

BONITA SPRINGS FIRE CONTROL AND RESCUE DISTRICT  
FIREFIGHTERS' RETIREMENT SYSTEM

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

November 18, 2019

Board of Trustees  
City of Bonita Springs Fire Control and Rescue District  
Firefighters' Retirement System

Re: Bonita Springs Fire Control and Rescue District Firefighters' Retirement System

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the Bonita Springs Fire Control and Rescue District Firefighters' Retirement System. 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 and 175, 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 valuation, 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 Bonita Springs Fire Control and Rescue District, 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 Bonita Springs Fire Control and Rescue District, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Firefighter's Retirement System. 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:   
Patrick T. Donlan, ASA, EA, MAAA  
Enrolled Actuary #17-6595

By:   
Christine M. O'Neal, FSA, EA, MAAA  
Enrolled Actuary #17-7916

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## SUMMARY OF REPORT

The regular annual actuarial valuation of the Bonita Springs Fire Control and Rescue District Firefighters' Retirement System, 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 November 18, 2019 Actuarial Impact Statement, determined as of October 1, 2018, are as follows:

Valuation Date Applicable to Fiscal Year Ending	10/1/2019 <u>9/30/2021</u>	10/1/2018 <u>9/30/2020</u>
Minimum Required Contribution % of Projected Annual Payroll	55.4%	56.6%
Member Contributions (Est.) % of Projected Annual Payroll	7.0%	7.0%
District And State Required Contribution % of Projected Annual Payroll	48.4%	49.6%
State Contribution (Est.) <sup>1</sup> % of Projected Annual Payroll	\$736,951 8.1%	\$736,951 8.1%
District Required Contribution <sup>2</sup> % of Projected Annual Payroll	40.3%	41.5%

<sup>1</sup> Represents the amount received in calendar 2019.

<sup>2</sup> The required contribution from the combination of District and State sources for the year ending September 30, 2021, is 48.4% of the actual payroll realized in that year. As a budgeting tool, the District may contribute 40.3% of each Member's Salary and then make a one-time adjustment to account for the actual State Monies received. Please note that the District has access to a prepaid contribution of \$114,711.99 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 November 18, 2019 Actuarial Impact Statement (determined as of October 1, 2018). The decrease is attributable primarily due to an increase in payroll.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. The primary source of actuarial loss was inactive mortality experience. This loss was offset in part by a gain associated with favorable retirement experience. and an investment return of 7.65% (Actuarial Asset Basis) which exceeded the 7.60% assumption.

## CHANGES SINCE PRIOR VALUATION

### Plan Changes

Chapter 2019-21, Laws of Florida was signed into effect granting certain disability benefits to firefighters participating in an employer-sponsored retirement plan. Effective July 1, 2019, "the retirement plan must consider the firefighter totally and permanently disabled in the line of duty if he or she meets the retirement plan's definition of totally and permanently disabled due to the diagnosis of cancer or circumstances that arise out of the treatment of cancer." For this purpose, "cancer" is as defined in Section 112.1816(1), Florida Statutes.

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

### 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 that are in line-of-duty, as a result of the plan change described above.

## CONTRIBUTION IMPACT OF ANNUAL CHANGES

(1) Contribution Determined as of October 1, 2018	43.4%
(2) Summary of Contribution Impact by component:	
Change in State Contribution Percentage	-1.9%
Change in Normal Cost Rate	-0.2%
Change in Administrative Expense Percentage	0.1%
Payroll Change Effect on UAAL Amortization	-0.4%
Investment Return (Actuarial Asset Basis)	0.0%
Salary Increases	0.3%
Active Decrements	0.2%
Inactive Mortality	0.4%
Assumption Change	0.0%
Other	-1.6%
Total Change in Contribution	-3.1%
(3) Contribution Determined as of October 1, 2019	40.3%

## COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	<u>10/1/2019</u>	<u>10/1/2018</u>
A. Participant Data		
Actives	97	100
Service Retirees	44	43
DROP Retirees	4	2
Beneficiaries	2	2
Disability Retirees	3	2
Terminated Vested	<u>7</u>	<u>4</u>
Total	157	153
Total Annual Payroll	\$9,060,926	\$8,918,131
Payroll Under Assumed Ret. Age	9,060,926	8,918,131
Annual Rate of Payments to:		
Service Retirees	3,729,401	3,586,669
DROP Retirees	342,862	152,102
Beneficiaries	45,922	45,922
Disability Retirees	129,000	82,267
Terminated Vested	105,699	57,149
B. Assets		
Actuarial Value (AVA) <sup>1</sup>	75,528,254	68,184,358
Market Value (MVA) <sup>1</sup>	73,803,033	70,794,857
C. Liabilities		
Present Value of Benefits		
Actives		
Retirement Benefits	55,246,641	55,820,098
Disability Benefits	542,973	511,774
Death Benefits	303,213	298,499
Vested Benefits	3,584,567	3,615,914
Refund of Contributions	147,028	134,758
Service Retirees	46,901,409	45,502,055
DROP Retirees <sup>1</sup>	7,049,128	2,790,021
Beneficiaries	276,376	299,166
Disability Retirees	1,448,867	951,217
Terminated Vested	691,449	408,410
Share Plan Balances <sup>1</sup>	<u>0</u>	<u>0</u>
Total	116,191,651	110,331,912

C. Liabilities - (Continued)	<u>10/1/2019</u>	<u>10/1/2018</u>
Present Value of Future Salaries	80,032,226	79,333,735
Present Value of Future Member Contributions	5,602,256	5,553,361
Normal Cost (Retirement)	2,072,612	2,056,057
Normal Cost (Disability)	41,012	35,464
Normal Cost (Death)	15,610	15,458
Normal Cost (Vesting)	190,973	194,962
Normal Cost (Refunds)	<u>19,149</u>	<u>17,671</u>
Total Normal Cost	2,339,356	2,319,612
Present Value of Future Normal Costs	19,971,445	19,966,904
Accrued Liability (Retirement)	37,478,754	38,066,270
Accrued Liability (Disability)	219,683	210,266
Accrued Liability (Death)	175,440	170,667
Accrued Liability (Vesting)	1,954,987	1,950,545
Accrued Liability (Refunds)	24,113	16,391
Accrued Liability (Inactives) <sup>1</sup>	56,367,229	49,950,869
Share Plan Balances <sup>1</sup>	<u>0</u>	<u>0</u>
Total Actuarial Accrued Liability (EAN AL)	96,220,206	90,365,008
Unfunded Actuarial Accrued Liability (UAAL)	20,691,952	22,180,650
Funded Ratio (AVA / EAN AL)	78.5%	75.5%

D. Actuarial Present Value of		
Accrued Benefits	<u>10/1/2019</u>	<u>10/1/2018</u>
Vested Accrued Benefits		
Inactives + Share Plan Balances <sup>1</sup>	56,367,229	49,950,869
Actives	17,158,686	18,085,431
Member Contributions	<u>4,907,525</u>	<u>4,756,007</u>
Total	78,433,440	72,792,307
Non-vested Accrued Benefits	<u>5,338,700</u>	<u>5,514,313</u>
Total Present Value		
Accrued Benefits (PVAB)	83,772,140	78,306,620
Funded Ratio (MVA / PVAB)	88.1%	90.4%
Increase (Decrease) in Present Value of		
Accrued Benefits Attributable to:		
Plan Amendments	0	
Assumption Changes	0	
Plan Experience	3,569,884	
Benefits Paid	(3,907,194)	
Interest	5,802,830	
Other	<u>0</u>	
Total	5,465,520	

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 (with interest) % of Total Annual Payroll <sup>2</sup>	26.8	27.0
Administrative Expenses (with interest) % of Total Annual Payroll <sup>2</sup>	0.7	0.6
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 15 years (as of 10/1/2019, with interest) % of Total Annual Payroll <sup>2</sup>	27.9	29.0
Minimum Required Contribution % of Total Annual Payroll <sup>2</sup>	55.4	56.6
Expected Member Contributions % of Total Annual Payroll <sup>2</sup>	7.0	7.0
Expected District and State Contribution % of Total Annual Payroll <sup>2</sup>	48.4	49.6

#### F. Past Contributions

Plan Years Ending:	<u>9/30/2019</u>
Total Required Contribution	5,972,103
District and State Requirement	5,352,774
Actual Contributions Made:	
Members (excluding buyback)	619,329
District	4,615,822
State	<u>736,951</u>
Total	5,972,102

G. Net Actuarial (Gain)/Loss	480,309
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<sup>1</sup> The asset values and liabilities include accumulated DROP and Share Plan Balances as of 9/30/2019 and 9/30/2018.

<sup>2</sup> Contributions developed as of 10/1/2019 are expressed as a percentage of total annual payroll at 10/1/2019 of \$9,060,926.

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	20,691,952
2020	19,648,463
2021	18,525,668
2024	14,618,856
2028	7,876,943
2031	1,353,028
2034	0

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

	<u>Actual</u>	<u>Assumed</u>
Year Ended 9/30/2019	7.01%	5.28%
Year Ended 9/30/2018	5.99%	5.33%
Year Ended 9/30/2017	5.20%	4.89%
Year Ended 9/30/2016	6.05%	4.71%
Year Ended 9/30/2015	5.79%	4.67%

(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	1.34%	7.65%	7.60%
Year Ended 9/30/2018	8.79%	7.12%	7.60%
Year Ended 9/30/2017	12.82%	7.61%	7.60%
Year Ended 9/30/2016	7.98%	8.64%	7.60%
Year Ended 9/30/2015	-0.65%	11.25%	7.60%

(iii) Average Annual Payroll Growth

(a) Payroll as of:	10/1/2019	\$9,060,926
	10/1/2009	7,485,571
(b) Total Increase		21.05%
(c) Number of Years		10.00
(d) Average Annual Rate		1.93%

## 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.



Christine M. O'Neal, FSA, EA, MAAA  
Enrolled Actuary #17-7916

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	\$22,180,650
(2)	Sponsor Normal Cost developed as of October 1, 2018	1,695,343
(3)	Expected administrative expenses for the year ended September 30, 2019	53,508
(4)	Expected interest on (1), (2) and (3)	1,816,609
(5)	Sponsor contributions to the System during the year ended September 30, 2019	5,352,774
(6)	Expected interest on (5)	181,693
(7)	Expected Unfunded Actuarial Accrued Liability as of September 30, 2019 (1)+(2)+(3)+(4)-(5)-(6)	20,211,643
(8)	Change to UAAL due to Assumption Change	0
(9)	Change to UAAL due to Actuarial (Gain)/Loss	480,309
(10)	Unfunded Actuarial Accrued Liability as of October 1, 2019	20,691,952

Type of <u>Base</u>	Date <u>Established</u>	Years <u>Remaining</u>	10/1/2019 <u>Amount</u>	Amortization <u>Amount</u>
Consolidation	10/1/2018	12.5	20,218,627	2,381,184
Benefit	10/1/2018	14	(6,984)	(769)
Actuarial Loss	10/1/2019	15	<u>480,309</u>	<u>50,884</u>
			20,691,952	2,431,299

## DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of October 1, 2018	\$22,180,650
(2) Expected UAAL as of October 1, 2019	20,211,643
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	(34,616)
Salary Increases	252,968
Active Decrements	149,949
Inactive Mortality	313,418
Other	<u>(201,410)</u>
Increase in UAAL due to (Gain)/Loss	480,309
Assumption Changes	<u>0</u>
(4) Actual UAAL as of October 1, 2019	\$20,691,952

## 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

7.60% 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

<u>Credited Service</u>	<u>Assumed Rate</u>
Years 1-5	10.0%
Greater than 5 years	4.0%

These rates are based on the results of an experience study issued July 29, 2014.

<u>Payroll Growth</u>	0.00% for purposes of amortizing the Unfunded Actuarial Accrued Liability.	
<u>Administrative Expenses</u>	\$65,339 annually, based on the average of actual expenses incurred in the prior two fiscal years.	
<u>Amortization Method</u>	New UAAL bases are amortized over 15 years.	
<u>Termination Rates</u>	<u>Credited Service</u>	<u>Assumed Rate</u>
	First Year	6.0%
	Next 4 Years	3.0%
	Greater than 5 Years	2.0%
	These rates are based on the results of an experience study issued July 29, 2014.	
<u>Disability Rates</u>	It is assumed that 90% of disablements and active Member deaths are service related.	
	<u>Age</u>	<u>% Becoming Disabled During the Year</u>
	20	0.03%
	30	0.04
	40	0.07
	50	0.18
	These rates are consistent with rates used in other fire plans.	
<u>Retirement Age</u>	Earlier of Age 55 and 10 years of service or Age 50 and 25 years of service. Also, any member who has reached Normal Retirement is assumed to continue employment for one additional year. This assumption is deemed reasonable based on plan provisions and is supported by the July 29, 2014 experience study.	
<u>Early Retirement</u>	Commencing upon a member's eligibility for Early Retirement (Age 50 with 10 years of credited service), members are assumed to retire with an immediate subsidized benefit at the rate of 5% per year. This assumption is deemed reasonable based on plan provisions and is supported by the July 29, 2014 experience study.	
<u>Funding Method</u>	Entry Age Normal Actuarial Cost Method.	
<u>Asset Valuation Method</u>	Each year, the prior Actuarial Value of Assets is brought forward utilizing the historical geometric 4-year average Market Value return. It is possible that over time this technique will produce an insignificant bias above or below Market Value.	

## GLOSSARY

Total Annual Payroll is the projected annual rate of pay for the fiscal year following the valuation date of 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.

Normal (Current Year's) Cost is the current year's cost for benefits yet to be funded.

Unfunded Actuarial Accrued Liability (UAAL) is a liability which arises when a pension plan is initially established or improved and such establishment or improvement is applicable to all years of past service. Under the Entry Age Normal Actuarial Cost Method, there is also a new UAAL created each year equal to the actuarial gain or loss for that year.

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.
- Payroll Growth: The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll does not increase according to the plan's payroll growth assumption, the plan's amortization payment can increase significantly as a percentage of payroll even if all assumptions other than the payroll growth assumption are realized.
- 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 increased from 161.2% on October 1, 2016 to 173.2% on October 1, 2019, indicating that the plan has experienced a significant growth in active population.
- 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 58.6%.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has increased from 70.3% on October 1, 2016 to 78.5% on October 1, 2019, due to net favorable experience realized by the plan 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, increased from 0.9% on October 1, 2016 to 2.8% on October 1, 2019. The current Net Cash Flow Ratio of 2.8% indicates that contributions are generally in excess of 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	79	86	100	97
Total Inactives <sup>1</sup>	49	51	51	56
Actives / Inactives <sup>1</sup>	161.2%	168.6%	196.1%	173.2%

### Asset Volatility Ratio

Market Value of Assets (MVA)	56,829,901	64,902,949	70,794,857	73,803,033
Total Annual Payroll	7,182,291	7,791,232	8,918,131	9,060,926
MVA / Total Annual Payroll	791.3%	833.0%	793.8%	814.5%

### Accrued Liability (AL) Ratio

Inactive Accrued Liability	49,405,038	50,979,955	49,950,869	56,367,229
Total Accrued Liability (EAN)	82,795,896	87,199,617	90,365,008	96,220,206
Inactive AL / Total AL	59.7%	58.5%	55.3%	58.6%

### Funded Ratio

Actuarial Value of Assets (AVA)	58,186,756	63,400,968	68,184,358	75,528,254
Total Accrued Liability (EAN)	82,795,896	87,199,617	90,365,008	96,220,206
AVA / Total Accrued Liability (EAN)	70.3%	72.7%	75.5%	78.5%

### Net Cash Flow Ratio

Net Cash Flow <sup>2</sup>	537,970	724,597	259,835	2,047,621
Market Value of Assets (MVA)	56,829,901	64,902,949	70,794,857	73,803,033
Ratio	0.9%	1.1%	0.4%	2.8%

<sup>1</sup> Excludes terminated participants awaiting a refund of member contributions.

<sup>2</sup> 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	71,670.43	_____ %
1999	83,576.24	16.6%
2000	113,991.40	36.4%
2001	142,687.43	25.2%
2002	204,053.35	43.0%
2003	266,383.07	30.5%
2004	308,557.20	15.8%
2005	357,891.78	16.0%
2006	440,565.24	23.1%
2007	518,217.57	17.6%
2008	638,819.90	23.3%
2009	603,170.07	-5.6%
2010	525,706.56	-12.8%
2011	548,627.86	4.4%
2012	569,492.15	3.8%
2013	552,532.41	-3.0%
2014	583,891.66	5.7%
2015	585,583.85	0.3%
2016	567,161.77	-3.1%
2017	550,061.99	-3.0%
2018	554,750.22	0.9%
2019	736,951.41	32.8%

STATEMENT OF FIDUCIARY NET POSITION  
SEPTEMBER 30, 2019

<u>ASSETS</u>	COST VALUE	MARKET VALUE
Cash and Cash Equivalents:		
Short Term Investments	3,281,900.07	3,281,900.07
Total Cash and Equivalents	3,281,900.07	3,281,900.07
Receivables:		
Investment Income	23,020.71	23,020.71
Total Receivable	23,020.71	23,020.71
Investments:		
Stocks	9,992,680.01	12,761,440.46
Mutual Funds:		
Fixed Income	4,123,606.63	16,639,723.77
Equity	26,863,409.37	33,660,939.04
Pooled/Common/Commingled Funds:		
Real Estate	5,840,401.98	7,550,741.82
Total Investments	46,820,097.99	70,612,845.09
Total Assets	50,125,018.77	73,917,765.87
<u>LIABILITIES</u>		
Payables:		
Prepaid Member Contribution	21.04	21.04
Prepaid District Contribution	114,711.99	114,711.99
Total Liabilities	114,733.03	114,733.03
NET POSITION RESTRICTED FOR PENSIONS	50,010,285.74	73,803,032.84

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

**ADDITIONS**

Contributions:

Member	619,329.20
Buy-Back	59,882.24
District	4,615,822.39
State	736,951.41

Total Contributions	6,031,985.24
---------------------	--------------

Investment Income:

Net Realized Gain (Loss)	687,485.83
Unrealized Gain (Loss)	(1,099,437.06)
Net Increase in Fair Value of Investments	(411,951.23)
Interest & Dividends	1,750,014.61
Less Investment Expense <sup>1</sup>	(377,507.73)

Net Investment Income	960,555.65
-----------------------	------------

Total Additions	6,992,540.89
-----------------	--------------

**DEDUCTIONS**

Distributions to Members:

Benefit Payments	3,671,874.12
Lump Sum DROP Distributions	230,539.08
Refunds of Member Contributions	4,781.26

Total Distributions	3,907,194.46
---------------------	--------------

Administrative Expense	77,170.45
------------------------	-----------

Total Deductions	3,984,364.91
------------------	--------------

Net Increase in Net Position	3,008,175.98
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**NET POSITION RESTRICTED FOR PENSIONS**

Beginning of the Year	70,794,856.86
-----------------------	---------------

End of the Year	73,803,032.84
-----------------	---------------

<sup>1</sup>Investment 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 <sup>1</sup>	
09/30/2016	7.98%	
09/30/2017	12.82%	
09/30/2018	8.79%	
09/30/2019	1.34%	
Annualized Rate of Return for prior four (4) years:		7.65%
(A) 10/01/2018 Actuarial Assets:		\$68,184,358.09
(I) Net Investment Income:		
1. Interest and Dividends	1,750,014.61	
2. Realized Gains (Losses)	687,485.83	
3. Unrealized Gains (Losses)	(1,099,437.06)	
4. Change in Actuarial Value	4,335,720.19	
5. Investment Related Expenses	(377,507.73)	
Total		5,296,275.84
(B) 10/01/2019 Actuarial Assets:		\$75,528,254.26
Actuarial Asset Rate of Return = 2I/(A+B-I):		7.65%
10/01/2019 Limited Actuarial Assets:		\$75,528,254.26
10/01/2019 Market Value of Assets:		\$73,803,032.84
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)		\$34,616.18

<sup>1</sup>Market Value Basis, net of investment related expenses.

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

REVENUES

Contributions:		
Member	619,329.20	
Buy-Back	59,882.24	
District	4,615,822.39	
State	736,951.41	
Total Contributions		6,031,985.24
Earnings from Investments:		
Interest & Dividends	1,750,014.61	
Net Realized Gain (Loss)	687,485.83	
Unrealized Gain (Loss)	(1,099,437.06)	
Change in Actuarial Value	4,335,720.19	
Total Earnings and Investment Gains		5,673,783.57

EXPENDITURES

Distributions to Members:		
Benefit Payments	3,671,874.12	
Lump Sum DROP Distributions	230,539.08	
Refunds of Member Contributions	4,781.26	
Total Distributions		3,907,194.46
Expenses:		
Investment related <sup>1</sup>	377,507.73	
Administrative	77,170.45	
Total Expenses		454,678.18
Change in Net Assets for the Year		7,343,896.17
Net Assets Beginning of the Year		68,184,358.09
Net Assets End of the Year <sup>2</sup>		75,528,254.26

<sup>1</sup>Investment related expenses include investment advisory, custodial and performance monitoring fees.

<sup>2</sup>Net Assets may be limited for actuarial consideration.

DEFERRED RETIREMENT OPTION PLAN ACTIVITY  
October 1, 2018 to September 30, 2019

Beginning of the Year Balance	516,056.20
Plus Additions	1,238,078.50
Investment Return Earned	63,692.73
Less Distributions	(230,539.08)
End of the Year Balance	1,587,288.35

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

(1) Total Required Contribution Rate	67.5%
(2) Pensionable Payroll Derived from Member Contributions	\$8,847,560.00
(3) Total Required Contribution (1) x (2)	5,972,103.00
(4) Less Actual Member Contributions	(619,329.20)
(5) Less Allowable State Contribution	<u>(736,951.41)</u>
(6) Equals Required District Contribution for Fiscal 2019	4,615,822.39
(7) Less 2018 Prepaid Contribution	0.00
(8) Less Actual District Contributions	<u>(4,730,534.38)</u>
(9) Equals District's Shortfall/(Prepaid) Contribution as of September 30, 2019	(\$114,711.99)

## 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	79	86	100	97
Average Current Age	39.8	39.1	38.9	39.5
Average Age at Employment	28.5	28.2	28.8	29.2
Average Past Service	11.3	10.9	10.1	10.3
Average Annual Salary	\$90,915	\$90,596	\$89,181	\$93,412
<u>Service Retirees</u>				
Number	37	40	43	44
Average Current Age	57.9	58.6	59.6	60.6
Average Annual Benefit	\$76,053	\$78,035	\$83,411	\$84,759
<u>DROP Retirees</u>				
Number	7	5	2	4
Average Current Age	57.6	57.0	55.3	53.7
Average Annual Benefit	\$85,564	\$94,633	\$76,051	\$85,716
<u>Beneficiaries</u>				
Number	2	2	2	2
Average Current Age	67.7	68.7	69.7	70.7
Average Annual Benefit	\$22,961	\$22,961	\$22,961	\$22,961
<u>Disability Retirees</u>				
Number	1	2	2	3
Average Current Age	51.6	48.4	49.4	49.2
Average Annual Benefit	\$42,149	\$41,134	\$41,134	\$43,000
<u>Terminated Vested</u>				
Number	3	3	4	7
Average Current Age <sup>1</sup>	40.1	41.1	44.9	44.7
Average Annual Benefit <sup>2</sup>	\$28,575	\$28,575	\$28,575	\$35,233

<sup>1</sup> Effective 10/1/2018, the Average Current Age excludes participants awaiting a refund of contributions.

<sup>2</sup> 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	0	0	0	0	0	0	0	0	0	0	0
20 - 24	1	0	1	0	0	0	0	0	0	0	0	2
25 - 29	0	2	6	0	0	2	0	0	0	0	0	10
30 - 34	0	2	4	1	2	3	3	0	0	0	0	15
35 - 39	2	0	4	1	1	4	11	1	0	0	0	24
40 - 44	0	0	4	0	0	1	9	2	0	0	0	16
45 - 49	0	1	0	0	0	0	3	13	0	3	0	20
50 - 54	0	0	0	0	1	1	1	2	1	0	1	7
55 - 59	0	0	0	0	0	0	0	1	1	0	0	2
60 - 64	1	0	0	0	0	0	0	0	0	0	0	1
65+	0	0	0	0	0	0	0	0	0	0	0	0
Total	4	5	19	2	4	11	27	19	2	3	1	97

## VALUATION PARTICIPANT RECONCILIATION

### 1. Active lives

a. Number in prior valuation 10/1/2018	100
b. Terminations	
i. Vested (partial or full) with deferred annuity	(1)
ii. Vested in refund of member contributions only	(1)
iii. Refund of member contributions or full lump sum distribution received	(1)
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	(1)
e. Retired	0
f. DROP	(3)
g. Continuing participants	93
h. New entrants	4
i. Total active life participants in valuation	97

### 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)	Total
a. Number prior valuation	43	2	2	2	2	2	53
Retired	1	(1)	0	0	0	0	0
DROP	0	3	0	0	0	0	3
Vested (Deferred Annuity)	0	0	0	0	1	0	1
Vested (Due Refund)	0	0	0	0	0	1	1
Hired/Terminated in Same Year	0	0	0	0	0	1	1
Death, With Survivor	0	0	0	0	0	0	0
Death, No Survivor	0	0	0	0	0	0	0
Disabled	0	0	0	1	0	0	1
Refund of Contributions	0	0	0	0	0	0	0
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	44	4	2	3	3	4	60

## SUMMARY OF CURRENT PLAN (Through Resolution No. 19-01-14)

<u>Latest Amendment Date</u>	January 14, 2019
<u>Eligibility</u>	Full-time employees who are classified as full-time Firefighters shall participate in the System as a condition of employment.
<u>Credited Service</u>	Total years and fractional parts of years of service as a Firefighter with the District.
<u>Salary</u>	Basic compensation, including incentive pay and longevity pay, plus tax deferred and tax-exempt items of income.
<u>Average Final Compensation</u>	Average Salary for the highest 5 years during the 10 years immediately preceding retirement or termination.
<u>Member Contributions</u>	7.00% of Salary.
District and State <u>Contributions</u>	Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, as provided in Chapter 112, <u>Florida Statutes</u> . In no event will the District's contribution be less than 15% of the Members' Salary.
<u>Normal Retirement</u>	
Date	Earlier of age 55 and 10 years of Credited Service, or age 50 and 25 years of Credited Service.
Benefit	3.58% (3.00% for Firefighters hired after June 1, 2010) of Average Final Compensation <u>times</u> Credited Service
Form of Benefit	Ten Year Certain and Life Annuity (options available).
<u>Early Retirement</u>	
Eligibility	Age 50 and 10 Years of Credited Service.
Benefit	Accrued benefit, reduced 3% per year.

Cost of Living Adjustment

Normal and Early Service Retirees after January 1, 2000 receive 3% annual benefit increases for 17 years (12 years for Firefighters hired after June 1, 2010), commencing 1 year after retirement.

Vesting

Schedule

100% after 10 years of Credited Service.

Benefit Amount

Member will receive the vested portion of his (her) accrued benefit payable at the otherwise Normal Retirement Date.

Disability

Eligibility

Service Incurred

Covered from Date of Employment.

Non-Service Incurred

10 years of Credited Service.

Exclusions

Disability resulting from use of drugs, illegal participation in riots, service in military, etc.

Benefit

Benefit accrued to date of disability but not less than 42% of Average Final Compensation (Service Incurred).

Duration

Payable for life (with 120 payments guaranteed), or until recovery (as determined by the Board). Optional forms of payment available.

Death Benefits

Pre-Retirement

Vested

Monthly accrued benefit payable to designated beneficiary for 10 years.

Non-Vested

Refund of accumulated contributions without interest.

Post-Retirement

Benefits payable to beneficiary in accordance with option selected at retirement.

Board of Trustees

- a. Two District appointees,
- b. Two Members of the Department elected by the membership, and
- c. Fifth Member elected by other 4 and appointed by the District.

### Deferred Retirement Option Plan

Eligibility	Satisfaction of Normal Retirement requirements (earlier of (1) Age 55 with 10 years of Credited Service, or (2) Age 50 with 25 years of Credited Service).
Participation	Not to exceed 60 months.
Rate of Return	At the Member's election: (1) 6.5% annual rate, or (2) actual net rate of investment return (total return net of brokerage commissions, management fees, and transaction costs), credited each fiscal quarter. One change between the above is allowed.
Form of Distribution	Cash lump sum (options available) at termination of employment.

### Chapter 175 Share Accounts

Effective March 1, 2010, a share plan was established pursuant to Chapter 175, Florida Statutes.

For plan years on or after October 1, 2009, all premium tax revenues received by the District in excess of \$1,000,155 shall be allocated to the participants' share accounts as follows:

- Members employed on preceding September 30 receive one share for each month of credited service.
- Interest equal to the System's actual net rate of investment return for the preceding plan year is credited each January 1.

STATEMENT OF FIDUCIARY NET POSITION  
SEPTEMBER 30, 2019

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Short Term Investments	3,281,900
Total Cash and Equivalents	3,281,900
Receivables:	
Investment Income	23,021
Total Receivable	23,021
Investments:	
Stocks	12,761,440
Mutual Funds:	
Fixed Income	16,639,724
Equity	33,660,939
Pooled/Common/Commingled Funds:	
Real Estate	7,550,742
Total Investments	70,612,845
Total Assets	73,917,766
Total Liabilities	0
NET POSITION RESTRICTED FOR PENSIONS	73,917,766

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

ADDITIONS

## Contributions:

Member	619,281	
Buy-Back	59,882	
District	4,730,535	
State	736,952	
Total Contributions		6,146,650
Investment Income:		
Net Increase in Fair Value of Investments	(411,952)	
Interest & Dividends	1,750,015	
Less Investment Expense <sup>1</sup>	(377,508)	
Net Investment Income		960,555
Total Additions		7,107,205

DEDUCTIONS

## Distributions to Members:

Benefit Payments	3,671,874	
Lump Sum DROP Distributions	230,539	
Lump Sum Share Distributions	0	
Refunds of Member Contributions	4,781	
Total Distributions		3,907,194
Administrative Expense		77,171
Total Deductions		3,984,365
Net Increase in Net Position		3,122,840
NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		70,794,926
End of the Year		73,917,766

<sup>1</sup>Investment 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. Two District appointees,
- b. Two Members of the Department elected by the Membership, and a
- c. Fifth Member elected by other four and appointed by the District.

### *Plan Membership as of October 1, 2018:*

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	49
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	4
Active Plan Members	100
	153

### *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 Bonita Springs Fire Control and Rescue District Firefighter's Retirement System 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*

Member Contributions: 7.0% of Salary.

District and State Contributions: Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, as provided in Chapter 112, Florida Statutes. In no event will the District's contribution be less than 15% of the Member's Salary.

### *Investments*

#### *Investment Policy:*

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

Asset Class	Target Allocation
Domestic Equity	45.0%
International Equity	15.0%
Domestic Fixed Income	20.0%
Global Fixed Income	5.0%
Real Estate	10.0%
GTAA	5.0%
Total	100.0%

### *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 1.34 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: Satisfaction of Normal Retirement requirements (earlier of (1) Age 55 with 10 years of Credited Service, or (2) Age 50 with 25 years of Credited Service).

Participation: Not to exceed 60 months.

Rate of Return: At the Member's election: (1) 6.5% annual rate, or (2) actual net rate of investment return (total return net of brokerage commissions, management fees, and transaction costs), credited each fiscal quarter. One change between the above is allowed.

The DROP balance as September 30, 2019 is \$1,587,288.

## 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	\$ 95,450,447
Plan Fiduciary Net Position	\$ (73,917,766)
Sponsor's Net Pension Liability	<u>\$ 21,532,681</u>
Plan Fiduciary Net Position as a percentage of Total Pension Liability	77.44%

*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	4.00% -10.00%
Discount Rate	7.60%
Investment Rate of Return	7.60%

*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 assumption 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, 2016 FRS actuarial valuation report for non-special risk lives. We feel this assumption sufficiently accommodates future mortality improvements.

The most recent actuarial experience study used to review the other significant assumptions was dated July 29, 2014.

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
Domestic Equity	7.50%
International Equity	8.50%
Domestic Fixed Income	2.50%
Global Fixed Income	3.50%
Real Estate	4.50%
GTAA	3.50%

Discount Rate:  
The Discount Rate used to measure the Total Pension Liability was 7.60 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	Current	1% Increase
	6.60%	Discount Rate	8.60%
		7.60%	
Sponsor's Net Pension Liability	\$ 34,013,419	\$ 21,532,681	\$ 11,196,835

**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	2,349,475	2,058,200	1,894,366
Interest	6,872,486	6,529,798	6,209,826
Changes of benefit terms	(7,100)	-	-
Differences between Expected and Actual Experience	44,227	338,549	717,752
Changes of assumptions	-	-	-
Contributions - Buy Back	59,882	9,381	30,487
Benefit Payments, including Refunds of Employee Contributions	(3,907,194)	(5,514,912)	(4,097,287)
Net Change in Total Pension Liability	5,411,777	3,421,016	4,755,144
Total Pension Liability - Beginning	90,038,670	86,617,654	81,862,510
Total Pension Liability - Ending (a)	<u>\$ 95,450,447</u>	<u>\$ 90,038,670</u>	<u>\$ 86,617,654</u>
Plan Fiduciary Net Position			
Contributions - Employer	4,730,535	4,674,658	3,811,896
Contributions - State	736,952	554,750	550,062
Contributions - Employee	619,281	589,466	517,520
Contributions - Buy Back	59,882	9,381	30,487
Net Investment Income	960,555	5,632,073	7,317,964
Benefit Payments, including Refunds of Employee Contributions	(3,907,194)	(5,514,912)	(4,097,287)
Administrative Expense	(77,171)	(53,508)	(57,594)
Net Change in Plan Fiduciary Net Position	3,122,840	5,891,908	8,073,048
Plan Fiduciary Net Position - Beginning	70,794,926	64,903,018	56,829,970
Plan Fiduciary Net Position - Ending (b)	<u>\$ 73,917,766</u>	<u>\$ 70,794,926</u>	<u>\$ 64,903,018</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 21,532,681</u>	<u>\$ 19,243,744</u>	<u>\$ 21,714,636</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	77.44%	78.63%	74.93%
Covered Payroll <sup>1</sup>	\$ 8,847,560	\$ 8,420,947	\$ 7,393,149
Net Pension Liability as a percentage of Covered Payroll	243.37%	228.52%	293.71%

**Notes to Schedule:**

<sup>1</sup> The Covered Payroll numbers shown are in compliance with GASB 82.

*Changes of 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.

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

	09/30/2016	09/30/2015	09/30/2014
Total Pension Liability			
Service Cost	1,796,100	1,726,781	1,697,295
Interest	5,729,223	5,464,090	5,118,393
Changes of benefit terms	-	-	-
Differences between Expected and Actual Experience	838,022	(535,327)	-
Changes of assumptions	1,954,103	-	-
Contributions - Buy Back	21,106	2,982	-
Benefit Payments, including Refunds of Employee Contributions	(4,128,916)	(2,349,598)	(2,243,450)
Net Change in Total Pension Liability	6,209,638	4,308,928	4,572,238
Total Pension Liability - Beginning	75,652,872	71,343,944	66,771,706
Total Pension Liability - Ending (a)	<u>\$ 81,862,510</u>	<u>\$ 75,652,872</u>	<u>\$ 71,343,944</u>
Plan Fiduciary Net Position			
Contributions - Employer	3,656,157	3,786,822	3,565,486
Contributions - State	567,162	585,584	583,892
Contributions - Employee	477,667	463,616	436,385
Contributions - Buy Back	21,106	2,982	-
Net Investment Income	4,136,912	(329,845)	4,736,538
Benefit Payments, including Refunds of Employee Contributions	(4,128,916)	(2,349,598)	(2,243,450)
Administrative Expense	(34,030)	(47,681)	(38,532)
Net Change in Plan Fiduciary Net Position	4,696,058	2,111,880	7,040,319
Plan Fiduciary Net Position - Beginning	52,133,912	50,022,032	42,981,713
Plan Fiduciary Net Position - Ending (b)	<u>\$ 56,829,970</u>	<u>\$ 52,133,912</u>	<u>\$ 50,022,032</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 25,032,540</u>	<u>\$ 23,518,960</u>	<u>\$ 21,321,912</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	69.42%	68.91%	70.11%
Covered Payroll <sup>1</sup>	\$ 6,822,809	\$ 8,193,018	\$ 6,111,013
Net Pension Liability as a percentage of Covered Payroll	366.89%	287.06%	348.91%

**Notes to Schedule:**

<sup>1</sup> 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 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 CONTRIBUTIONS

Last 10 Fiscal Years

Fiscal Year Ended	Actuarially Determined Contribution	Contributions in relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll <sup>1</sup>	Contributions as a percentage of Covered Payroll
09/30/2019	\$ 5,352,774	\$ 5,467,486	\$ (114,712)	\$ 8,847,560	61.80%
09/30/2018	\$ 5,229,408	\$ 5,229,408	\$ -	\$ 8,420,947	62.10%
09/30/2017	\$ 4,361,958	\$ 4,361,958	\$ -	\$ 7,393,149	59.00%
09/30/2016	\$ 4,223,319	\$ 4,223,319	\$ -	\$ 6,822,809	61.90%
09/30/2015	\$ 4,372,406	\$ 4,372,406	\$ -	\$ 8,193,018	53.37%
09/30/2014	\$ 4,149,378	\$ 4,149,378	\$ -	\$ 6,111,013	67.90%

<sup>1</sup> 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 Rates:

*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, Scale BB / 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.

## Termination Rates:

Credited Service	Assumed Rate
First Year	6.0%
Next 4 Years	3.0%
Greater than 5 Years	2.0%

These rates are based on the results of an experience study issued July 29, 2014.

## Disability Rates:

See Table below. It is assumed that 75% of disablements and active Member deaths are service related.

Age	% Becoming Disabled During the Year
20	0.03%
30	0.04%
40	0.07%
50	0.18%

These rates are consistent with rates used in other fire plans.

## Retirement Age:

Earlier of Age 55 and 10 years of service or Age 50 and 25 years of service. Also, any member who has reached Normal Retirement is assumed to continue employment for one additional year. This assumption is deemed reasonable based on plan provisions and is supported by the July 29, 2014 experience study.

## Early Retirement:

Commencing upon a member's eligibility for Early Retirement (Age 50 with 10 years of credited service), members are assumed to retire with an immediate subsidized benefit at the rate of 5% per year. This assumption is deemed reasonable based on plan provisions and is supported by the July 29, 2014 experience study.

## Interest Rate:

7.6% per year, compounded annually, net of investment related expenses. This is supported by the target asset class allocation of the trust and the expected long-term return by asset class.

## Salary Increases:

Credited Service	Assumed Rate
Years 1-5	10.0%
Greater than 5 years	4.0%

These rates are based on the results of an experience study issued July 29, 2014.

## Payroll Increase:

1.08% per year. This assumption is limited historical 10- year payroll growth.

## Funding Method:

Entry Age Normal Actuarial Cost Method.

## Asset Valuation Method:

Each year, the prior Actuarial Value of Assets is brought forward utilizing the historical geometric 4-year average Market Value return. It is possible that over time this technique will produce an insignificant bias above or below Market Value.

**SCHEDULE OF INVESTMENT RETURNS**  
Last 10 Fiscal Years

Fiscal Year Ended	Annual Money-Weighted Rate of Return Net of Investment Expense
09/30/2019	1.34%
09/30/2018	8.79%
09/30/2017	12.82%
09/30/2016	7.98%
09/30/2015	-0.65%
09/30/2014	10.81%

## NOTES TO THE FINANCIAL STATEMENTS

(For the Year Ended September 30, 2020)

## General Information about the Pension Plan

*Plan Description*

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

- a. Two District appointees,
- b. Two Members of the Department elected by the Membership, and a
- c. Fifth Member elected by other four and appointed by the District.

Full-time employees who are classified as full-time Firefighters shall participate in the System as a condition of employment.

*Plan Membership as of October 1, 2018:*

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	49
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	4
Active Plan Members	100
	<u>153</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 Bonita Springs Fire Control and Rescue District Firefighter's Retirement System 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*

Member Contributions: 7.0% of Salary.

District and State Contributions: Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, as provided in Chapter 112, Florida Statutes. In no event will the District's contribution be less than 15% of the Member's Salary.

## 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, 2019 through September 30, 2020.

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	4.00% -10.00%
Discount Rate	7.60%
Investment Rate of Return	7.60%

*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 assumption 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, 2016 FRS actuarial valuation report for non-special risk lives. We feel this assumption sufficiently accommodates future mortality improvements.

The most recent actuarial experience study used to review the other significant assumptions was dated July 29, 2014.

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
Domestic Equity	45.0%	7.50%
International Equity	15.0%	8.50%
Domestic Fixed Income	20.0%	2.50%
Global Fixed Income	5.0%	3.50%
Real Estate	10.0%	4.50%
GTAA	5.0%	3.50%
Total	100.0%	

*Discount Rate:*

The Discount Rate used to measure the Total Pension Liability was 7.60 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)
Reporting Period Ending September 30, 2019	\$ 90,038,670	\$ 70,794,926	\$ 19,243,744
Changes for a Year:			
Service Cost	2,349,475	-	2,349,475
Interest	6,872,486	-	6,872,486
Differences between Expected and Actual Experience	44,227	-	44,227
Changes of assumptions	-	-	-
Changes of benefit terms	(7,100)	-	(7,100)
Contributions - Employer	-	4,730,535	(4,730,535)
Contributions - State	-	736,952	(736,952)
Contributions - Employee	-	619,281	(619,281)
Contributions - Buy Back	59,882	59,882	-
Net Investment Income	-	960,555	(960,555)
Benefit Payments, including Refunds of Employee Contributions	(3,907,194)	(3,907,194)	-
Administrative Expense	-	(77,171)	77,171
Net Changes	5,411,777	3,122,840	2,288,937
Reporting Period Ending September 30, 2020	\$ 95,450,447	\$ 73,917,766	\$ 21,532,681

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

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.60%	7.60%	8.60%
Sponsor's Net Pension Liability	\$ 34,013,419	\$ 21,532,681	\$ 11,196,835

*Pension Plan Fiduciary Net Position.*

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

**FINAL PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED  
INFLOWS OF RESOURCES RELATED TO PENSIONS**  
FISCAL YEAR SEPTEMBER 30, 2019

For the year ended September 30, 2019, the Sponsor has recognized a Pension Expense of \$3,398,131.

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	1,281,732	267,664
Changes of assumptions	1,116,632	-
Net difference between Projected and Actual Earnings on Pension Plan investments	-	1,550,306
Employer and State contributions subsequent to the measurement date	5,467,487	-
Total	<u>7,865,851</u>	<u>\$ 1,817,970</u>

The outcome of the Deferred Outflows of resources related to pensions resulting from Employer and State contributions subsequent to the measurement date has been recognized as a reduction of the Net Pension Liability in the year ended September 30, 2019.

Other 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	\$ 565,070
2021	\$ (279,791)
2022	\$ (249,094)
2023	\$ 344,945
2024	\$ 150,900
Thereafter	\$ 48,364

**Payable to the Pension Plan**

On September 30, 2018, the Sponsor reported a payable of \$110,517 for the outstanding amount of contributions of the Pension Plan required for the year ended September 30, 2018.

**PRELIMINARY PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND  
DEFERRED INFLOWS OF RESOURCES RELATED TO PENSIONS  
FISCAL YEAR SEPTEMBER 30, 2020**

For the year ended September 30, 2020, the Sponsor will recognize a Pension Expense of \$4,681,177.

On September 30, 2020, 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	1,049,811	200,748
Changes of assumptions	837,474	-
Net difference between Projected and Actual Earnings on Pension Plan investments	1,969,103	-
Employer and State contributions subsequent to the measurement date	TBD	-
Total	<u>TBD</u>	<u>\$ 200,748</u>

The outcome of the Deferred Outflows of resources related to pensions resulting from Employer and State contributions subsequent to the measurement date will be recognized as a reduction of the Net Pension Liability in the year ended September 30, 2020.

Other 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:	
2021	\$ 626,142
2022	\$ 656,839
2023	\$ 1,250,878
2024	\$ 1,056,833
2025	\$ 53,892
Thereafter	\$ 11,056

# SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

## Last 10 Fiscal Years

Reporting Period Ending Measurement Date	09/30/2020 09/30/2019	09/30/2019 09/30/2018	09/30/2018 09/30/2017
Total Pension Liability			
Service Cost	2,349,475	2,058,200	1,894,366
Interest	6,872,486	6,529,798	6,209,826
Changes of benefit terms	(7,100)	-	-
Differences between Expected and Actual Experience	44,227	338,549	717,752
Changes of assumptions	-	-	-
Contributions - Buy Back	59,882	9,381	30,487
Benefit Payments, including Refunds of Employee Contributions	(3,907,194)	(5,514,912)	(4,097,287)
Net Change in Total Pension Liability	5,411,777	3,421,016	4,755,144
Total Pension Liability - Beginning	90,038,670	86,617,654	81,862,510
Total Pension Liability - Ending (a)	<u>\$ 95,450,447</u>	<u>\$ 90,038,670</u>	<u>\$ 86,617,654</u>
Plan Fiduciary Net Position			
Contributions - Employer	4,730,535	4,674,658	3,811,896
Contributions - State	736,952	554,750	550,062
Contributions - Employee	619,281	589,466	517,520
Contributions - Buy Back	59,882	9,381	30,487
Net Investment Income	960,555	5,632,073	7,317,964
Benefit Payments, including Refunds of Employee Contributions	(3,907,194)	(5,514,912)	(4,097,287)
Administrative Expense	(77,171)	(53,508)	(57,594)
Net Change in Plan Fiduciary Net Position	3,122,840	5,891,908	8,073,048
Plan Fiduciary Net Position - Beginning	70,794,926	64,903,018	56,829,970
Plan Fiduciary Net Position - Ending (b)	<u>\$ 73,917,766</u>	<u>\$ 70,794,926</u>	<u>\$ 64,903,018</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 21,532,681</u>	<u>\$ 19,243,744</u>	<u>\$ 21,714,636</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	77.44%	78.63%	74.93%
Covered Payroll <sup>1</sup>	\$ 8,847,560	\$ 8,420,947	\$ 7,393,149
Net Pension Liability as a percentage of Covered Payroll	243.37%	228.52%	293.71%

### **Notes to Schedule:**

<sup>1</sup> The Covered Payroll numbers shown are in compliance with GASB 82.

#### *Changes of 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.

# SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

## Last 10 Fiscal Years

Reporting Period Ending Measurement Date	09/30/2017 09/30/2016	09/30/2016 09/30/2015	09/30/2015 09/30/2014
Total Pension Liability			
Service Cost	1,796,100	1,726,781	1,697,295
Interest	5,729,223	5,464,090	5,118,393
Changes of benefit terms	-	-	-
Differences between Expected and Actual Experience	838,022	(535,327)	-
Changes of assumptions	1,954,103	-	-
Contributions - Buy Back	21,106	2,982	-
Benefit Payments, including Refunds of Employee Contributions	(4,128,916)	(2,349,598)	(2,243,450)
Net Change in Total Pension Liability	6,209,638	4,308,928	4,572,238
Total Pension Liability - Beginning	75,652,872	71,343,944	66,771,706
Total Pension Liability - Ending (a)	<u>\$ 81,862,510</u>	<u>\$ 75,652,872</u>	<u>\$ 71,343,944</u>
Plan Fiduciary Net Position			
Contributions - Employer	3,656,157	3,786,822	3,565,486
Contributions - State	567,162	585,584	583,892
Contributions - Employee	477,667	463,616	436,385
Contributions - Buy Back	21,106	2,982	-
Net Investment Income	4,136,912	(329,845)	4,736,538
Benefit Payments, including Refunds of Employee Contributions	(4,128,916)	(2,349,598)	(2,243,450)
Administrative Expense	(34,030)	(47,681)	(38,532)
Net Change in Plan Fiduciary Net Position	4,696,058	2,111,880	7,040,319
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Plan Fiduciary Net Position - Ending (b)	<u>\$ 56,829,970</u>	<u>\$ 52,133,912</u>	<u>\$ 50,022,032</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 25,032,540</u>	<u>\$ 23,518,960</u>	<u>\$ 21,321,912</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	69.42%	68.91%	70.11%
Covered Payroll <sup>1</sup>	\$ 6,822,809	\$ 8,193,018	\$ 6,111,013
Net Pension Liability as a percentage of Covered Payroll	366.89%	287.06%	348.91%

**Notes to Schedule:**

<sup>1</sup> 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 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 CONTRIBUTIONS

### Last 10 Fiscal Years

Fiscal Year Ended	Actuarially Determined Contribution	Contributions in relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll <sup>1</sup>	Contributions as a percentage of Covered Payroll
09/30/2019	\$ 5,352,774	\$ 5,467,486	\$ (114,712)	\$ 8,847,560	61.80%
09/30/2018	\$ 5,229,408	\$ 5,229,408	\$ -	\$ 8,420,947	62.10%
09/30/2017	\$ 4,361,958	\$ 4,361,958	\$ -	\$ 7,393,149	59.00%
09/30/2016	\$ 4,223,319	\$ 4,223,319	\$ -	\$ 6,822,809	61.90%
09/30/2015	\$ 4,372,406	\$ 4,372,406	\$ -	\$ 8,193,018	53.37%
09/30/2014	\$ 4,149,378	\$ 4,149,378	\$ -	\$ 6,111,013	67.90%

<sup>1</sup> 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 Rates:

##### *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, Scale BB / 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

#### Termination Rates:

Credited Service	Assumed Rate
First Year	6.00%
Next 4 Years	3.00%
Greater than 5 Years	2.00%

These rates are based on the results of an experience study issued July 29, 2014.

## Disability Rates:

See Table below. It is assumed that 75% of disablements and active Member deaths are service related.

Age	% Becoming Disabled During the Year
20	0.03%
30	0.04%
40	0.07%
50	0.18%

These rates are consistent with rates used in other fire plans.

## Retirement Age:

Earlier of Age 55 and 10 years of service or Age 50 and 25 years of service. Also, any member who has reached Normal Retirement is assumed to continue employment for one additional year. This assumption is deemed reasonable based on plan provisions and is supported by the July 29, 2014 experience study.

## Early Retirement:

Commencing upon a member's eligibility for Early Retirement (Age 50 with 10 years of credited service), members are assumed to retire with an immediate subsidized benefit at the rate of 5% per year. This assumption is deemed reasonable based on plan provisions and is supported by the July 29, 2014 experience study.

## Interest Rate:

7.6% per year, compounded annually, net of investment related expenses. This is supported by the target asset class allocation of the trust and the expected long-term return by asset class.

## Salary Increases:

Credited Service	Assumed Rate
Years 1-5	10.0%
Greater than 5 years	4.0%

These rates are based on the results of an experience study issued July 29, 2014.

## Payroll Increase:

1.08% per year. This assumption is limited historical 10- year payroll growth.

## Funding Method:

Entry Age Normal Actuarial Cost Method.

## Asset Valuation Method:

Each year, the prior Actuarial Value of Assets is brought forward utilizing the historical geometric 4-year average Market Value return. It is possible that over time this technique will produce an insignificant bias above or below Market Value.

## EXPENSE DEVELOPMENT AND AMORTIZATION SCHEDULES

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

FINAL COMPONENTS OF PENSION EXPENSE  
FISCAL YEAR SEPTEMBER 30, 2019

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning balance	\$ 21,714,636	\$ 3,079,304	\$ 9,528,721	\$ -
Employer and State Contributions made after 09/30/2018	-	-	5,467,487	-
Total Pension Liability Factors:				
Service Cost	2,058,200	-	-	2,058,200
Interest	6,529,798	-	-	6,529,798
Changes in benefit terms	-	-	-	-
Contributions - Buy Back	9,381	-	-	9,381
Differences between Expected and Actual Experience with regard to economic or demographic assumptions	338,549	-	338,549	-
Current year amortization of experience difference	-	(66,916)	(270,619)	203,703
Change in assumptions about future economic or demographic factors or other inputs	-	-	-	-
Current year amortization of change in assumptions	-	-	(279,157)	279,157
Benefit Payments, including Refunds of Employee Contributions	(5,514,912)	-	-	-
Net change	<u>3,421,016</u>	<u>(66,916)</u>	<u>5,256,260</u>	<u>9,080,239</u>
Plan Fiduciary Net Position:				
Contributions - Employer	4,674,658	-	(4,674,658)	-
Contributions - State	554,750	-	(554,750)	-
Contributions - Employee	589,466	-	-	(589,466)
Contributions - Buy Back	9,381	-	-	(9,381)
Projected Net Investment Income	4,942,503	-	-	(4,942,503)
Difference between projected and actual earnings on Pension Plan investments	689,570	689,570	-	-
Current year amortization	-	(1,039,127)	(844,861)	(194,266)
Benefit Payments, including Refunds of Employee Contributions	(5,514,912)	-	-	-
Administrative Expenses	(53,508)	-	-	53,508
Net change	<u>5,891,908</u>	<u>(349,557)</u>	<u>(6,074,269)</u>	<u>(5,682,108)</u>
Ending Balance	<u><u>\$ 19,243,744</u></u>	<u><u>\$ 2,662,831</u></u>	<u><u>\$ 8,710,712</u></u>	<u><u>\$ 3,398,131</u></u>

**PRELIMINARY COMPONENTS OF PENSION EXPENSE**  
**FISCAL YEAR SEPTEMBER 30, 2020**

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning balance	\$ 19,243,744	\$ 2,662,831	\$ 8,710,712	\$ -
Employer and State Contributions made after 09/30/2019	-	-	TBD*	-
Total Pension Liability Factors:				
Service Cost	2,349,475	-	-	2,349,475
Interest	6,872,486	-	-	6,872,486
Changes in benefit terms	(7,100)	-	-	(7,100)
Contributions - Buy Back	59,882	-	-	59,882
Differences between Expected and Actual Experience with regard to economic or demographic assumptions	44,227	-	44,227	-
Current year amortization of experience difference	-	(66,916)	(276,148)	209,232
Change in assumptions about future economic or demographic factors or other inputs	-	-	-	-
Current year amortization of change in assumptions	-	-	(279,158)	279,158
Benefit Payments, including Refunds of Employee Contributions	(3,907,194)	-	-	-
Net change	<u>5,411,777</u>	<u>(66,916)</u>	<u>(511,079)</u>	<u>9,763,133</u>
Plan Fiduciary Net Position:				
Contributions - Employer	4,730,535	-	(4,730,535)	-
Contributions - State	736,952	-	(736,952)	-
Contributions - Employee	619,281	-	-	(619,281)
Contributions - Buy Back	59,882	-	-	(59,882)
Projected Net Investment Income	5,462,581	-	-	(5,462,581)
Difference between projected and actual earnings on Pension Plan investments	(4,502,026)	-	4,502,026	-
Current year amortization	-	(762,650)	(1,745,267)	982,617
Benefit Payments, including Refunds of Employee Contributions	(3,907,194)	-	-	-
Administrative Expenses	(77,171)	-	-	77,171
Net change	<u>3,122,840</u>	<u>(762,650)</u>	<u>(2,710,728)</u>	<u>(5,081,956)</u>
Ending Balance	<u><u>\$ 21,532,681</u></u>	<u><u>\$ 1,833,265</u></u>	<u><u>TBD</u></u>	<u><u>\$ 4,681,177</u></u>

\* Employer and State Contributions subsequent to the measurement date made after September 30, 2019 but made on or before September 30, 2020 need to be added.

## 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	\$ 4,502,026	5	\$ -	\$ 900,406	\$ 900,405	\$ 900,405	\$ 900,405	\$ 900,405	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ (689,570)	5	\$ (137,914)	\$ (137,914)	\$ (137,914)	\$ (137,914)	\$ (137,914)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ (2,970,193)	5	\$ (594,039)	\$ (594,039)	\$ (594,039)	\$ (594,039)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ (153,487)	5	\$ (30,697)	\$ (30,697)	\$ (30,697)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 4,224,305	5	\$ 844,861	\$ 844,861	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2014	\$ (1,382,384)	5	\$ (276,477)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ (194,266)	\$ 982,617	\$ 137,755	\$ 168,452	\$ 762,491	\$ 900,405	\$ -	\$ -	\$ -	\$ -	\$ -

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
2016	\$ 1,954,103	7	\$ 279,157	\$ 279,158	\$ 279,158	\$ 279,158	\$ 279,158	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 279,157	\$ 279,158	\$ 279,158	\$ 279,158	\$ 279,158	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

## 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)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2019	\$ 44,227	8	\$ -	\$ 5,531	\$ 5,528	\$ 5,528	\$ 5,528	\$ 5,528	\$ 5,528	\$ 5,528	\$ 5,528	\$ -	\$ -
2018	\$ 338,549	7	\$ 48,365	\$ 48,364	\$ 48,364	\$ 48,364	\$ 48,364	\$ 48,364	\$ 48,364	\$ -	\$ -	\$ -	\$ -
2017	\$ 717,752	7	\$ 102,536	\$ 102,536	\$ 102,536	\$ 102,536	\$ 102,536	\$ 102,536	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ 838,022	7	\$ 119,718	\$ 119,717	\$ 119,717	\$ 119,717	\$ 119,717	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ (535,327)	8	\$ (66,916)	\$ (66,916)	\$ (66,916)	\$ (66,916)	\$ (66,916)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 203,703	\$ 209,232	\$ 209,229	\$ 209,229	\$ 209,229	\$ 156,428	\$ 53,892	\$ 5,528	\$ 5,528	\$ -	\$ -