluding overtime, bonuses and any other payments.

H. Final Average Compensation (FAC)

For Members hired prior to October 4, 2016:

The average of Compensation over the highest 3 years of Credited Service.

For Members hired on or after October 4, 2016:

The average of Compensation over the highest 5 years out of the last 10 years of Credited Service.

I. Normal Retirement

<u>For Members hired prior to October 4, 2016 with 20 or more years of service as of that date:</u>

Eligibility: A member may retire on the first day of the month coincident with or next following the earlier of:

(1) age 55 and 10 years of Credited Service, or
(2) 20 years of Credited Service regardless of age.

Benefit: 3.00% (or 3.50% of FAC for those electing the enhanced multiplier) for each year of Credited Service; subject to a maximum benefit equal to 87.50% of FAC.

Normal Form of Benefit: 10 Years Certain and Life thereafter. For married participants, a monthly income payable for life of member; upon death of member, 100% of member's benefit payable to spouse for one year and 60% thereafter until death or remarriage of spouse.

COLA: Cost of living increases of 1.00% apply for those retiring after October 1, 1993, commencing on the 25th anniversary of the retiree's hire date. Additional increases are available when the revenue under Chapter 175 exceeds $1,206,994.

<u>For Members hired prior to October 4, 2016 with less than 20 years of service as of that date:</u>

Eligibility: A member may retire on the first day of the month coincident with or next following the earlier of:

(1) age 55 and 10 years of Credited Service, or
(2) 20 years of Credited Service regardless of age.

Benefit: **For those retiring with more than 20 years of service:** 3.00% of FAC (or 3.50% of FAC for those electing the enhanced multiplier) for each year of Credited Service prior to October 4, 2016. For Credited Service earned after October 4, 2016, 3.00% of FAC for each year of Credited Service after October 4, 2016. Members hired after April 9, 2013 are not eligible for the enhanced multiplier.

For those retiring with less than 20 years of service: 2.50% of FAC for each year of Credited Service prior to October 4, 2016. For Credited Service earned after October 4, 2016, 3.00% of FAC for each year of Credited Service after October 4, 2016.

The maximum annual starting benefit is $100,000, but not less than 2.00% of average monthly earnings for each year of continuous service. The maximum benefit amount will be increased annually by 2% each October 1st beginning October 1, 2016.

Normal Form of Benefit: 10 Years Certain and Life thereafter. For married participants, a monthly income payable for life of member; upon death of member, 100% of member's benefit payable to spouse for one year and 60% thereafter until death or remarriage of spouse. For the benefit based on service accrued after October 4, 2016, the normal form is a 10-Year Certain and Life annuity.

COLA: Cost of living increases of 1.00% apply for those retiring after October 1, 1993, commencing on the 25th anniversary of the retiree's hire date. Additional increases are available when the revenue under Chapter 175 exceeds $1,206,994. For benefits accrued after October 4, 2016, the adjustment will begin one year after separating from employment.

For Members hired after October 4, 2016:

Eligibility: A member may retire on the first day of the month coincident with or next following the earlier of:

(1) age 55 and 10 years of Credited Service, or
(2) 25 years of Credited Service regardless of age.

Benefit: 2.75% of FAC for each year of Credited Service. The maximum annual starting benefit is $100,000, but not less than 2.00% of average monthly earnings for each year of continuous service. The maximum benefit amount will be increased annually by 2% each October 1st beginning October 1, 2016.

Normal Form of Benefit: 10 Years Certain and Life thereafter.

COLA: Cost of living increases of 1.00% apply for those retiring after October 1, 1993, commencing on the 25th anniversary of the retiree's hire date. Additional increases are available when the revenue under Chapter 175 exceeds $1,206,994. For benefits accrued after October 4, 2016, the adjustment will begin one year after separating from employment.

J. Early Retirement

For Members hired prior to October 4, 2016:

Eligibility: A member may elect to retire earlier than the Normal Retirement Eligibility upon attainment of age 50 and 10 years of Credited Service.

Benefit: The Normal Retirement Benefit is reduced by 3.0% for each year by which the Early Retirement date precedes the Normal Retirement date.

Normal Form of Benefit: 10 Years Certain and Life thereafter. For married participants, a monthly income payable for life of member; upon death of member, 100% of member's benefit payable to spouse for one year and 60% thereafter until death or remarriage of spouse. For the benefit based on service accrued after October 4, 2016, the normal form is a 10-Year Certain and Life annuity.

COLA: Cost of living increases of 1.00% apply for those retiring after October 1, 1993, commencing on the 25th anniversary of the retiree's hire date. Additional increases are available when the revenue under Chapter 175 exceeds $1,206,994. For benefits accrued after October 4, 2016, the adjustment will begin one year after separating from employment.

For Members hired on or after October 4, 2016:

Early retirement is not available.

K. Delayed Retirement

Same as Normal Retirement taking into account compensation earned and service credited until the date of actual retirement.

L. Service Connected Disability

Eligibility: Any member who becomes totally and permanently disabled as a result of an act occurring in the performance of service for the City is immediately eligible for a disability benefit.

Benefit: The disability benefit is equal to the accrued benefit, but not less than 60% of FAC.

Normal Form of Benefit: Payable until death or recovery from disability or until the member reaches Early or Normal Retirement Age and elects to receive Early or Normal Retirement Benefits in lieu of disability benefits. Other options are also available.

COLA: None

M. Non-Service Connected Disability

Eligibility: Any member with at least 10 years of Credited Service who becomes totally and permanently disabled is immediately eligible for a disability benefit.

Benefit: The accrued Normal Retirement Benefit with a minimum equal to 2.00% of FAC for each year of Credited Service, with a minimum of 25% of FAC.

Normal Form of Benefit: Payable until death or recovery from disability or until the member reaches Early or Normal Retirement Age and elects to receive Early or Normal Retirement Benefits in lieu of disability benefits. Other options are also available.

COLA: None

N. Death in the Line of Duty

Eligibility: Any member whose death is determined to be the result of a service incurred injury is eligible for survivor benefits regardless of Credited Service.

Benefit: Spouse will receive 50% of FAC, plus 5% to each unmarried child under 18 (age 22 if full-time student), subject to an overall maximum of 60% of FAC.

Normal Form of Benefit: Payable for the life of spouse, or until age 18 (age 22 if full-time student) for children.

COLA: Cost of living increases of 1.00% apply for those retiring after October 1, 1993, commencing on the 25th anniversary of the retiree's hire date. Additional increases are available when the revenue under Chapter 175 exceeds $1,206,994. For benefits accrued after October 4, 2016, the adjustment will begin one year after separating from employment

O. Other Pre-Retirement Death

Eligibility: All members are eligible for survivor benefits.

Benefit: $2,500 lump sum is payable if the member has less than one year of service. A $5,000 lump sum is payable if the member has more than one year of service but less than five.

If the member has five or more years of service, a $5,000 lump sum is payable, plus a month benefit of 65% of the accrued benefit to the spouse (as of the date of death), subject to a minimum of 20% of FAC. In addition, 5% to each unmarried child under 18 (age 22 if full-time student). The total monthly benefit is subject to a maximum of 50% of FAC and 35% after death or remarriage of spouse.

Normal Form
of Benefit: Payable for the life of spouse, or until age 18 (age 22 if full-time student) for children.

COLA: Cost of living increases of 1.00% apply for those retiring after October 1, 1993, commencing on the 25th anniversary of the retiree's hire date. Additional increases are available when the revenue under Chapter 175 exceeds $1,206,994. For benefits accrued after October 4, 2016, the adjustment will begin one year after separating from employment

P. Post Retirement Death

Benefit determined by the form of benefit elected upon retirement.

Q. Optional Forms

In lieu of electing the Normal Form of benefit, the optional forms of benefits available to all retirees are the life annuity and the 50%, 66 2/3%, 75% and 100% Joint and Survivor options with or without the pop-up feature.

R. Vested Termination

Eligibility: A member has earned a non-forfeitable right to Plan benefits after the completion of 10 years of Credited Service.

Benefit: The benefit is the member's accrued Normal Retirement Benefit. Benefit begins on the date that would have been the member's Normal Retirement date based on Credited Service at termination.

Normal Form
of Benefit: 10 Years Certain and Life thereafter. For married participants, a monthly income payable for life of member; upon death of member, 100% of member's benefit payable to spouse for one year and 60% thereafter until death or remarriage of spouse. For the benefit based on service accrued after October 4, 2016, the normal form is a 10-Year Certain and Life annuity.

COLA: Cost of living increases of 1.00% apply for those retiring after October 1, 1993, commencing on the 25th anniversary of the retiree's hire date. Additional increases are available when the revenue under Chapter 175 exceeds $1,206,994. For benefits accrued after October 4, 2016, the adjustment will begin one year after separating from employment.

S. Refunds

Eligibility: All members terminating employment with less than 10 years of Credited Service are eligible.

Benefit: Refund of the member's contributions with simple interest of 3%.

T. Member Contributions

9.00% of Compensation until the member has earned the maximum normal retirement benefit.

U. State Contributions

Chapter 175 Premium Tax Refunds.

V. Employer Contributions

Any additional amount determined by the actuary needed to fund the plan properly according to State laws.

W. Cost of Living Increases

Cost of living increases of 1.00% apply for those retiring after October 1, 1993, commencing on the 25th anniversary of the retiree's hire date. Additional increases are available when the revenue under Chapter 175 exceeds $1,206,994. For benefits accrued after October 4, 2016, the adjustment will begin one year after separating from employment.

X. Deferred Retirement Option Plan

Eligibility: Plan members who have met the eligibility requirements for Normal Retirement.

Benefit: The member's Credited Service and FAC are frozen upon entry into the DROP. The monthly retirement benefit as described under Normal Retirement is calculated based upon the frozen Credited Service and FAC.

Maximum DROP Period: 60 months

Interest Credited: For members who enter the DROP, the member's DROP account is credited at the net rate of return on retirement fund assets during the period the employee participates in the DROP.

Normal Form of Benefit: Lump Sum, Direct Rollover, or Partial Lump Sum with a Direct Rollover of remaining balance.

Y. Other Ancillary Benefits

There are no ancillary retirement type benefits not required by statutes but which might be deemed a City of Delray Beach Firefighters' Retirement System liability if continued beyond the availability of funding by the current funding source.

Z. Changes from Previous Valuation

There were no changes from the previous valuation.