

CITY OF TITUSVILLE
POLICE OFFICERS' AND FIREFIGHTERS' PENSION PLAN
ACTUARIAL VALUATION
AS OF OCTOBER 1, 2019
CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING SEPTEMBER 30, 2021
GASB 67/68 DISCLOSURE INFORMATION
AS OF SEPTEMBER 30, 2019



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

January 31, 2020

Board of Trustees
City of Titusville
Firefighters and Police Officers' Pension Board

Re: City of Titusville Police Officers' and Firefighters' Pension Plan

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Titusville Police Officers' and Firefighters' Pension Plan. Included are the related results for GASB Statements No. 67 and No. 68. The funding valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to develop the appropriate funding requirements for the applicable plan year. The calculation of the liability for GASB results was performed for the purpose of satisfying the requirements of GASB Statements No. 67 and No. 68. Use of the results for other purposes may not be applicable and may produce significantly different results.

The valuations have been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflect laws and regulations issued to date pursuant to the provisions of Chapters 112, 175, and 185, Florida Statutes, as well as applicable federal laws and regulations. In our opinion, the assumptions used in the valuations, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuations, we did not perform an analysis of the potential range of such future measurements.

In conducting the valuations, we have relied on personnel, plan design, and asset information supplied by the City of Titusville, financial reports prepared by the custodian bank, and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

The total pension liability, net pension liability, and certain sensitivity information shown in this report are based on an actuarial valuation performed as of October 1, 2018. The total pension liability was rolled-forward from the valuation date to the plan's fiscal year ending September 30, 2019 using generally accepted actuarial principles. It is our opinion that the assumptions used for this purpose are internally consistent, reasonable, and comply with the requirements under GASB No. 67 and No. 68.

The undersigned are familiar with the immediate and long-term aspects of pension valuations, and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the actuarial opinions.

To our knowledge, no associate of Foster & Foster, Inc. working on valuations of the program has any direct financial interest or indirect material interest in the City of Titusville, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Police Officers' and Firefighters' Pension Plan. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact us at 239-433-5500.

Respectfully submitted,

Foster & Foster, Inc.

By: 

Douglas H. Lozen, EA, MAAA
Enrolled Actuary #17-7778

By: 

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Enclosures

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SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Titusville Police Officers' and Firefighters' Pension Plan, performed as of October 1, 2019, has been completed and the results are presented in this Report. The contribution amounts set forth herein are applicable to the plan/fiscal year ending September 30, 2021.

The contribution requirements, compared with those set forth in the January 17, 2020 actuarial impact statement, are as follows:

Valuation Date	10/1/2019	10/1/2018
Applicable to Fiscal Year Ending	<u>9/30/2021</u>	<u>9/30/2020</u>
Minimum Required Contribution	\$2,075,846	\$2,574,924
Member Contributions (Est.)	530,837	510,697
City And State Required Contribution	1,545,009	2,064,227
State Contribution (Est.) ¹	376,982	376,982
City Required Contribution ²	\$1,168,027	\$1,687,245

¹ Reflects 50% of amount received in Calendar 2019. Pursuant to Ordinance 6-2017, the annual Chapter 175 and 185 Premium Tax Monies will be equally shared between the Membership Share Plan and City funding credit once the funded ratio (actuarial value of assets divided by the actuarial accrued liability) reaches or exceeds 90% as of the most recent actuarial valuation; this sharing will occur in the year following attainment of the 90% ratio. As of October 1, 2019, the funded ratio for this purpose is 91.8%. Accordingly, this sharing will first apply to State Contributions for fiscal year 2020.

² Please note that the City has access to a prepaid contribution of \$143,447.08 that is available to offset a portion of the above stated requirements for the fiscal year ending September 30, 2020.

As you can see, the Minimum Required Contribution shows a decrease when compared to the results determined in the January 17, 2020 actuarial impact statement. The decrease is attributable to net favorable experience and the expiration of a charge component of the Unfunded Actuarial Accrued Liability.

Plan experience was favorable overall on the basis of the plan's actuarial assumptions. The primary source of actuarial gain was an investment return of 9.53% (Actuarial Asset Basis) which exceeded the 7.75% assumption. This gain was offset in part by losses associated with inactive mortality experience and active mortality experience.

CHANGES SINCE PRIOR VALUATION

Plan Changes

Chapter 2019-21, Laws of Florida was signed into effect granting certain disability and pre-retirement death benefits to firefighters participating in an employer-sponsored retirement plan:

- 1.) Effective July 1, 2019, an additional presumption was added to the death in the line of duty section. “A firefighter shall be considered to have died in the line of duty if he or she dies as a result of cancer or circumstances that arise out of the treatment of cancer.”

- 2.) Effective July 1, 2019, an additional presumption was added to the disability in-line-of-duty presumption. “Diagnosis of cancer or the circumstances that arise out of the treatment of cancer. A firefighter shall be considered totally and permanently disabled in the line of duty if he or she meets the Plan’s definition of total and permanently disabled due to the diagnosis of cancer or circumstances that arise out of the treatment of cancer.

Please note that the benefit changes only relate to the disability and death benefits for the Pension Fund and do not provide for other additional benefits that are provided for in Florida Statutes Section 112.1816.

The plan was also amended with respect to in-service distributions and to establish a “DROP II” program. These additional changes did not result in a change to the plan’s funding requirements.

Actuarial Assumption/Method Changes

There have been no changes of actuarial assumptions or methods since the prior valuation other than an increase in the expected percentage of disabilities and pre-retirement deaths that are in line-of-duty, as a result of the plan change described above.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	<u>10/1/2019</u>	<u>10/1/2018</u>
A. Participant Data		
Actives	138	136
Service Retirees	99	93
DROP Retirees	0	0
Beneficiaries	22	21
Disability Retirees	9	9
Terminated Vested	<u>45</u>	<u>51</u>
 Total	 313	 310
 Total Annual Payroll	 \$7,519,914	 \$7,243,616
Payroll Under Assumed Ret. Age	7,519,914	7,243,616
 Annual Rate of Payments to:		
Service Retirees	4,297,212	4,118,146
DROP Retirees	0	0
Beneficiaries	504,862	468,242
Disability Retirees	181,091	181,091
Terminated Vested	448,860	547,779
 B. Assets		
Actuarial Value (AVA) ¹	63,045,264	59,144,583
Market Value (MVA) ¹	62,470,577	62,247,918
 C. Liabilities		
Present Value of Benefits		
Actives		
Retirement Benefits	19,260,865	17,728,727
Disability Benefits	1,153,170	1,119,192
Death Benefits	467,449	464,476
Vested Benefits	2,248,025	2,383,457
Refund of Contributions	343,169	326,963
Service Retirees	41,020,469	40,105,641
DROP Retirees ¹	0	0
Beneficiaries	5,198,042	4,858,805
Disability Retirees	1,980,222	1,997,168
Terminated Vested	3,300,659	3,742,579
Share Plan Balances ¹	<u>0</u>	<u>0</u>
 Total	 74,972,070	 72,727,008

C. Liabilities - (Continued)	<u>10/1/2019</u>	<u>10/1/2018</u>
Present Value of Future Salaries	57,500,034	56,987,181
Present Value of Future Member Contributions	3,737,502	3,704,167
Normal Cost (Retirement)	569,017	560,279
Normal Cost (Disability)	83,385	82,694
Normal Cost (Death)	40,228	40,085
Normal Cost (Vesting)	175,092	176,137
Normal Cost (Refunds)	<u>59,122</u>	<u>52,991</u>
Total Normal Cost	926,844	912,186
Present Value of Future Normal Costs	6,276,743	6,347,433
Accrued Liability (Retirement)	15,181,154	13,622,808
Accrued Liability (Disability)	536,154	503,518
Accrued Liability (Death)	177,366	171,650
Accrued Liability (Vesting)	1,226,308	1,302,980
Accrued Liability (Refunds)	74,953	74,426
Accrued Liability (Inactives) ¹	51,499,392	50,704,193
Share Plan Balances ¹	<u>0</u>	<u>0</u>
Total Actuarial Accrued Liability (EAN AL)	68,695,327	66,379,575
Unfunded Actuarial Accrued Liability (UAAL)	5,650,063	7,234,992
Funded Ratio (AVA / EAN AL)	91.8%	89.1%

D. Actuarial Present Value of Accrued Benefits	<u>10/1/2019</u>	<u>10/1/2018</u>
Vested Accrued Benefits		
Inactives + Share Plan Balances ¹	51,499,392	50,704,193
Actives	6,743,235	6,181,198
Member Contributions	<u>4,266,690</u>	<u>4,060,362</u>
Total	62,509,317	60,945,753
Non-vested Accrued Benefits	<u>3,168,952</u>	<u>2,770,906</u>
Total Present Value Accrued Benefits (PVAB)	65,678,269	63,716,659
Funded Ratio (MVA / PVAB)	95.1%	97.7%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:		
Plan Amendments	0	
Assumption Changes	0	
Plan Experience	1,584,888	
Benefits Paid	(4,391,162)	
Interest	4,767,884	
Other	<u>0</u>	
Total	1,961,610	

Valuation Date	10/1/2019	10/1/2018
Applicable to Fiscal Year Ending	<u>9/30/2021</u>	<u>9/30/2020</u>

E. Pension Cost

Normal Cost ²	\$1,006,565	\$989,414
Administrative Expenses ²	108,496	94,387
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 29 years (as of 10/1/2019) ²	960,785	1,491,123
Minimum Required Contribution	2,075,846	2,574,924
Expected Member Contributions ²	530,837	510,697
Expected City and State Contribution	1,545,009	2,064,227

F. Past Contributions

Plan Years Ending:	<u>9/30/2019</u>
City and State Requirement	2,369,493
Actual Contributions Made:	
Members (excluding buyback)	478,277
City	1,615,530
State	<u>753,963</u>
Total	2,847,770

G. Net Actuarial (Gain)/Loss (270,508)

¹ The asset values and liabilities include accumulated DROP and Share Plan Balances as of 9/30/2019 and 9/30/2018.

² Contributions developed as of 10/1/2019 displayed above have been adjusted to account for assumed salary increase and interest components.

H. Schedule Illustrating the Amortization of the Total Unfunded Actuarial Accrued Liability as of:

<u>Year</u>	<u>Projected Unfunded Actuarial Accrued Liability</u>
2019	5,650,063
2020	5,134,689
2021	4,953,133
2028	752,887
2048	0

I. (i) 5 Year Comparison of Actual and Assumed Salary Increases

	<u>Actual</u>	<u>Assumed</u>
Year Ended 9/30/2019	4.08%	4.03%
Year Ended 9/30/2018	4.63%	6.00%
Year Ended 9/30/2017	3.44%	6.00%
Year Ended 9/30/2016	4.25%	6.00%
Year Ended 9/30/2015	8.41%	6.00%

(ii) 5 Year Comparison of Investment Return on Market Value and Actuarial Value

	<u>Market Value</u>	<u>Actuarial Value</u>	<u>Assumed</u>
Year Ended 9/30/2019	3.06%	9.53%	7.75%
Year Ended 9/30/2018	9.55%	8.08%	8.00%
Year Ended 9/30/2017	14.17%	8.49%	8.00%
Year Ended 9/30/2016	11.65%	8.55%	8.00%
Year Ended 9/30/2015	-2.27%	10.50%	8.00%

(iii) Average Annual Payroll Growth

(a) Payroll as of:	10/1/2019	\$7,519,914
	10/1/2009	6,496,136
(b) Total Increase		15.76%
(c) Number of Years		10.00
(d) Average Annual Rate		1.47%

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.



Douglas H. Lozen, EA, MAAA
Enrolled Actuary #17-7778

Please let us know when the report is approved by the Board and unless otherwise directed we will provide copies of the report to the following offices to comply with Chapter 112, Florida Statutes:

Mr. Keith Brinkman
Bureau of Local
Retirement Systems
Post Office Box 9000
Tallahassee, FL 32315-9000

Mr. Steve Bardin
Municipal Police and Fire
Pension Trust Funds
Division of Retirement
Post Office Box 3010
Tallahassee, FL 32315-3010

RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES

(1) Unfunded Actuarial Accrued Liability as of October 1, 2018	\$7,234,992
(2) Sponsor Normal Cost developed as of October 1, 2018	441,351
(3) Expected administrative expenses for the year ended September 30, 2019	87,020
(4) Expected interest on (1), (2) and (3)	598,289
(5) Sponsor contributions to the System during the year ended September 30, 2019	2,369,493
(6) Expected interest on (5)	71,588
(7) Expected Unfunded Actuarial Accrued Liability as of September 30, 2019 (1)+(2)+(3)+(4)-(5)-(6)	5,920,571
(8) Change to UAAL due to Assumption Change	0
(9) Change to UAAL due to Actuarial (Gain)/Loss	(270,508)
(10) Unfunded Actuarial Accrued Liability as of October 1, 2019	5,650,063

<u>Type of Base</u>	<u>Date Established</u>	<u>Years Remaining</u>	<u>10/1/2019 Amount</u>	<u>Amortization Amount</u>
	10/1/1990	1	31,137	31,137
	10/1/1993	4	108,737	30,299
	10/1/1995	6	757,669	150,955
	10/1/2001	12	186,075	22,619
Method Change	10/1/2002	13	1,920,428	222,409
Prior Losses	10/1/2002	9	1,615,409	237,506
Benefit Change	10/1/2002	13	112,710	13,053
Actuarial Loss	10/1/2003	9	1,110,359	163,251
Actuarial Loss	10/1/2004	9	1,350,301	198,528
Actuarial Loss	10/1/2005	9	801,958	117,908
Benefit Change	10/1/2005	16	26,426	2,727
Actuarial Loss	10/1/2006	9	1,407,705	206,968
Benefit Change	10/1/2006	17	1,906,608	190,763
Actuarial Loss	10/1/2007	9	11,871	1,745
Method Change	10/1/2008	9	(377,612)	(55,518)
Assum. Change	10/1/2009	10	(1,806,605)	(247,062)
Actuarial Loss	10/1/2010	1	315,738	315,738
Assum. Change	10/1/2010	11	624,529	80,208
Actuarial Loss	10/1/2011	2	130,121	67,488

Type of <u>Base</u>	Date <u>Established</u>	Years <u>Remaining</u>	10/1/2019 <u>Amount</u>	Amortization <u>Amount</u>
Benefit Change	10/1/2011	22	(3,785,937)	(337,666)
Actuarial Gain	10/1/2012	3	(292,147)	(104,735)
Actuarial Gain	10/1/2013	4	(574,161)	(159,988)
Actuarial Gain	10/1/2014	5	(1,317,585)	(304,247)
State Res. Alloc.	10/1/2015	26	(181,903)	(15,277)
Benefit Change	10/1/2015	26	(5,530)	(464)
Actuarial Gain	10/1/2015	6	(598,527)	(119,249)
Assum. Change	10/1/2016	17	1,609,467	161,033
Actuarial Gain	10/1/2016	7	(144,357)	(25,513)
Actuarial Gain	10/1/2017	8	(320,701)	(51,302)
Actuarial Loss	10/1/2018	9	94,469	13,889
Assum. Change	10/1/2018	19	1,220,027	115,789
Benefit Change	10/1/2018	29	(16,108)	(1,309)
Actuarial Gain	10/1/2019	10	<u>(270,508)</u>	<u>(36,993)</u>
			5,650,063	884,690

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of October 1, 2018	\$7,234,992
(2) Expected UAAL as of October 1, 2019	5,920,571
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	(1,037,902)
Salary Increases	3,239
Active Decrements	229,897
Inactive Mortality	391,381
Other	<u>142,877</u>
Increase in UAAL due to (Gain)/Loss	(270,508)
Assumption Changes	<u>0</u>
(4) Actual UAAL as of October 1, 2019	\$5,650,063

ACTUARIAL ASSUMPTIONS AND METHODS

Mortality Rate

Healthy Active Lives:

Female: RP2000 Generational, 100% Combined Healthy White Collar, Scale BB

Male: RP2000 Generational, 10% Combined Healthy White Collar / 90% Combined Healthy Blue Collar, Scale BB

Healthy Inactive Lives:

Female: RP2000 Generational, 100% Annuitant White Collar, Scale BB

Male: RP2000 Generational, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB

Disabled Lives:

Female: 60% RP2000 Disabled Female set forward two years / 40% Annuitant White Collar with no setback, no projection scale

Male: 60% RP2000 Disabled Male setback four years / 40% Annuitant White Collar with no setback, no projection scale

The above assumption rates were mandated by Chapter 2015-157, Laws of Florida. This law mandates the use of the assumptions used in either of the two most recent valuations of the Florida Retirement System (FRS). The above rates are those outlined in Milliman's July 1, 2018 FRS valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

90% of active deaths are assumed to be service-incurred.

Interest Rate

7.75% per year compounded annually, net of investment related expenses. This is supported by the target asset allocation of the trust and the expected long-term return by asset class.

Salary Increases

See table later in this section. This assumption was adopted as the result of the August 20, 2018 experience study. Assumptions for final salary loads are as follows:

For Members Eligible for Retirement on June 1, 2013:

Projected salary at retirement is increased 25% to account for non-regular compensation.

For Members not eligible for Normal Retirement on June 1, 2013 with at least 10 years of service as of that date:

The projected frozen benefit as of June 1, 2013 includes a 25% load for the final year included in the averaging period.

For Members with less than 10 years of service (and not eligible for Normal Retirement) as of June 1, 2013:

No final salary load is assumed.

Payroll Growth

0.00% for purposes of amortizing the Unfunded Actuarial Accrued Liability. Level dollar amortization of the UAAL was adopted as a result of the August 20, 2018 experience study.

Administrative Expenses

\$99,903 annually, based on the average of actual expenses incurred in the prior two fiscal years. Previously, the actual expense in the prior fiscal year was used. Using a two-year average results in a less volatile estimate than the prior method.

Amortization Method

New UAAL amortization bases are established according to the following amortization periods:

Experience: 10 Years.

Assumption/Method Changes: 20 Years.

Benefit Changes: 30 Years.

Retirement (Normal and Early)

See tables later in this section. This assumption was adopted as the result of the August 20, 2018 experience study.

Termination Rates

See table later in this section. This assumption was adopted as the result of the August 20, 2018 experience study.

Disability Rates

See table later in this section. This assumption was adopted as the result of the August 20, 2018 experience study. 90% of Disability retirements are assumed to be service-related.

Asset Smoothing Methodology

The Actuarial Value of Assets is brought forward using the historical four-year geometric average of Market Value Returns (net-of-fees). Over time, this may result in an immaterial bias that is above or below the Market Value of Assets.

Funding Method

Entry Age Normal Actuarial Cost Method. The following loads are applied for determination of the Sponsor funding requirement:

Interest – A half year, based on the current 7.75% assumption.

Salary – A full year, based on the current 4.55% assumption.

Assumption Tables

<u>% Terminating During the Year</u>		<u>% Becoming Disabled During the Year</u>		<u>Salary Scale</u>	
<u>Service</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Service</u>	<u>Rate</u>
0-1	14%	20	0.09%	0	7.00%
2-3	11%	25	0.10%	1-3	4.50%
4-9	6%	30	0.12%	4+	4.00%
10+	4%	35	0.16%		
		40	0.21%		
		45	0.38%		
		50	0.72%		
		55	1.09%		
		60	1.36%		

<u>% Retiring During the Year (Less Than 25 Years of Service)</u>		<u>% Retiring During the Year (>= 25 Years of Service)</u>	
<u>Age</u>	<u>Rate</u>	<u>Service</u>	<u>Rate</u>
50-54	15%	25-28	50%
55-58	50%	29+	100%
59+	100%		

GLOSSARY

Total Annual Payroll is the projected annual rate of pay as of the valuation date for all covered Members.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current Members, Retirees, Beneficiaries, Disability Retirees and Vested Terminations.

Total Required Contribution is equal to the Normal Cost plus an amount sufficient to amortize the Unfunded Accrued Liability over no more than 30 years. The required amount is adjusted for interest according to the timing of contributions during the year.

Entry Age Normal Cost Method - Under this method, the normal cost is the sum of the individual normal costs for all active participants. For an active participant, the normal cost is the participant's normal cost accrual rate, multiplied by the participant's current compensation.

- (a) The normal cost accrual rate equals
 - (i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by
 - (ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age.
- (b) In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.
- (c) The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's accrued liability equals the present value, at the beneficiary's attained age, of future benefits. The unfunded accrued liability equals the total accrued liability less the actuarial value of assets.
- (d) Under this method, the entry age used for each active participant is the participant's age at the time he or she would have commenced participation if the plan had always been in existence under current terms, or the age as of which he or she first earns service credits for purposes of benefit accrual under the current terms of the plan.

DISCUSSION OF RISK

ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined using various actuarial assumptions. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. It is possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current-year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss is amortized over a period of time determined by the plan's amortization method. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's contribution requirements associated with plan experience. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization payment could potentially grow to an unmanageable level.

- Investment Return: When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized. Further, it is unlikely that the plan will experience a scenario that matches the assumed return in each year as capital markets can be volatile from year to year. Therefore, contribution amounts can vary in the future.
- Salary Increases: When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.
- Demographic Assumptions: Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could have occurred.

Impact of Plan Maturity on Risk

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared amongst active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on risk tolerance and the overall risk characteristics of the plan. For example, closed plans with a large amount of retired liability do not have as long of a time horizon to recover from losses (such as losses on investments due to lower than expected investment returns) as plans where the majority of the liability is attributable to active members. For this reason, less tolerance for investment risk may be warranted for highly mature closed plans with a substantial inactive liability. Similarly, mature closed plans paying substantial retirement benefits resulting in a small positive or net negative cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the plan, we have provided some relevant metrics in the table following titled “Plan Maturity Measures and Other Risk Metrics”. Highlights of this information are discussed below:

- The Support Ratio, determined as the ratio of active to inactive members, has stayed about the same from October 1, 2016 to October 1, 2019, indicating that the plan's maturity level has not significantly changed during the period.
- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the liability associated with members who are no longer employed but are due a benefit from the plan, to the Total Accrued Liability, is 75.0%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors may result in larger increases in contribution requirements than would be needed for a less mature plan. Please note Chapter 112, Florida Statutes, requires that the plan sponsor contributes the minimum required contribution; thus, there is minimal solvency risk to the plan.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has increased from 86.2% on October 1, 2016 to 91.8% on October 1, 2019. The increase is due to paying off of the plan's unfunded liability during the period, offset by assumption changes implemented during the period.
- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (contributions minus benefit payments and administrative expenses) to the Market Value of Assets, stayed approximately the same from October 1, 2016 to October 1, 2019. The current Net Cash Flow Ratio of -2.7% indicates that contributions are not currently covering the plan's benefit payments and administrative expenses.

It is important to note that the actuary has identified the risks in this section as the most significant risks based on the characteristics of the plan and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modeling, as well as the identification of additional risks, can be provided at the request of the audience addressed on page 2 of this report.

PLAN MATURITY MEASURES AND OTHER RISK METRICS

	<u>10/1/2016</u>	<u>10/1/2017</u>	<u>10/1/2018</u>	<u>10/1/2019</u>
<u>Support Ratio</u>				
Total Actives	130	133	136	138
Total Inactives ¹	157	155	157	162
Actives / Inactives ¹	82.8%	85.8%	86.6%	85.2%
<u>Asset Volatility Ratio</u>				
Market Value of Assets (MVA)	53,173,633	58,443,173	62,247,918	62,470,577
Total Annual Payroll	6,748,203	7,040,280	7,243,616	7,519,914
MVA / Total Annual Payroll	788.0%	830.1%	859.3%	830.7%
<u>Accrued Liability (AL) Ratio</u>				
Inactive Accrued Liability	49,419,563	48,743,788	50,704,193	51,499,392
Total Accrued Liability (EAN)	62,646,927	63,455,365	66,379,575	68,695,327
Inactive AL / Total AL	78.9%	76.8%	76.4%	75.0%
<u>Funded Ratio</u>				
Actuarial Value of Assets (AVA)	53,979,489	56,343,242	59,144,583	63,045,264
Total Accrued Liability (EAN)	62,646,927	63,455,365	66,379,575	68,695,327
AVA / Total Accrued Liability (EAN)	86.2%	88.8%	89.1%	91.8%
<u>Net Cash Flow Ratio</u>				
Net Cash Flow ²	(1,012,599)	(2,128,252)	(1,685,505)	(1,656,178)
Market Value of Assets (MVA)	53,173,633	58,443,173	62,247,918	62,470,577
Ratio	-1.9%	-3.6%	-2.7%	-2.7%

¹ Excludes terminated participants awaiting a refund of member contributions.

² Determined as total contributions minus benefit payments and administrative expenses.

PARTIAL HISTORY OF PREMIUM TAX REFUNDS

<u>Received During Fiscal Year</u>	<u>Amount</u>	<u>Increase from Previous Year</u>
1998	268,069.08	_____%
1999	292,120.75	9.0%
2000	284,295.61	-2.7%
2001	303,087.86	6.6%
2002	341,514.06	12.7%
2003	373,360.33	9.3%
2004	428,469.92	14.8%
2005	449,292.46	4.9%
2006	464,257.04	3.3%
2007	512,547.55	10.4%
2008	664,120.76	29.6%
2009	649,318.39	-2.2%
2010	578,165.27	-11.0%
2011	549,312.77	-5.0%
2012	598,656.96	9.0%
2013	671,213.47	12.1%
2014	724,287.49	7.9%
2015	670,200.87	-7.5%
2016	731,349.81	9.1%
2017	681,740.60	-6.8%
2018	724,199.93	6.2%
2019	753,963.14	4.1%

SPECIAL ACTUARIAL ACCOUNT ACTIVITY
10/1/2018 to 10/1/2019

Growth Assuming 7.75% Return

(1)	10/1/2018 Beginning Balance	62,274,741
	Contributions	2,847,770
	Investment Earnings	4,762,116
	Non-Investment Expenses	112,786
	Investment Expenses	229,944
	Distributions	4,391,162
(2)	09/30/2019 Ending Balance	65,150,735
(3)	09/30/2019 Actuarial Assets	63,045,264
(4)	Excess Earnings: (3) - (2)	(2,105,471)
(5)	09/30/2019 Actuarial Gain (Loss)	270,508
*	Share Account Allocation: Lesser of: [(4) or (5)] x 70%	(1,473,830)

Share Account Activity

10/1/2018	Account Balance	(68,229,503)
	Interest at 7.75%	(5,287,786)
10/1/2019	Addition	(1,473,830)
10/1/2019	Benefits "Purchase"	(17,340)
10/1/2019	Account Balance	(75,008,459)

10/1/2019 Adjusted Actuarial Assets

(6)	Actuarial Assets (3), above	63,045,264
(7)	10/1/2019 Account Balance	(75,008,459)
	Adjusted Actuarial Assets	63,045,264
	Lesser of: (6) or [(6) - (7)]	

* Per Ordinance No. 26-1999.

SPECIAL ACTUARIAL ACCOUNT

HISTORY OF BENEFIT "PURCHASES" AND
ACTUARIAL GAINS AND LOSSES

<u>Plan Year Ended</u>	<u>Benefit "Purchases"</u>		<u>Net Actuarial Gain (Loss)</u>
9/30/1991	106,565	(1)	407,179
9/30/1992	0		481,200
9/30/1993	0		(221,686)
9/30/1994	331,857	(2)	167,994
9/30/1995	251,762	(3)	(145,889)
9/30/1996	509,800	(4)	89,658
9/30/1997	0		678,279
9/30/1998	428,988	(5)	541,465
9/30/1999	716,239	(6)	967,544
9/30/2000	416,578	(7)	502,392
9/30/2001	0		(618,344)
9/30/2002	0		(2,039,277)
9/30/2003	0		(1,740,552)
9/30/2004	0		(1,869,013)
9/30/2005	0		(1,108,361)
9/30/2006	0		(2,471,326)
9/30/2007	0		(18,699)
9/30/2008	0		(1,581,383)
9/30/2009	0		(2,884,794)
9/30/2010	0		(2,634,658)
9/30/2011	0		(590,967)
9/30/2012	0		913,451
9/30/2013	0		1,427,266
9/30/2014	0		2,668,236
9/30/2015	(6,509)	(8)	990,972
9/30/2016	0		203,373
9/30/2017	0		407,936
9/30/2018	0		(108,319)
9/30/2019	(17,340)	(9)	270,508
Total	2,737,940		(7,315,815)

- (1) AIS dated 01/21/94
- (2) AIS dated 07/02/96
- (3) AIS dated 02/28/97
- (4) AIS dated 01/22/98
- (5) AIS dated 08/26/99

- (6) AIS dated 05/04/00
- (7) AIS dated 02/23/01
- (8) AIS dated 02/10/17
- (9) AIS dated 01/07/20

STATEMENT OF FIDUCIARY NET POSITION
SEPTEMBER 30, 2019

<u>ASSETS</u>	COST VALUE	MARKET VALUE
Cash and Cash Equivalents:		
Short Term Investments	514,830.00	514,830.00
Cash	1.47	1.47
Total Cash and Equivalents	514,831.47	514,831.47
Receivables:		
From Broker for Investments Sold	316,523.77	316,523.77
Investment Income	86,056.82	86,056.82
Total Receivable	402,580.59	402,580.59
Investments:		
Fixed Income	13,066,221.43	13,321,471.26
Equities	28,653,701.47	33,171,820.83
Pooled/Common/Commingled Funds:		
Equity	5,848,101.51	6,975,684.28
Real Estate	5,723,249.09	8,346,560.59
Total Investments	53,291,273.50	61,815,536.96
Total Assets	54,208,685.56	62,732,949.02
<u>LIABILITIES</u>		
Payables:		
Refunds of Member Contributions	28,473.84	28,473.84
Administrative Expenses	4,619.85	4,619.85
To Broker for Investments Purchased	85,441.19	85,441.19
Prepaid Member Contribution	390.00	390.00
Prepaid City Contribution	143,447.08	143,447.08
Total Liabilities	262,371.96	262,371.96
NET POSITION RESTRICTED FOR PENSIONS	53,946,313.60	62,470,577.06

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED SEPTEMBER 30, 2019
Market Value Basis

ADDITIONS

Contributions:		
Member		478,276.83
City		1,615,529.86
State		753,963.14
Total Contributions		2,847,769.83
Investment Income:		
Net Realized Gain (Loss)	634,641.05	
Unrealized Gain (Loss)	(1,340,146.22)	
Net Increase in Fair Value of Investments		(705,505.17)
Interest & Dividends		2,814,287.09
Less Investment Expense ¹		(229,943.92)
Net Investment Income		1,878,838.00
Total Additions		4,726,607.83

DEDUCTIONS

Distributions to Members:		
Benefit Payments		4,222,725.78
Lump Sum DROP Distributions		0.00
Lump Sum PLOP Distributions		28,705.12
Refunds of Member Contributions		139,730.88
Total Distributions		4,391,161.78
Administrative Expense		112,786.49
Total Deductions		4,503,948.27
Net Increase in Net Position		222,659.56

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year		62,247,917.50
End of the Year		62,470,577.06

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

ACTUARIAL ASSET VALUATION
SEPTEMBER 30, 2019

Actuarial Assets for funding purposes are developed by increasing the Actuarial Assets used in the most recent actuarial valuation of the Fund by the average annual market value rate of return (net of investment related expenses) for the past four years. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.

Details of the derivation are set forth as follows:

Plan Year End	Rate of Return ¹	
09/30/2016	11.65%	
09/30/2017	14.17%	
09/30/2018	9.55%	
09/30/2019	3.06%	
Annualized Rate of Return for prior four (4) years:		9.53%
(A) 10/01/2018 Actuarial Assets:		\$59,144,583.02
(I) Net Investment Income:		
1. Interest and Dividends	2,814,287.09	
2. Realized Gains (Losses)	634,641.05	
3. Unrealized Gains (Losses)	(1,340,146.22)	
4. Change in Actuarial Value	3,678,021.50	
5. Investment Related Expenses	(229,943.92)	
Total		5,556,859.50
(B) 10/01/2019 Actuarial Assets:		\$63,045,264.08
Actuarial Asset Rate of Return = 2I/(A+B-I):		9.53%
10/01/2019 Limited Actuarial Assets:		\$63,045,264.08
10/01/2019 Market Value of Assets:		\$62,470,577.06
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)		\$1,037,902.40

¹Market Value Basis, net of investment related expenses.

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
 SEPTEMBER 30, 2019
 Actuarial Asset Basis

REVENUES

Contributions:		
Member	478,276.83	
City	1,615,529.86	
State	753,963.14	
 Total Contributions		 2,847,769.83
Earnings from Investments:		
Interest & Dividends	2,814,287.09	
Net Realized Gain (Loss)	634,641.05	
Unrealized Gain (Loss)	(1,340,146.22)	
Change in Actuarial Value	3,678,021.50	
 Total Earnings and Investment Gains		 5,786,803.42

EXPENDITURES

Distributions to Members:		
Benefit Payments	4,222,725.78	
Lump Sum DROP Distributions	0.00	
Lump Sum PLOP Distributions	28,705.12	
Refunds of Member Contributions	139,730.88	
 Total Distributions		 4,391,161.78
Expenses:		
Investment related ¹	229,943.92	
Administrative	112,786.49	
 Total Expenses		 342,730.41
 Change in Net Assets for the Year		 3,900,681.06
 Net Assets Beginning of the Year		 59,144,583.02
 Net Assets End of the Year ²		 63,045,264.08

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

²Net Assets may be limited for actuarial consideration.

RECONCILIATION OF CITY'S SHORTFALL/(PREPAID) CONTRIBUTION
FOR THE FISCAL YEAR ENDED (FYE) SEPTEMBER 30, 2019

(1) Required City and State Contributions	\$2,369,493.00
(2) Less Allowable State Contribution	<u>(753,963.14)</u>
(3) Required City Contribution for Fiscal 2019	1,615,529.86
(4) Less 2018 Prepaid Contribution	(70,783.99)
(5) Less Actual City Contributions	<u>(1,688,192.95)</u>
(6) Equals City's Shortfall/(Prepaid) Contribution as of September 30, 2019	(\$143,447.08)

STATISTICAL DATA

	<u>10/1/2016</u>	<u>10/1/2017</u>	<u>10/1/2018</u>	<u>10/1/2019</u>
<u>Actives</u>				
Number	130	133	136	138
Average Current Age	35.8	36.1	36.5	36.6
Average Age at Employment	27.7	27.6	27.8	27.6
Average Past Service	8.1	8.5	8.7	9.0
Average Annual Salary	\$51,909	\$52,934	\$53,262	\$54,492
<u>Service Retirees</u>				
Number	97	95	93	99
Average Current Age	63.7	64.0	64.2	64.6
Average Annual Benefit	\$39,886	\$42,312	\$44,281	\$43,406
<u>DROP Retirees</u>				
Number	3	1	0	0
Average Current Age	51.7	50.9	N/A	N/A
Average Annual Benefit	\$62,114	\$50,730	N/A	N/A
<u>Beneficiaries</u>				
Number	13	17	21	22
Average Current Age	63.7	66.0	67.7	67.2
Average Annual Benefit	\$24,423	\$19,050	\$22,297	\$22,948
<u>Disability Retirees</u>				
Number	9	9	9	9
Average Current Age	54.8	55.8	56.8	57.8
Average Annual Benefit	\$20,121	\$20,121	\$20,121	\$20,121
<u>Terminated Vested</u>				
Number	36	42	51	45
Average Current Age ¹	42.5	44.5	45.2	45.0
Average Annual Benefit ²	\$13,218	\$14,651	\$16,111	\$14,027

¹ The Average Current Age excludes participants awaiting a refund of contributions.

² The Average Annual Benefit excludes participants awaiting a refund of contributions.

AGE AND SERVICE DISTRIBUTION

PAST SERVICE

AGE	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+	Total
15 - 19												0
20 - 24	7	4										11
25 - 29	3	4	4	1	2	7						21
30 - 34	4	2	1	2	4	13	4					30
35 - 39	2	1	2			9	8	4				26
40 - 44	1			2		5	6	5				19
45 - 49		2					7	5	10			24
50 - 54							2	3		1		6
55 - 59								1				1
60 - 64												0
65+												0
Total	17	13	7	5	6	34	27	18	10	1	0	138

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 10/1/2018	136
b. Terminations	
i. Vested (partial or full) with deferred annuity	(1)
ii. Vested in refund of member contributions only	(2)
iii. Refund of member contributions or full lump sum distribution received	(9)
c. Deaths	
i. Beneficiary receiving benefits	(1)
ii. No future benefits payable	0
d. Disabled	0
e. Retired	(3)
f. DROP	<u>0</u>
g. Continuing participants	120
h. New entrants	<u>18</u>
i. Total active life participants in valuation	138

2. Non-Active lives (including beneficiaries receiving benefits)

	Service Retirees, Vested Receiving <u>Benefits</u>	DROP <u>Benefits</u>	Receiving Death <u>Benefits</u>	Receiving Disability <u>Benefits</u>	Vested (Deferred Annuity)	Vested (Due Refund)	<u>Total</u>
a. Number prior valuation	93	0	21	9	34	17	174
Retired	6	0	0	0	(3)	0	3
DROP	0	0	0	0	0	0	0
Vested (Deferred Annuity)	0	0	0	0	1	0	1
Vested (Due Refund)	0	0	0	0	0	2	2
Hired/Terminated in Same Year	0	0	0	0	0	0	0
Death, With Survivor	0	0	1	0	0	0	1
Death, No Survivor	0	0	0	0	0	0	0
Disabled	0	0	0	0	0	0	0
Refund of Contributions	0	0	0	0	0	(6)	(6)
Rehires	0	0	0	0	0	0	0
Expired Annuities	0	0	0	0	0	0	0
Data Corrections	0	0	0	0	0	0	0
b. Number current valuation	99	0	22	9	32	13	175

SUMMARY OF CURRENT PLAN
(Through Ordinance 43-2019)

Original Effective Date	December 30, 1966.
Credited Service	Years and fractional parts of years of service with the City as a Police Officer or Firefighter.
Salary	<p><i>Before June 1, 2013 (and for Members eligible for Normal Retirement as of that date):</i> Gross earnings including overtime pay, and tax exempt, tax sheltered or tax deferred items of income.</p> <p><i>After June 1, 2013:</i> Police Officers: Base pay, special duty incentives paid, and educational incentive pay (not to exceed \$6,750 per year), excluding overtime and all other forms of compensation.</p> <p>Firefighters: Base pay, certification and certain types of incentive pay (not to exceed \$6,750 per year). Excludes overtime and any other forms of compensation.</p> <p>For purposes of determining the frozen accrued benefit as of June 1, 2013 Salary includes payment of accumulated leave that would have been included in salary if the Member retired prior to June 1, 2013, however the leave balance shall be reduced by leave used subsequent to June 1, 2013.</p>
Average Final Compensation	<p><i>Before June 1, 2013 (and for Members eligible for Normal Retirement as of that date):</i> Average of Salary during the highest three (3) years out of the last ten (10) years.</p> <p><i>After June 1, 2013:</i> Average of Salary during the highest five (5) years out of the last ten (10) years.</p>
Normal Retirement	
	<p><i>Benefit for Service Prior to June 1, 2013:</i></p>
Date	First of the month coinciding with or following the earlier of age 55 and the completion of eight (8) years of Credited Service or the completion of 25 years of Credited Service regardless of age.

Benefit	3.0% of Average Final Compensation (Before June 1, 2013) times Credited Service.
Form of Benefit	Ten Year Certain and Life Annuity (options available).

Benefit Accrued for Service After June 1, 2013:

Date	Remains the same for those with at least ten (10) years of service as of this date. For members with less than ten (10) years of service, is the earlier of age 55 and the completion of ten (10) years of Credited Service or age 52 with 25 years of Credited Service.
Benefit	2.5% of Average Final Compensation (5-Year) times Credited Service.
Form of Benefit	Ten Year Certain and Life Annuity (options available).

Members eligible for retirement prior to June 1, 2013 will continue to follow the same structure as before these amendments were adopted.

Early Retirement

Eligibility	With at least 10 years of Credited Service, age 50.
Benefit	Same as for Normal Retirement but reduced 3% per year prior to age 55 to reflect early payment.

Vesting

Schedule	<i>Before June 1, 2013:</i> 0% for first 7 years, 100% after 8 years. <i>After June 1, 2013:</i> 100% for 10 years (All Members are 100% vested in their frozen accrued benefit as of June 1, 2013).
Benefit	Before June 1, 2013: Frozen vested accrued benefit as of June 1, 2013 paid beginning at age 55. After June 1, 2013: Vested Accrued benefit based on Service earned after June 1, 2013. Terminated Vested Members may elect a refund of contributions or a monthly annuity payable upon reaching age 55. Non-vested Members receive a refund of contributions.

Disability

Eligibility	Total and permanent (as determined by the Board). Members covered from date of hire (Service incurred) or after completion of 10 years of Credited Service (Non-Service incurred).
Benefit	Accrued Benefit (determined as for Normal Retirement). Benefit shall not be less than 50% of Average Final Compensation for service incurred disability.
Form of Benefit	Paid for life and ten years certain, or until recovery (as determined by the Board); optional forms of payment are available.
Maximum	Total of Plan and Workers Compensation benefits shall not exceed 100% of Average Monthly Wage.

Cost-of-Living Adjustment

Eligibility	Normal and Early Retirees (and Disability Retirees who otherwise meet the requirements for Normal or Early Retirement at the time of Disability Retirement) hired before June 1, 2013.
Benefit	1.277% automatic lifetime COLA, beginning the first October 1 following one full year of retirement. For Members not eligible for Normal Retirement as of June 1, 2013 shall only apply to credited service earned prior to June 1, 2013.

Death Benefits

Service Incurred	Coverage from date of employment; beneficiary receives greater of accrued benefit or 50% of Average Final Compensation for life, with a maximum payment period of 25 years for non-spouse beneficiaries only.
Non-Service Incurred	Coverage after 8 years of service; same benefit as Service Incurred.

Contributions

Members	6.5% of Salary.
State	Tax on premiums for fire and casualty insurance issued to residents of the City as provided in Chapters 175 and 185, Florida Statutes.
City	Remaining amount necessary to pay the Normal Cost and fund the accrued, past service liability over 30 years.

Board of Trustees	Police Chief, Fire Chief, Commander designated by Police Chief, Division Chief designated by Fire Chief, Two elected Members from each Department, one citizen selected by a majority of other Members and appointed by the City Council as a ministerial duty.
Deferred Retirement Option Plan	
Eligibility	The original DROP is closed to any new participants after July 2, 2013. A subsequent program “DROP II” is available to participants effective December 10, 2019.
Participation	Not more than 60 months.
Rate of Return (DROP II)	The Account is credited with the actual net rate of investment return (total return net of investment management fees, brokerage commissions and transaction costs) minus 2% after each fiscal year end. The annual return is subject to a minimum of 0% and a maximum equal to the current valuation investment return assumption as adopted by the Board.
Form of Distribution	Cash lump sum (options available) payable at termination of employment.
Share Plan	
Funded Status	Not currently funded. Once funded, the method of allocation will be established by a mutual agreement between the City and unions representing the Police Officers and Firefighters.

STATEMENT OF FIDUCIARY NET POSITION
SEPTEMBER 30, 2019

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Short Term Investments	514,830
Cash	1
Total Cash and Equivalents	514,831
Receivables:	
From Broker for Investments Sold	316,524
Investment Income	86,057
Total Receivable	402,581
Investments:	
Fixed Income	13,321,471
Equities	33,171,821
Pooled/Common/Commingled Funds:	
Equity	6,975,684
Real Estate	8,346,561
Total Investments	61,815,537
Total Assets	62,732,949
<u>LIABILITIES</u>	
Payables:	
Refunds of Member Contributions	28,474
Administrative Expenses	4,620
To Broker for Investments Purchased	85,441
Total Liabilities	118,535
NET POSITION RESTRICTED FOR PENSIONS	62,614,414

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED SEPTEMBER 30, 2019
Market Value Basis

ADDITIONS

Contributions:

Member	478,472	
City	1,688,193	
State	753,963	
 Total Contributions		 2,920,628
 Investment Income:		
Net Increase in Fair Value of Investments	(705,505)	
Interest & Dividends	2,814,287	
Less Investment Expense ¹	(229,944)	
 Net Investment Income		 1,878,838
 Total Additions		 4,799,466

DEDUCTIONS

Distributions to Members:

Benefit Payments	4,222,726	
Lump Sum DROP Distributions	0	
Lump Sum PLOP Distributions	28,705	
Refunds of Member Contributions	139,731	
 Total Distributions		 4,391,162
 Administrative Expense		 112,786
 Total Deductions		 4,503,948
 Net Increase in Net Position		 295,518
 NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		62,318,896
 End of the Year		 62,614,414

¹Investment related expenses include investment advisory, custodial and performance monitoring fees.

NOTES TO THE FINANCIAL STATEMENTS
(For the Year Ended September 30, 2019)

Plan Administration

The Plan is a single-employer defined benefit pension plan administered by the Plan's Board of Trustees comprised of:

- a. Four of whom are the Police Chief, Fire Chief, a Police Major Assistant Chief or other Police Officer designated by the Police Chief and the City Manager, and a Chief Officer or other Firefighter designated by the Fire Chief and the City Manager;
- b. Two of whom are full-time Firefighters and two of whom are full-time Police Officers who are elected by their respective departments by a majority of the members of the plan in those departments; and
- c. a Ninth Trustee who is chosen by a majority of the first eight Trustees.

Plan Membership as of October 1, 2018:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	123
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	51
Active Plan Members	136
	310
	310

Benefits Provided

The Plan provides retirement, termination, disability and death benefits.

A summary of the benefit provisions can be found in the October 1, 2018 Actuarial Valuation Report for the City of Aubundale Municipal Firefighters' Pension Trust Fund prepared by Foster & Foster Actuaries and Consultants.

Incorporated are the benefit changes for measurement date 09/30/2019 as noted under the Notes to Schedule of Changes in Net Pension Liability and Related Ratios.

Contributions

Members: 6.5% of Salary.

State: Tax on premiums for fire and casualty insurance issued to residents of the City as provided in Chapters 175 and 185, Florida Statutes.

City: Remaining amount necessary to pay the Normal Cost and fund the accrued past service liability over 30 years.

Investments

Investment Policy:

The following was the Board's adopted asset allocation policy as of September 30, 2019:

Asset Class	Target Allocation
All Cap Value Equity	27.5%
Broad Growth Equity	27.5%
Foreign Equity Securities	10.0%
Broad Market Fixed Income	20.0%
Global Bond	5.0%
Real Estate	10.0%
Total	100.00%

Concentrations:

The Plan did not hold investments in any one organization that represent 5 percent or more of the Pension Plan's Fiduciary Net Position.

Rate of Return:

For the year ended September 30, 2019, the annual money-weighted rate of return on Pension Plan investments, net of Pension Plan investment expense, was 3.06 percent.

The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Deferred Retirement Option Program

Eligibility: The DROP is closed to any new participants after July 2, 2013.

Participation: Not more than 60 Months.

Rate of Return: At the election of the member, the Account is credited with either: 1) the actual net rate of investment return (total return net of brokerage commissions and transaction costs), or 2) 6.5% per year. The income is credited each fiscal quarter and the Member may change the method of crediting income once during the DROP period.

The DROP balance as September 30, 2019 is \$0.

NET PENSION LIABILITY OF THE SPONSOR

The components of the Net Pension Liability of the Sponsor on September 30, 2019 were as follows:

Total Pension Liability	\$ 67,378,861
Plan Fiduciary Net Position	\$ (62,614,414)
Sponsor's Net Pension Liability	<u>\$ 4,764,447</u>
Plan Fiduciary Net Position as a percentage of Total Pension Liability	92.93%

Actuarial Assumptions:

The Total Pension Liability was determined by an actuarial valuation as of October 1, 2018 updated to September 30, 2019 using the following actuarial assumptions:

Inflation	2.50%
Salary Increases	Service based
Discount Rate	7.75%
Investment Rate of Return	7.75%

Mortality Rate Healthy Active Lives:

Female: RP2000 Generational, 100% Combined Healthy White Collar, Scale BB.

Male: RP2000 Generational, 10% Combined Healthy White Collar / 90% Combined Healthy Blue Collar, Scale BB.

Mortality Rate Healthy Inactive Lives:

Female: RP2000 Generational, 100% Annuitant White Collar, Scale BB.

Male: RP2000 Generational, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB.

Mortality Rate Disabled Lives:

Female: 60% RP2000 Disabled Female set forward two years / 40% Annuitant White Collar with no setback, no projection scale.

Male: 60% RP2000 Disabled Male setback four years / 40% Annuitant White Collar with no setback, no projection scale.

The above assumption rates were mandated by Chapter 2015-157, Laws of Florida. This law mandates the use of the assumptions used in either of the two most recent valuations of the Florida Retirement System (FRS). The above rates are those outlined in Milliman's July 1, 2018 FRS valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

The most recent actuarial experience study used to review the other significant assumptions was dated August 17, 2018.

The Long-Term Expected Rate of Return on Pension Plan investments can be determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of Pension Plan investment expenses and inflation) are developed for each major asset class.

For 2019 the inflation rate assumption of the investment advisor was 2.50%.

These ranges are combined to produce the Long-Term Expected Rate of Return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of geometric real rates of return for each major asset class included in the Pension Plan's target asset allocation as of September 30, 2019 are summarized in the following table:

Asset Class	Long Term Expected Real Rate of Return
All Cap Value Equity	7.50%
Broad Growth Equity	7.50%
Foreign Equity Securities	8.50%
Broad Market Fixed Income	2.50%
Global Bond	3.50%
Real Estate	4.50%

GASB 67

Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.75 percent.

The projection of cash flows used to determine the Discount Rate assumed that Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate. Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the Long-Term Expected Rate of Return on Pension Plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability.

	1% Decrease 6.75%	Current Discount Rate 7.75%	1% Increase 8.75%
Sponsor's Net Pension Liability	\$ 12,579,262	\$ 4,764,447	\$ (1,751,316)

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Fiscal Years

	09/30/2019	09/30/2018	09/30/2017
Total Pension Liability			
Service Cost	935,609	996,049	978,374
Interest	4,985,073	4,948,098	4,845,726
Change in Excess State Money	-	-	-
Changes of benefit terms	(16,714)	-	-
Differences between Expected and Actual Experience	265,852	(140,006)	125,344
Changes of assumptions	-	1,178,390	-
Contributions - Buy Back	-	-	-
Benefit Payments, including Refunds of Employee Contributions	(4,391,162)	(4,474,998)	(4,899,952)
Net Change in Total Pension Liability	1,778,658	2,507,533	1,049,492
Total Pension Liability - Beginning	65,600,203	63,092,670	62,043,178
Total Pension Liability - Ending (a)	<u>\$ 67,378,861</u>	<u>\$ 65,600,203</u>	<u>\$ 63,092,670</u>
Plan Fiduciary Net Position			
Contributions - Employer	1,688,193	1,681,919	1,662,032
Contributions - State	753,963	724,200	681,740
Contributions - Employee	478,472	463,439	475,109
Contributions - Buy Back	-	-	-
Net Investment Income	1,878,838	5,490,249	7,397,792
Benefit Payments, including Refunds of Employee Contributions	(4,391,162)	(4,474,998)	(4,899,952)
Administrative Expense	(112,786)	(87,020)	(81,782)
Net Change in Plan Fiduciary Net Position	295,518	3,797,789	5,234,939
Plan Fiduciary Net Position - Beginning	62,318,896	58,521,107	53,286,168
Plan Fiduciary Net Position - Ending (b)	<u>\$ 62,614,414</u>	<u>\$ 62,318,896</u>	<u>\$ 58,521,107</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 4,764,447</u>	<u>\$ 3,281,307</u>	<u>\$ 4,571,563</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	92.93%	95.00%	92.75%
Covered Payroll ¹	\$ 7,319,880	\$ 7,123,928	\$ 6,666,701
Net Pension Liability as a percentage of Covered Payroll	65.09%	46.06%	68.57%

Notes to Schedule:

¹ The Covered Payroll numbers shown are in compliance with GASB 82.

Changes in benefit terms:

For measurement date 09/30/2019, amounts reported as changes of benefit terms resulted from the provisions of Chapter 112.1816, Florida Statutes. The Statutes state that, effective July 1, 2019, a death or disability (under the Plan's definition of total and permanent disability) for a Firefighter due to the diagnosis of cancer or circumstances that arise out of the treatment of cancer will be treated as duty-related.

Changes of assumptions:

For measurement date 09/30/2018, amounts reported as changes of assumptions resulted from the August 20, 2018 experience study.

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Fiscal Years

	<u>09/30/2016</u>	<u>09/30/2015</u>
Total Pension Liability		
Service Cost	937,776	879,893
Interest	4,597,357	4,548,755
Change in Excess State Money	(214,112)	-
Changes of benefit terms	(4,647)	-
Differences between Expected and Actual Experience	156,069	(1,094,130)
Changes of assumptions	1,822,308	-
Contributions - Buy Back	-	45,901
Benefit Payments, including Refunds of Employee Contributions	(3,999,048)	(3,653,202)
Net Change in Total Pension Liability	<u>3,295,703</u>	<u>727,217</u>
Total Pension Liability - Beginning	<u>58,747,475</u>	<u>58,020,258</u>
Total Pension Liability - Ending (a)	<u>\$ 62,043,178</u>	<u>\$ 58,747,475</u>
Plan Fiduciary Net Position		
Contributions - Employer	1,925,864	2,320,434
Contributions - State	731,350	670,201
Contributions - Employee	513,866	495,762
Contributions - Buy Back	-	45,901
Net Investment Income	5,588,136	(1,138,997)
Benefit Payments, including Refunds of Employee Contributions	(3,999,048)	(3,653,202)
Administrative Expense	(72,096)	(75,162)
Net Change in Plan Fiduciary Net Position	<u>4,688,072</u>	<u>(1,335,063)</u>
Plan Fiduciary Net Position - Beginning	<u>48,598,096</u>	<u>49,933,159</u>
Plan Fiduciary Net Position - Ending (b)	<u>\$ 53,286,168</u>	<u>\$ 48,598,096</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 8,757,010</u>	<u>\$ 10,149,379</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	85.89%	82.72%
Covered Payroll ¹	\$ 6,423,341	\$ 6,514,768
Net Pension Liability as a percentage of Covered Payroll	136.33%	155.79%

Notes to Schedule:

¹ The Covered Payroll numbers shown are in compliance with GASB 82, except for the 09/30/2015 measurement period which includes DROP payroll.

Changes of benefit terms:

For measurement date 09/30/2016, amounts reported as change of benefit terms resulted from an Actuarial Impact Statement dated February 10, 2017.

Changes of assumptions:

For measurement date 09/30/2016, as a result of Chapter 2015-157, Laws of Florida, the assumed rates of mortality were changed to the assumptions used by the Florida Retirement System for special risk employees.

The inflation assumption rate was lowered from 3.00% to 2.50%, matching the long-term inflation assumption utilized by the Plan's investment consultant.

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Fiscal Years

	<u>09/30/2014</u>	<u>09/30/2013</u>
Total Pension Liability		
Service Cost	844,189	781,656
Interest	4,489,894	4,427,655
Change in Excess State Money	-	-
Changes of benefit terms	-	-
Differences between Expected and Actual Experience	-	-
Changes of assumptions	-	-
Contributions - Buy Back	33,664	-
Benefit Payments, including Refunds of Employee Contributions	<u>(5,682,176)</u>	<u>(3,305,528)</u>
Net Change in Total Pension Liability	(314,429)	1,903,783
Total Pension Liability - Beginning	<u>58,334,687</u>	<u>56,430,904</u>
Total Pension Liability - Ending (a)	<u>\$ 58,020,258</u>	<u>\$ 58,334,687</u>
Plan Fiduciary Net Position		
Contributions - Employer	2,445,395	2,200,133
Contributions - State	724,287	671,213
Contributions - Employee	451,474	447,451
Contributions - Buy Back	33,664	-
Net Investment Income	5,183,029	5,960,691
Benefit Payments, including Refunds of Employee Contributions	<u>(5,682,176)</u>	<u>(3,305,528)</u>
Administrative Expense	<u>(64,150)</u>	<u>(69,845)</u>
Net Change in Plan Fiduciary Net Position	3,091,523	5,904,115
Plan Fiduciary Net Position - Beginning	<u>46,841,636</u>	<u>40,937,521</u>
Plan Fiduciary Net Position - Ending (b)	<u>\$ 49,933,159</u>	<u>\$ 46,841,636</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 8,087,099</u>	<u>\$ 11,493,051</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	86.06%	80.30%
Covered Payroll ¹	\$ 6,629,574	\$ 5,990,707
Net Pension Liability as a percentage of Covered Payroll	121.99%	191.85%

Notes to Schedule:

¹ The Covered Payroll numbers shown are in compliance with GASB 82.

SCHEDULE OF CONTRIBUTIONS
Last 10 Fiscal Years

Fiscal Year Ended	Actuarially Determined Contribution	Contributions in relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll ¹	Contributions as a percentage of Covered Payroll
09/30/2019	\$ 2,369,493	\$ 2,442,156	\$ (72,663)	\$ 7,319,880	33.36%
09/30/2018	\$ 2,413,269	\$ 2,406,119	\$ 7,150	\$ 7,123,928	33.78%
09/30/2017	\$ 2,378,374	\$ 2,343,772	\$ 34,602	\$ 6,666,701	35.16%
09/30/2016	\$ 2,544,678	\$ 2,657,214	\$ (112,536)	\$ 6,423,341	41.37%
09/30/2015	\$ 2,990,635	\$ 2,990,635	\$ -	\$ 6,514,768	45.91%
09/30/2014	\$ 3,169,682	\$ 3,169,682	\$ -	\$ 6,629,574	47.81%
09/30/2013	\$ 2,871,346	\$ 2,871,346	\$ -	\$ 5,990,707	47.93%

¹ The Covered Payroll numbers shown are in compliance with GASB 82, except for the 09/30/2015 measurement period which includes DROP payroll.

Notes to Schedule

Valuation Date: 10/01/2017

Actuarially determined contribution rates are calculated as of October 1, two years prior to the end of the fiscal year in which contributions are reported.

Methods and assumptions used to determine contribution rates:

Mortality:

Healthy Active Lives:

Female: RP2000 Generational, 100% Combined Healthy White Collar, Scale BB.

Male: RP2000 Generational, 10% Combined Healthy White Collar / 90% Combined Healthy Blue Collar, Scale BB.

Healthy Inactive Lives:

Female: RP2000 Generational, 100% Annuitant White Collar, Scale BB.

Male: RP2000 Generational, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB.

Disabled Lives:

Female: 60% RP2000 Disabled Female set forward two years / 40% Annuitant White Collar with no setback, no projection scale.

Male: 60% RP2000 Disabled Male setback four years / 40% Annuitant White Collar with no setback, no projection scale.

The assumed rates of mortality were mandated by Chapter 2015-157, Laws of Florida. This law mandates the use of the assumptions used in either of the two most recent valuations of the Florida Retirement System (FRS). The above rates are those outlined in the July 1, 2016 FRS actuarial valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

Interest Rate:

8% per year compounded annually, net of investment related expenses. This assumption is supported by the Plan's target asset allocation and expected long-term rate of return by asset class.

Retirement Age: Those with at least 10 years of Service as of June 1, 2013:
 Earlier of age 55 and 8 years of service or 25 years of service, regardless of age.
 Also, any Member who has reached Normal Retirement is assumed to continue employment for one additional year.
 Those with less than 10 years of service as of June 1, 2013:
 Earlier of age 55 and 10 years of service or age 52 with 25 years of service. Also, any Member who has reached Normal Retirement is assumed to continue employment for one additional year.
 We believe this assumption is reasonable based on the plan provisions.

Early Retirement: Commencing at eligibility for Early Retirement (age 50 with 10 years of service), Members are assumed to retire with an immediate benefit at the rate of 5% per year. The assumption is 2% per year for Members who have at least 10 years of service on June 1, 2013.

Payroll Growth: 1.5%.

Disability Rates: See Table below (1205). 75% of Disability and Pre-Retirement Death retirements are assumed to be service-related.

Termination Rates: See Table below (modified T-5).

Salary Increases: 6.0% per year until the assumed retirement age.
 For Members Eligible for Retirement on June 1, 2013:
 Projected salary at retirement is increased 25% to account for non-regular compensation.
 For Members not eligible for Normal Retirement on June 1, 2013 with at least 10 years of service as of that date:
 The projected frozen benefit as of June 1, 2013 includes a 25% load for the final year included in the averaging period.
 For Members with less than 10 years of service (and not eligible for Normal Retirement) as of June 1, 2013:
 No final salary load is assumed.

Asset Smoothing Methodology: The Actuarial Value of Assets is brought forward using the historical four-year geometric average of Market Value Returns (net-of-fees). Over time, this may result in a deminis bias that is above or below the Market Value of Assets.

Funding Method: Entry Age Normal Actuarial Cost Method. The following loads are applied for determination of the Sponsor funding requirement:
 Interest – A half year, based on the current 8.0% assumption.
 Salary – A full year, based on the current 6.0% assumption.

Amortization Method: Level percentage of pay, closed.

Remaining Amortization Period: 28 Years (as of 10/01/2017).

Termination and Disability Rate Tables:

Age	% Terminating During the Year	% Becoming Disabled During the Year
20	9.4%	0.14%
30	8.7%	0.19%
40	6.7%	0.32%
50	4.1%	1.10%
52	3.4%	1.31%

SCHEDULE OF INVESTMENT RETURNS
Last 10 Fiscal Years

Fiscal Year Ended	Annual Money-Weighted Rate of Return Net of Investment Expense
09/30/2019	3.06%
09/30/2018	9.55%
09/30/2017	14.17%
09/30/2016	11.65%
09/30/2015	-2.27%
09/30/2014	11.20%
09/30/2013	14.41%

NOTES TO THE FINANCIAL STATEMENTS
(For the Year Ended September 30, 2019)

Plan Description

The Plan is a single-employer defined benefit pension plan administered by the Plan's Board of Trustees comprised of:

- a. Four of whom are the Police Chief, Fire Chief, a Police Major Assistant Chief or other Police Officer designated by the Police Chief and the City Manager, and a Chief Officer or other Firefighter designated by the Fire Chief and the City Manager;
- b. Two of whom are full-time Firefighters and two of whom are full-time Police Officers who are elected by their respective departments by a majority of the members of the plan in those departments; and
- c. a Ninth Trustee who is chosen by a majority of the first eight Trustees.

Each person employed by the City Police or Fire Department as a fulltime Police Officer or Firefighter becomes a member of the plan as a condition of his employment. All Police Officers and Firefighters are therefore eligible for all plan benefits as provided for in the plan document and by applicable law.

Plan Membership as of October 1, 2018:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	123
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	51
Active Plan Members	<u>136</u>
	<u><u>310</u></u>

Benefits Provided

The Plan provides retirement, termination, disability and death benefits.
 A summary of the benefit provisions can be found in the October 1, 2018 Actuarial Valuation Report for the City of Aubundale Municipal Firefighters' Pension Trust Fund prepared by Foster & Foster Actuaries and Consultants.
 Incorporated are the benefit changes for measurement date 09/30/2019 as noted under the Notes to Schedule of Changes in Net Pension Liability and Related Ratios.

Contributions

Members: 6.5% of Salary.
 State: Tax on premiums for fire and casualty insurance issued to residents of the City as provided in Chapters 175 and 185, Florida Statutes.
 City: Remaining amount necessary to pay the Normal Cost and fund the accrued past service liability over 30 years.

Net Pension Liability

The measurement date is September 30, 2019.
 The measurement period for the pension expense was October 1, 2018 to September 30, 2019.
 The reporting period is October 1, 2018 through September 30, 2019.

The Sponsor's Net Pension Liability was measured as of September 30, 2019.
 The Total Pension Liability used to calculate the Net Pension Liability was determined as of that date.

Actuarial Assumptions:

The Total Pension Liability was determined by an actuarial valuation as of October 1, 2018 updated to September 30, 2019 using the following actuarial assumptions:

Inflation	2.50%
Salary Increases	Service based
Discount Rate	7.75%
Investment Rate of Return	7.75%

Mortality Rate Healthy Active Lives:

Female: RP2000 Generational, 100% Combined Healthy White Collar, Scale BB.

Male: RP2000 Generational, 10% Combined Healthy White Collar / 90% Combined Healthy Blue Collar, Scale BB.

Mortality Rate Healthy Inactive Lives:

Female: RP2000 Generational, 100% Annuitant White Collar, Scale BB.

Male: RP2000 Generational, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB.

Mortality Rate Disabled Lives:

Female: 60% RP2000 Disabled Female set forward two years / 40% Annuitant White Collar with no setback, no projection scale.

Male: 60% RP2000 Disabled Male setback four years / 40% Annuitant White Collar with no setback, no projection scale.

The above assumption rates were mandated by Chapter 2015-157, Laws of Florida. This law mandates the use of the assumptions used in either of the two most recent valuations of the Florida Retirement System (FRS). The above rates are those outlined in Milliman's July 1, 2018 FRS valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

The most recent actuarial experience study used to review the other significant assumptions was dated August 17, 2018.

The Long-Term Expected Rate of Return on Pension Plan investments can be determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of Pension Plan investment expenses and inflation) are developed for each major asset class.

For 2019 the inflation rate assumption of the investment advisor was 2.50%.

These ranges are combined to produce the Long-Term Expected Rate of Return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of geometric real rates of return for each major asset class included in the Pension Plan's target asset allocation as of September 30, 2019 are summarized in the following table:

Asset Class	Target Allocation	Long Term Expected Real Rate of Return
All Cap Value Equity	27.5%	7.50%
Broad Growth Equity	27.5%	7.50%
Foreign Equity Securities	10.0%	8.50%
Broad Market Fixed Income	20.0%	2.50%
Global Bond	5.0%	3.50%
Real Estate	10.0%	4.50%
Total	100.00%	

Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.75 percent.

The projection of cash flows used to determine the Discount Rate assumed that Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate. Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the Long-Term Expected Rate of Return on Pension Plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability.

CHANGES IN NET PENSION LIABILITY

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a)-(b)
Balances at September 30, 2018	\$ 65,600,203	\$ 62,318,896	\$ 3,281,307
Changes for a Year:			
Service Cost	935,609	-	935,609
Interest	4,985,073	-	4,985,073
Differences between Expected and Actual Experience	265,852	-	265,852
Changes of assumptions	-	-	-
Changes of benefit terms	(16,714)	-	(16,714)
Contributions - Employer	-	1,688,193	(1,688,193)
Contributions - State	-	753,963	(753,963)
Contributions - Employee	-	478,472	(478,472)
Net Investment Income	-	1,878,838	(1,878,838)
Benefit Payments, including Refunds of Employee Contributions	(4,391,162)	(4,391,162)	-
Administrative Expense	-	(112,786)	112,786
Net Changes	1,778,658	295,518	1,483,140
Balances at September 30, 2019	\$ 67,378,861	\$ 62,614,414	\$ 4,764,447

Sensitivity of the Net Pension Liability to changes in the Discount Rate.

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.75%	7.75%	8.75%
Sponsor's Net Pension Liability	\$ 12,579,262	\$ 4,764,447	\$ (1,751,316)

Pension Plan Fiduciary Net Position.

Detailed information about the pension Plan's Fiduciary Net Position is available in a separately issued Plan financial report.

**PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED
INFLOWS OF RESOURCES RELATED TO PENSIONS**

For the year ended September 30, 2019, the Sponsor will recognize a Pension Expense of \$1,992,971.

On September 30, 2019, the Sponsor reported Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between Expected and Actual Experience	244,016	84,003
Changes of assumptions	707,034	-
Net difference between Projected and Actual Earnings on Pension Plan investments	150,040	-
Total	\$ 1,101,090	\$ 84,003

Amounts reported as Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions will be recognized in Pension Expense as follows:

Year ended September 30:	
2020	\$ (296,705)
2021	\$ 19,217
2022	\$ 663,500
2023	\$ 631,075
2024	\$ -
Thereafter	\$ -

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Fiscal Years

	09/30/2019	09/30/2018	09/30/2017
Total Pension Liability			
Service Cost	935,609	996,049	978,374
Interest	4,985,073	4,948,098	4,845,726
Change in Excess State Money	-	-	-
Changes of benefit terms	(16,714)	-	-
Differences between Expected and Actual Experience	265,852	(140,006)	125,344
Changes of assumptions	-	1,178,390	-
Contributions - Buy Back	-	-	-
Benefit Payments, including Refunds of Employee Contributions	(4,391,162)	(4,474,998)	(4,899,952)
Net Change in Total Pension Liability	1,778,658	2,507,533	1,049,492
Total Pension Liability - Beginning	65,600,203	63,092,670	62,043,178
Total Pension Liability - Ending (a)	<u>\$ 67,378,861</u>	<u>\$ 65,600,203</u>	<u>\$ 63,092,670</u>
Plan Fiduciary Net Position			
Contributions - Employer	1,688,193	1,681,919	1,662,032
Contributions - State	753,963	724,200	681,740
Contributions - Employee	478,472	463,439	475,109
Contributions - Buy Back	-	-	-
Net Investment Income	1,878,838	5,490,249	7,397,792
Benefit Payments, including Refunds of Employee Contributions	(4,391,162)	(4,474,998)	(4,899,952)
Administrative Expense	(112,786)	(87,020)	(81,782)
Net Change in Plan Fiduciary Net Position	295,518	3,797,789	5,234,939
Plan Fiduciary Net Position - Beginning	62,318,896	58,521,107	53,286,168
Plan Fiduciary Net Position - Ending (b)	<u>\$ 62,614,414</u>	<u>\$ 62,318,896</u>	<u>\$ 58,521,107</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 4,764,447</u>	<u>\$ 3,281,307</u>	<u>\$ 4,571,563</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	92.93%	95.00%	92.75%
Covered Payroll ¹	\$ 7,319,880	\$ 7,123,928	\$ 6,666,701
Net Pension Liability as a percentage of Covered Payroll	65.09%	46.06%	68.57%

Notes to Schedule:

¹ The Covered Payroll numbers shown are in compliance with GASB 82.

Changes in benefit terms:

For measurement date 09/30/2019, amounts reported as changes of benefit terms resulted from the provisions of Chapter 112.1816, Florida Statutes. The Statutes state that, effective July 1, 2019, a death or disability (under the Plan's definition of total and permanent disability) for a Firefighter due to the diagnosis of cancer or circumstances that arise out of the treatment of cancer will be treated as duty-related.

Changes of assumptions:

For measurement date 09/30/2018, amounts reported as changes of assumptions resulted from the August 20, 2018 experience study.

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Fiscal Years

	<u>09/30/2016</u>	<u>09/30/2015</u>
Total Pension Liability		
Service Cost	937,776	879,893
Interest	4,597,357	4,548,755
Change in Excess State Money	(214,112)	-
Changes of benefit terms	(4,647)	-
Differences between Expected and Actual Experience	156,069	(1,094,130)
Changes of assumptions	1,822,308	-
Contributions - Buy Back	-	45,901
Benefit Payments, including Refunds of Employee Contributions	<u>(3,999,048)</u>	<u>(3,653,202)</u>
Net Change in Total Pension Liability	3,295,703	727,217
Total Pension Liability - Beginning	<u>58,747,475</u>	<u>58,020,258</u>
Total Pension Liability - Ending (a)	<u><u>\$ 62,043,178</u></u>	<u><u>\$ 58,747,475</u></u>
Plan Fiduciary Net Position		
Contributions - Employer	1,925,864	2,320,434
Contributions - State	731,350	670,201
Contributions - Employee	513,866	495,762
Contributions - Buy Back	-	45,901
Net Investment Income	5,588,136	(1,138,997)
Benefit Payments, including Refunds of Employee Contributions	(3,999,048)	(3,653,202)
Administrative Expense	<u>(72,096)</u>	<u>(75,162)</u>
Net Change in Plan Fiduciary Net Position	4,688,072	(1,335,063)
Plan Fiduciary Net Position - Beginning	<u>48,598,096</u>	<u>49,933,159</u>
Plan Fiduciary Net Position - Ending (b)	<u><u>\$ 53,286,168</u></u>	<u><u>\$ 48,598,096</u></u>
Net Pension Liability - Ending (a) - (b)	<u><u>\$ 8,757,010</u></u>	<u><u>\$ 10,149,379</u></u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	85.89%	82.72%
Covered Payroll ¹	\$ 6,423,341	\$ 6,514,768
Net Pension Liability as a percentage of Covered Payroll	136.33%	155.79%

Notes to Schedule:

¹ The Covered Payroll numbers shown are in compliance with GASB 82, except for the 09/30/2015 measurement period which includes DROP payroll.

Changes of benefit terms:

For measurement date 09/30/2016, amounts reported as change of benefit terms resulted from an Actuarial Impact Statement dated February 10, 2017.

Changes of assumptions:

For measurement date 09/30/2016, as a result of Chapter 2015-157, Laws of Florida, the assumed rates of mortality were changed to the assumptions used by the Florida Retirement System for special risk employees.

The inflation assumption rate was lowered from 3.00% to 2.50%, matching the long-term inflation assumption utilized by the Plan's investment consultant.

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS
Last 10 Fiscal Years

	<u>09/30/2014</u>	<u>09/30/2013</u>
Total Pension Liability		
Service Cost	844,189	781,656
Interest	4,489,894	4,427,655
Change in Excess State Money	-	-
Changes of benefit terms	-	-
Differences between Expected and Actual Experience	-	-
Changes of assumptions	-	-
Contributions - Buy Back	33,664	-
Benefit Payments, including Refunds of Employee Contributions	<u>(5,682,176)</u>	<u>(3,305,528)</u>
Net Change in Total Pension Liability	(314,429)	1,903,783
Total Pension Liability - Beginning	<u>58,334,687</u>	<u>56,430,904</u>
Total Pension Liability - Ending (a)	<u><u>\$ 58,020,258</u></u>	<u><u>\$ 58,334,687</u></u>
Plan Fiduciary Net Position		
Contributions - Employer	2,445,395	2,200,133
Contributions - State	724,287	671,213
Contributions - Employee	451,474	447,451
Contributions - Buy Back	33,664	-
Net Investment Income	5,183,029	5,960,691
Benefit Payments, including Refunds of Employee Contributions	<u>(5,682,176)</u>	<u>(3,305,528)</u>
Administrative Expense	<u>(64,150)</u>	<u>(69,845)</u>
Net Change in Plan Fiduciary Net Position	3,091,523	5,904,115
Plan Fiduciary Net Position - Beginning	<u>46,841,636</u>	<u>40,937,521</u>
Plan Fiduciary Net Position - Ending (b)	<u><u>\$ 49,933,159</u></u>	<u><u>\$ 46,841,636</u></u>
Net Pension Liability - Ending (a) - (b)	<u><u>\$ 8,087,099</u></u>	<u><u>\$ 11,493,051</u></u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	86.06%	80.30%
Covered Payroll ¹	\$ 6,629,574	\$ 5,990,707
Net Pension Liability as a percentage of Covered Payroll	121.99%	191.85%

Notes to Schedule:

¹ The Covered Payroll numbers shown are in compliance with GASB 82.

EXPENSE DEVELOPMENT AND AMORTIZATION SCHEDULES

The following information is not required to be disclosed but is provided for informational purposes.

SCHEDULE OF CONTRIBUTIONS
Last 10 Fiscal Years

Fiscal Year Ended	Actuarially Determined Contribution	Contributions in relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll ¹	Contributions as a percentage of Covered Payroll
09/30/2019	\$ 2,369,493	\$ 2,442,156	\$ (72,663)	\$ 7,319,880	33.36%
09/30/2018	\$ 2,413,269	\$ 2,406,119	\$ 7,150	\$ 7,123,928	33.78%
09/30/2017	\$ 2,378,374	\$ 2,343,772	\$ 34,602	\$ 6,666,701	35.16%
09/30/2016	\$ 2,544,678	\$ 2,657,214	\$ (112,536)	\$ 6,423,341	41.37%
09/30/2015	\$ 2,990,635	\$ 2,990,635	\$ -	\$ 6,514,768	45.91%
09/30/2014	\$ 3,169,682	\$ 3,169,682	\$ -	\$ 6,629,574	47.81%
09/30/2013	\$ 2,871,346	\$ 2,871,346	\$ -	\$ 5,990,707	47.93%

¹ The Covered Payroll numbers shown are in compliance with GASB 82, except for the 09/30/2015 measurement period which includes DROP payroll.

Notes to Schedule

Valuation Date: 10/01/2017

Actuarially determined contribution rates are calculated as of October 1, two years prior to the end of the fiscal year in which contributions are reported.

Methods and assumptions used to determine contribution rates:

Mortality:

Healthy Active Lives:

Female: RP2000 Generational, 100% Combined Healthy White Collar, Scale BB.

Male: RP2000 Generational, 10% Combined Healthy White Collar / 90% Combined Healthy Blue Collar, Scale BB.

Healthy Inactive Lives:

Female: RP2000 Generational, 100% Annuitant White Collar, Scale BB.

Male: RP2000 Generational, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB.

Disabled Lives:

Female: 60% RP2000 Disabled Female set forward two years / 40% Annuitant White Collar with no setback, no projection scale.

Male: 60% RP2000 Disabled Male setback four years / 40% Annuitant White Collar with no setback, no projection scale.

The assumed rates of mortality were mandated by Chapter 2015-157, Laws of Florida. This law mandates the use of the assumptions used in either of the two most recent valuations of the Florida Retirement System (FRS). The above rates are those outlined in the July 1, 2016 FRS actuarial valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

Interest Rate:

8% per year compounded annually, net of investment related expenses. This assumption is supported by the Plan's target asset allocation and expected long-term rate of return by asset class.

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Retirement Age: Those with at least 10 years of Service as of June 1, 2013:
 Earlier of age 55 and 8 years of service or 25 years of service, regardless of age.
 Also, any Member who has reached Normal Retirement is assumed to continue employment for one additional year.
 Those with less than 10 years of service as of June 1, 2013:
 Earlier of age 55 and 10 years of service or age 52 with 25 years of service. Also, any Member who has reached Normal Retirement is assumed to continue employment for one additional year.
 We believe this assumption is reasonable based on the plan provisions.

Early Retirement: Commencing at eligibility for Early Retirement (age 50 with 10 years of service), Members are assumed to retire with an immediate benefit at the rate of 5% per year. The assumption is 2% per year for Members who have at least 10 years of service on June 1, 2013.

Payroll Growth: 1.5%.

Disability Rates: See Table below (1205). 75% of Disability and Pre-Retirement Death retirements are assumed to be service-related.

Termination Rates: See Table below (modified T-5).

Salary Increases: 6.0% per year until the assumed retirement age.
 For Members Eligible for Retirement on June 1, 2013:
 Projected salary at retirement is increased 25% to account for non-regular compensation.

Asset Smoothing Methodology: The Actuarial Value of Assets is brought forward using the historical four-year geometric average of Market Value Returns (net-of-fees). Over time, this may result in a deminis bias that is above or below the Market Value of Assets.

Funding Method: Entry Age Normal Actuarial Cost Method. The following loads are applied for determination of the Sponsor funding requirement:
 Interest – A half year, based on the current 8.0% assumption.
 Salary – A full year, based on the current 6.0% assumption.

Amortization Method: Level percentage of pay, closed.

Remaining Amortization Period: 28 Years (as of 10/01/2017).

Termination and Disability Rate Tables:

Age	% Terminating During the Year	% Becoming Disabled During the Year
20	9.40%	0.14%
30	8.70%	0.19%
40	6.70%	0.32%
50	4.10%	1.10%
52	3.40%	1.31%

COMPONENTS OF PENSION EXPENSE
FISCAL YEAR SEPTEMBER 30, 2019

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning balance	\$ 3,281,307	\$ 3,440,377	\$ 2,525,139	\$ -
Total Pension Liability Factors:				
Service Cost	935,609	-	-	935,609
Interest	4,985,073	-	-	4,985,073
Changes in benefit terms	(16,714)	-	-	(16,714)
Differences between Expected and Actual Experience with regard to economic or demographic assumptions	265,852	-	265,852	-
Current year amortization of experience difference	-	(28,001)	(123,525)	95,524
Change in assumptions about future economic or demographic factors or other inputs	-	-	-	-
Current year amortization of change in assumptions	-	-	(691,255)	691,255
Benefit Payments, including Refunds of Employee Contributions	(4,391,162)	-	-	-
Net change	<u>1,778,658</u>	<u>(28,001)</u>	<u>(548,928)</u>	<u>6,690,747</u>
Plan Fiduciary Net Position:				
Contributions - Employer	1,688,193	-	-	-
Contributions - State	753,963	-	-	-
Contributions - Employee	478,472	-	-	(478,472)
Projected Net Investment Income	4,768,361	-	-	(4,768,361)
Difference between projected and actual earnings on Pension Plan investments	(2,889,523)	-	2,889,523	-
Current year amortization	-	(1,166,793)	(1,603,064)	436,271
Benefit Payments, including Refunds of Employee Contributions	(4,391,162)	-	-	-
Administrative Expenses	(112,786)	-	-	112,786
Net change	<u>295,518</u>	<u>(1,166,793)</u>	<u>1,286,459</u>	<u>(4,697,776)</u>
Ending Balance	<u>\$ 4,764,447</u>	<u>\$ 2,245,583</u>	<u>\$ 3,262,670</u>	<u>\$ 1,992,971</u>

AMORTIZATION SCHEDULE - INVESTMENTS

Increase (Decrease) in Pension Expense Arising from the Recognition of the of Differences Between Projected and Actual Earnings on Pension Plan Investments

Plan Year Ending	Differences Between Projected and Actual Earnings	Recognition Period (Years)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2019	\$ 2,889,523	5	\$ 577,903	\$ 577,905	\$ 577,905	\$ 577,905	\$ 577,905	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ (876,259)	5	\$ (175,252)	\$ (175,252)	\$ (175,252)	\$ (175,252)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ (3,221,413)	5	\$ (644,283)	\$ (644,283)	\$ (644,283)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ (1,736,291)	5	\$ (347,258)	\$ (347,258)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 5,125,807	5	\$ 1,025,161	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 436,271	\$ (588,888)	\$ (241,630)	\$ 402,653	\$ 577,905	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

AMORTIZATION SCHEDULE - CHANGES OF ASSUMPTIONS

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions

Plan Year Ending	Changes of Assumptions	Recognition Period (Years)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2018	\$ 1,178,390	5	\$ 235,678	\$ 235,678	\$ 235,678	\$ 235,678	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ 1,822,308	4	\$ 455,577	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 691,255	\$ 235,678	\$ 235,678	\$ 235,678	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

AMORTIZATION SCHEDULE - EXPERIENCE

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Plan Year Ending	Differences Between Expected and Actual Experience	Recognition Period (Years)	Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience												
			2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029		
2019	\$ 265,852	5	\$ 53,172	\$ 53,170	\$ 53,170	\$ 53,170	\$ 53,170	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2018	\$ (140,006)	5	\$ (28,001)	\$ (28,001)	\$ (28,001)	\$ (28,001)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2017	\$ 125,344	4	\$ 31,336	\$ 31,336	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
2016	\$ 156,069	4	\$ 39,017	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Net Increase (Decrease) in Pension Expense			\$ 95,524	\$ 56,505	\$ 25,169	\$ 25,169	\$ 53,170	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	