

CITY OF HALLANDALE BEACH
POLICE OFFICERS' AND FIREFIGHTERS' PERSONNEL RETIREMENT TRUST

ACTUARIAL VALUATION
AS OF OCTOBER 1, 2019
(Revised March 10, 2020)

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

March 10, 2020

Board of Trustees
City of Hallandale Beach
Firefighters and Police Officers' Pension Board

Re: City of Hallandale Beach Police Officers' and Firefighters' Personnel Retirement Trust

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Hallandale Beach Police Officers' and Firefighters' Personnel Retirement Trust. 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 Hallandale Beach, 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 Hallandale Beach, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Police Officers' and Firefighters' Personnel Retirement Trust. 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,

By: 

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

By: 

Sara E. Carlson, ASA, EA, MAAA
Enrolled Actuary #17-8546

Enclosures

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SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Hallandale Beach Police Officers' and Firefighters' Personnel Retirement Trust, 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. Funding requirements developed as of October 1, 2019 are projected for a lump sum City deposit on December 31.

The contribution requirements, compared with those set forth in the January 27, 2020 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	\$13,101,828	\$13,903,425
Member Contributions (Est.)	1,362,684	1,516,381
City And State Required Contribution	11,739,144	12,387,044
State Contribution (Est.) ¹	653,582	653,582
City Required Contribution ²	\$11,085,562	\$11,733,462

¹ Represents the amount received in calendar 2019. Based on a Mutual Consent Agreement under Chapter 2015-39, the City may use up to \$1,534,241 in annual State Monies to meet its funding obligation.

² Please note that the City has access to a prepaid contribution of \$28,517.78 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 prior year results. The decrease is attributable to favorable actuarial experience, as described below. The decrease was offset in part by lowering the assumed investment rate of return.

Plan experience was favorable overall on the basis of the plan's actuarial assumptions. Sources of actuarial gain included an average salary increase of 0.15% which fell short of the 5.36% assumption, inactive mortality experience, and more turnover than expected. These gains were offset in part by a loss associated with an investment return of 6.90% (Actuarial Asset Basis) which fell short of 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. Similarly, a death benefit is assumed to be in the line of duty if the defined cancer is the cause.

Please note that the benefit changes only relate to the death and 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

Since the prior valuation, the investment rate of return assumption was lowered from 7.60% to 7.55%, net of investment-related expenses. Additionally, the payroll growth assumption was lowered from 2.64% to 1.94% to comply with Part VII of Chapter 112, Florida Statutes.

Furthermore, the expected percentage of deaths and disabilities that are in the line of duty increased from 75% to 90% for Firefighters, as a result of the plan change described above.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	New Assump <u>10/1/2019</u>	Old Assump <u>10/1/2019</u>	<u>10/1/2018</u>
A. Participant Data			
Actives	137	137	145
Service Retirees	149	149	144
DROP Retirees	21	21	20
Beneficiaries	14	14	14
Disability Retirees	10	10	9
Terminated Vested	<u>10</u>	<u>10</u>	<u>10</u>
Total	341	341	342
Total Annual Payroll	\$13,714,449	\$13,714,449	\$14,983,406
Payroll Under Assumed Ret. Age	13,369,714	13,369,714	14,617,447
Annual Rate of Payments to:			
Service Retirees	9,252,661	9,252,661	8,667,030
DROP Retirees	1,822,698	1,822,698	1,612,043
Beneficiaries	297,835	297,835	304,242
Disability Retirees	426,197	426,197	358,970
Terminated Vested	73,672	73,672	168,306
B. Assets			
Actuarial Value (AVA) ¹	181,708,893	181,708,893	171,352,087
Market Value (MVA) ¹	180,580,358	180,580,358	176,126,693
C. Liabilities			
Present Value of Benefits			
Actives			
Retirement Benefits	76,089,208	75,413,494	82,461,304
Disability Benefits	3,484,668	3,458,899	3,529,843
Death Benefits	1,130,104	1,120,435	1,163,234
Vested Benefits	3,742,586	3,694,721	4,087,309
Refund of Contributions	216,400	216,094	196,872
Service Retirees	122,552,733	121,924,712	113,830,831
DROP Retirees ¹	58,178,295	58,016,039	55,582,493
Beneficiaries	2,913,182	2,901,093	2,755,440
Disability Retirees	5,134,724	5,110,079	3,653,323
Terminated Vested	<u>877,514</u>	<u>872,638</u>	<u>2,001,193</u>
Total	274,319,414	272,728,204	269,261,842

C. Liabilities - (Continued)	New Assump <u>10/1/2019</u>	Old Assump <u>10/1/2019</u>	<u>10/1/2018</u>
Present Value of Future Salaries	106,332,611	106,067,233	112,475,670
Present Value of Future Member Contributions	10,101,598	10,076,387	10,685,189
Normal Cost (Retirement)	2,264,150	2,236,724	2,473,026
Normal Cost (Disability)	239,149	237,439	251,951
Normal Cost (Death)	73,935	73,284	78,562
Normal Cost (Vesting)	198,812	195,832	214,030
Normal Cost (Refunds)	<u>39,647</u>	<u>39,608</u>	<u>35,831</u>
Total Normal Cost	2,815,693	2,782,887	3,053,400
Present Value of Future Normal Costs	20,303,076	20,019,746	21,452,090
Accrued Liability (Retirement)	59,602,773	59,164,755	64,977,298
Accrued Liability (Disability)	1,658,204	1,649,888	1,677,526
Accrued Liability (Death)	581,154	577,552	600,114
Accrued Liability (Vesting)	2,446,518	2,420,454	2,664,870
Accrued Liability (Refunds)	71,241	71,248	66,664
Accrued Liability (Inactives) ¹	<u>189,656,448</u>	<u>188,824,561</u>	<u>177,823,280</u>
Total Actuarial Accrued Liability (EAN AL)	254,016,338	252,708,458	247,809,752
Unfunded Actuarial Accrued Liability (UAAL)	72,307,445	70,999,565	76,457,665
Funded Ratio (AVA / EAN AL)	71.5%	71.9%	69.1%

D. Actuarial Present Value of Accrued Benefits	New Assump <u>10/1/2019</u>	Old Assump <u>10/1/2019</u>	<u>10/1/2018</u>
Vested Accrued Benefits			
Inactives ¹	189,656,448	188,824,561	177,823,280
Actives	27,321,409	26,993,738	29,551,151
Member Contributions	<u>11,448,490</u>	<u>11,448,490</u>	<u>11,685,531</u>
Total	228,426,347	227,266,789	219,059,962
Non-vested Accrued Benefits	<u>10,933,185</u>	<u>10,855,997</u>	<u>11,486,392</u>
Total Present Value			
Accrued Benefits (PVAB)	239,359,532	238,122,786	230,546,354
Funded Ratio (MVA / PVAB)	75.4%	75.8%	76.4%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:			
Plan Amendments	0	0	
Assumption Changes	1,236,746	0	
Plan Experience	0	4,699,162	
Benefits Paid	0	(14,108,143)	
Interest	0	16,985,413	
Other	<u>0</u>	<u>0</u>	
Total	1,236,746	7,576,432	

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

E. Pension Cost

Normal Cost ²	\$3,020,888	\$2,986,057	\$3,334,240
Administrative Expenses ²	242,950	242,980	239,506
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 29 years (as of 10/1/2019) ²	9,837,990	9,474,681	10,329,679
Minimum Required Contribution	13,101,828	12,703,718	13,903,425
Expected Member Contributions ²	1,362,684	1,362,851	1,516,381
Expected City and State Contribution	11,739,144	11,340,867	12,387,044

F. Past Contributions

Plan Years Ending:	<u>9/30/2019</u>
City and State Requirement	11,359,528
Actual Contributions Made:	
Members (excluding buyback)	1,312,302
City	10,705,946
State	<u>653,582</u>
Total	12,671,830

G. Net Actuarial (Gain)/Loss (1,519,809)

¹ The asset values and liabilities include accumulated DROP 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 (assuming a December 31 lump sum payment).

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	72,307,445
2020	67,904,600
2021	62,978,016
2028	24,738,091
2035	3,802,059
2041	2,231,542
2048	0

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

	<u>Actual</u>	<u>Assumed</u>
Year Ended 9/30/2019	0.15%	5.36%
Year Ended 9/30/2018	10.14%	5.33%
Year Ended 9/30/2017	7.79%	5.84%
Year Ended 9/30/2016	5.89%	7.32%
Year Ended 9/30/2015	6.57%	7.10%

(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	3.36%	6.90%	7.60%
Year Ended 9/30/2018	10.15%	8.27%	7.65%
Year Ended 9/30/2017	11.87%	8.99%	7.70%
Year Ended 9/30/2016	8.38%	9.98%	7.75%
Year Ended 9/30/2015	-0.44%	9.77%	7.75%

(iii) Average Annual Payroll Growth

(a) Payroll as of:	10/1/2019	\$13,369,714
	10/1/2009	11,034,615
(b) Total Increase		21.16%
(c) Number of Years		10.00
(d) Average Annual Rate		1.94%

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	\$76,457,665
(2) Sponsor Normal Cost developed as of October 1, 2018	1,664,743
(3) Expected administrative expenses for the year ended September 30, 2019	219,333
(4) Expected interest on (1), (2) and (3)	5,945,638
(5) Sponsor contributions to the System during the year ended September 30, 2019	11,359,528
(6) Expected interest on (5)	408,477
(7) Expected Unfunded Actuarial Accrued Liability as of September 30, 2019 (1)+(2)+(3)+(4)-(5)-(6)	72,519,374
(8) Change to UAAL due to Assumption Change	1,307,880
(9) Change to UAAL due to Actuarial (Gain)/Loss	(1,519,809)
(10) Unfunded Actuarial Accrued Liability as of October 1, 2019	72,307,445

<u>Type of Base</u>	<u>Date Established</u>	<u>Years Remaining</u>	<u>10/1/2019 Amount</u>	<u>Amortization Amount</u>
Plan Amendment	10/1/1993	4	5,081,075	1,374,091
Assumption Change	10/1/1994	5	532,807	118,273
Method Change	10/1/1994	5	(1,223,936)	(271,691)
Assumption Change	10/1/1995	6	(592,949)	(112,516)
Assumption Change	10/1/1996	7	160,288	26,737
Plan Amendment	10/1/1997	8	2,503,033	374,576
Assumption Change	10/1/1999	10	277,046	34,843
Plan Amendment	10/1/2000	11	1,605,184	188,039
Plan Amendment	10/1/2001	12	5,139,439	565,322
Asset Method Change	10/1/2002	13	(2,783,151)	(289,400)
Assumption Change	10/1/2002	13	(1,529,589)	(159,051)
Plan Amendment	10/1/2002	13	10,775,373	1,120,454
Plan Amendment	10/1/2007	8	9,313,746	1,393,792
Plan Amendment	10/1/2009	20	(1,068,129)	(84,741)
Assumption Change	10/1/2010	11	2,142,917	251,031
Assumption Change	10/1/2011	12	1,256,414	138,201
Method Change	10/1/2011	12	24,365,219	2,680,095
Actuarial Loss	10/1/2012	3	2,126,753	747,216
Plan Amendment	10/1/2012	23	(3,702,700)	(272,667)

Type of <u>Base</u>	Date <u>Established</u>	Years <u>Remaining</u>	10/1/2019 <u>Amount</u>	Amortization <u>Amount</u>
Actuarial Gain	10/1/2013	4	(63,550)	(17,186)
Actuarial Gain	10/1/2014	5	(839,352)	(186,320)
Actuarial Gain	10/1/2015	6	(599,756)	(113,808)
Assumption Change	10/1/2016	17	8,031,803	700,868
Actuarial Gain	10/1/2016	7	(3,471,929)	(579,136)
Legal Opinion ¹	10/1/2016	27	4,374,662	298,448
Actuarial Loss	10/1/2017	8	5,324,828	796,855
Assumption Change	10/1/2017	18	1,197,149	100,923
Legal Opinion ²	10/1/2018	29	1,028,101	68,011
Actuarial Loss	10/1/2018	9	1,960,597	267,339
Assumption Change	10/1/2018	19	1,241,543	101,406
Benefit Change	10/1/2018	29	(43,562)	(2,882)
Actuarial Gain	10/1/2019	10	(1,519,809)	(191,142)
Assumption Change	10/1/2019	20	<u>1,307,880</u>	<u>103,762</u>
			72,307,445	9,169,742

¹ Based on a Board adopted legal opinion after completion of the 10/1/2016 valuation.

² Based on a Board adopted legal opinion from the November 26, 2018 Meeting.

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of October 1, 2018	\$76,457,665
(2) Expected UAAL as of October 1, 2019	72,519,374
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	1,197,451
Salary Increases	(2,065,081)
Active Decrements	(583,222)
Inactive Mortality	(1,062,549)
Other	<u>993,592</u>
Increase in UAAL due to (Gain)/Loss	(1,519,809)
Assumption Changes	<u>1,307,880</u>
(4) Actual UAAL as of October 1, 2019	\$72,307,445

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.

75% of active Police Officer deaths are assumed to be service-incurred. 90% (prior year 75%) of active Firefighter deaths are assumed to be service-incurred.

Interest Rate

7.55% (prior year 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.

Payroll Growth

1.94% (prior year 2.64%) for purposes of amortizing the Unfunded Actuarial Accrued Liability. This assumption cannot exceed the ten-year average payroll growth, in compliance with Part VII of Chapter 112, Florida Statutes.

Salary Increases

According to the below table, based on the September 26, 2016 Experience Study.

Salary Scale	
Service	Rate
< 1	10.0%
1 - 5	7.5%
6 - 9	6.0%
10+	4.5%

Administrative Expenses

\$226,448 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.

Retirement Rates

Early Retirement

Based on results of the September 27, 2016 Experience Study, no Members are assumed to elect Early Retirement.

Normal Retirement

Based on results of an Experience Study dated September 26, 2016, the below table reflects the assumed rates of retirement once a member attains Normal Retirement eligibility with at least 25 years of Credited Service:

% Retiring During the Year (25+ Years of Service)	
Service	Rate
25	75%
26+	100%

Also as part of the September 26, 2016 Experience Study, the below table provides rates of retirement for members attaining Normal Retirement eligibility with less than 25 years of Credited Service:

% Retiring During the Year (<25 Years of Service)	
Years Following Attainment of 52/10	Rate
0	10%
1	10%
2	10%
3+	100%

Termination Rate

See table below. The assumed rates of termination were approved in conjunction with an actuarial experience study dated September 27, 2016.

% Terminating During the Year	
Service	Rate
< 5	7.0%
5 - 8	5.0%
9+	2.5%

Disability Rate

See sample rates below. 75% of Police Officer disabilities are assumed to be service-incurred. 90% (prior year 75%) of Firefighter disabilities are assumed to be service-incurred. These rates were reviewed in conjunction with an actuarial experience study dated September 30, 2011 (no changes were made with the September 27, 2016 Experience Study).

% Becoming Disabled During the Year	
Age	Rate
20	0.14%
30	0.18%
40	0.30%
50+	1.00%

Funding Method

Entry Age Normal Actuarial Cost Method. The following loads are utilized for determination of the Total Required Contribution:

Interest – A quarter-year (previously, a half-year), based on the current 7.55% assumption.

Salary – A full-year, based on the current 5.20% average increase assumption.

Actuarial Asset Method

The Actuarial Value of Assets utilizes a five-year smoothing methodology. The annual difference between expected and actual investment earnings (Market Value, net of investment-related expenses), is phased-in over a five-year period.

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.

Post Retirement COLA

Retired Police Officers prior to March 20, 2013 and Retired Firefighters prior to August 7, 2013:

2% per year for Normal Retirement.

Police Officers eligible for Normal Retirement or with 24 years of service as of March 20, 2013, and Firefighters eligible for Normal Retirement as of August 7, 2013, or with 24 years of service as of December 28, 2013:

2% per year for Normal Retirement.

All other Police Officers hired prior to March 20, 2013 and all other Firefighters hired prior to August 7, 2013:

2.0% per year for Normal Retirement, but limited to eight (8) adjustments once the \$95,000 maximum benefit is realized.

Police Officers hired on or after March 20, 2013 and Firefighters hired on or after August 7, 2013:

None.

Special note number one: Please refer to the July 5, 2017 and January 24, 2018 actuarial studies for a description of the COLA assumption resulting from legal opinions adopted by the Board that differ from provisions set forth in the governing Ordinance.

Special note number two: Based on a legal opinion offered at the November 26, 2018 Board meeting, the Trustees prospectively expanded the application of the Plan's COLA benefit to be applicable to all categories of future retirements, i.e. Normal, Early, Disability, Vested Terminated, and Pre-Retirement Death. No COLA is payable for Police Officers hired on or after March 20, 2013 and Firefighters hired on or after August 7, 2013.

GLOSSARY

Total Annual Payroll is the projected annual rate of pay as of 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.

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.

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 sponsor contributions during the year.

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 decreased from 80.2% on October 1, 2016 to 69.9% on October 1, 2019, indicating that the plan has been maturing 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 74.7%. 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 67.9% on October 1, 2016 to 71.5% on October 1, 2019.
- 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 -0.8% 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	150	147	145	137
Total Inactives ¹	187	189	191	196
Actives / Inactives ¹	80.2%	77.8%	75.9%	69.9%
 <u>Asset Volatility Ratio</u>				
Market Value of Assets (MVA)	143,198,929	160,522,701	176,126,693	180,580,358
Total Annual Payroll	13,709,376	14,174,443	14,983,406	13,714,449
MVA / Total Annual Payroll	1,044.5%	1,132.5%	1,175.5%	1,316.7%
 <u>Accrued Liability (AL) Ratio</u>				
Inactive Accrued Liability	158,251,176	168,967,987	177,823,280	189,656,448
Total Accrued Liability (EAN)	214,063,864	233,060,305	247,809,752	254,016,338
Inactive AL / Total AL	73.9%	72.5%	71.8%	74.7%
 <u>Funded Ratio</u>				
Actuarial Value of Assets (AVA)	145,294,165	158,831,953	171,352,087	181,708,893
Total Accrued Liability (EAN)	214,063,864	233,060,305	247,809,752	254,016,338
AVA / Total Accrued Liability (EAN)	67.9%	68.2%	69.1%	71.5%
 <u>Net Cash Flow Ratio</u>				
Net Cash Flow ²	152,032	454,094	(592,473)	(1,416,587)
Market Value of Assets (MVA)	143,198,929	160,522,701	176,126,693	180,580,358
Ratio	0.1%	0.3%	-0.3%	-0.8%

¹ Excludes terminated participants awaiting a refund of member contributions.

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

STATEMENT OF FIDUCIARY NET POSITION
SEPTEMBER 30, 2019

<u>ASSETS</u>	COST VALUE	MARKET VALUE
Cash and Cash Equivalents:		
Short Term Investments	7,851,437.71	7,851,437.71
Prepaid Expenses	7,708.33	7,708.33
Cash	14,121.40	14,121.40
 Total Cash and Equivalents	 7,873,267.44	 7,873,267.44
Receivables:		
From Broker for Investments Sold	388,703.31	388,703.31
Investment Income	280,447.14	280,447.14
 Total Receivable	 669,150.45	 669,150.45
Investments:		
U. S. Bonds and Bills	8,620,723.87	9,082,119.50
Federal Agency Guaranteed Securities	9,813,496.34	10,002,839.07
Corporate Bonds	11,973,206.72	12,530,213.59
Municipal Obligations	99,718.00	102,433.00
Stocks	94,971,024.75	109,604,373.55
Hedge Fund of Funds	13,315,000.00	17,494,080.28
Mutual Funds:		
Equity	2,156,579.68	2,290,077.86
Pooled/Common/Commingled Funds:		
Equity	2,910,976.78	3,435,436.00
Real Estate	8,125,910.35	8,125,910.35
 Total Investments	 151,986,636.49	 172,667,483.20
 Total Assets	 160,529,054.38	 181,209,901.09
 <u>LIABILITIES</u>		
Payables:		
Refunds of Member Contributions	157,206.12	157,206.12
Investment Expenses	174,284.04	174,284.04
Administrative Expenses	34,838.44	34,838.44
To Broker for Investments Purchased	238,362.57	238,362.57
Prepaid Member Contribution	665.66	665.66
Prepaid City Contribution	24,186.60	24,186.60
 Total Liabilities	 629,543.43	 629,543.43
 NET POSITION RESTRICTED FOR PENSIONS	 159,899,510.95	 180,580,357.66

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

ADDITIONS

Contributions:

Member	1,312,301.77
Buy-Back	253,288.01
City	10,705,946.40
State	653,581.60

Total Contributions 12,925,117.78

Investment Income:

Net Realized Gain (Loss)	4,384,880.61
Unrealized Gain (Loss)	(1,275,495.13)
Net Increase in Fair Value of Investments	3,109,385.48
Interest & Dividends	3,687,802.76
Less Investment Expense ¹	(926,936.24)

Net Investment Income 5,870,252.00

Total Additions 18,795,369.78

DEDUCTIONS

Distributions to Members:

Benefit Payments	9,843,639.40
Lump Sum DROP Distributions	3,856,452.98
Refunds of Member Contributions	408,050.56

Total Distributions 14,108,142.94

Administrative Expense 233,562.01

Total Deductions 14,341,704.95

Net Increase in Net Position 4,453,664.83

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year 176,126,692.83

End of the Year 180,580,357.66

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 recognizing the total actuarial investment gain or loss for each Plan Year over a five year period. In the first year, 20% of the gain or loss is recognized. In the second year 40%, in the third year 60%, in the fourth year 80%, and in the fifth year 100% of the gain or loss is recognized. The actuarial investment gain or loss is defined as the actual return on investments minus the actuarial assumed investment return. Actuarial Assets shall not be less than 80% nor greater than 120% of Market Value of Assets.

Plan Year Ending	Gain/(Loss)	<u>Gains/Losses Not Yet Recognized</u>				
		Amounts Not Yet Recognized by Valuation Year				
		2019	2020	2021	2022	2023
09/30/2015	(10,847,650)	0	0	0	0	0
09/30/2016	745,771	149,155	0	0	0	0
09/30/2017	5,825,809	2,330,323	1,165,161	0	0	0
09/30/2018	3,937,927	2,362,757	1,575,172	787,587	0	0
09/30/2019	(7,463,462)	(5,970,770)	(4,478,078)	(2,985,386)	(1,492,694)	0
Total		(1,128,535)	(1,737,745)	(2,197,799)	(1,492,694)	0

Development of Investment Gain/Loss

Market Value of Assets, including Prepaid Contributions, 09/30/2018	176,152,243
Contributions Less Benefit Payments & Admin Expenses	(1,417,285)
Expected Investment Earnings*	13,333,714
Actual Net Investment Earnings	5,870,252
2019 Actuarial Investment Gain/(Loss)	<u>(7,463,462)</u>

*Expected Investment Earnings = 0.076 * [176,152,243 + 0.5 * (1,417,285)]

Development of Actuarial Value of Assets

(1) Market Value of Assets, 09/30/2019	180,580,358
(2) Gains/(Losses) Not Yet Recognized	(1,128,535)
(3) Actuarial Value of Assets, 09/30/2019, (1) - (2)	<u>181,708,893</u>

(A) 09/30/2018 Actuarial Assets, including Prepaid Contributions: 171,377,637

(I) Net Investment Income:	
1. Interest and Dividends	3,687,803
2. Realized Gain (Loss)	4,384,881
2. Unrealized Gain (Loss)	(1,275,495)
3. Change in Actuarial Value	5,903,141
4. Investment Expenses	(926,936)
Total	<u>11,773,393</u>

(B) 09/30/2019 Actuarial Assets, including Prepaid Contributions: 181,733,745

Actuarial Assets Rate of Return = 2I/(A+B-I): 6.90%
Market Value of Assets Rate of Return: 3.36%

Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis) (1,197,451)

10/01/2019 Limited Actuarial Assets (not including Prepaid): 181,708,893

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

REVENUES

Contributions:		
Member	1,312,301.77	
Buy-Back	253,288.01	
City	10,705,946.40	
State	653,581.60	
 Total Contributions		 12,925,117.78
Earnings from Investments:		
Interest & Dividends	3,687,802.76	
Net Realized Gain (Loss)	4,384,880.61	
Unrealized Gain (Loss)	(1,275,495.13)	
Change in Actuarial Value	5,903,141.00	
 Total Earnings and Investment Gains		 12,700,329.24

EXPENDITURES

Distributions to Members:		
Benefit Payments	9,843,639.40	
Lump Sum DROP Distributions	3,856,452.98	
Refunds of Member Contributions	408,050.56	
 Total Distributions		 14,108,142.94
Expenses:		
Investment related ¹	926,936.24	
Administrative	233,562.01	
 Total Expenses		 1,160,498.25
 Change in Net Assets for the Year		 10,356,805.83
 Net Assets Beginning of the Year		 171,352,086.83
 Net Assets End of the Year ²		 181,708,892.66

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

²Net Assets may be limited for actuarial consideration.

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

Beginning of the Year Balance	30,815,506.06
Plus Additions	1,667,813.93
Investment Return Earned	2,082,982.12
Less Distributions	(3,856,452.98)
End of the Year Balance	30,709,849.13

Note: Investment Return for five new members will be included in the Investment Return for fiscal year ending September 30, 2020.

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

(1) Required City and State Contributions	\$11,359,528.00
(2) Less Allowable State Contribution	<u>(653,581.60)</u>
(3) Required City Contribution for Fiscal 2019	10,705,946.40
(4) Less 2018 Prepaid Contribution	(25,550.30)
(5) Less Actual City Contributions	<u>(10,704,582.70)</u>
(6) Equals City's Shortfall/(Prepaid) Contribution as of September 30, 2019	(\$24,186.60)

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	150	147	145	137
Average Current Age	38.8	39.1	39.2	39.3
Average Age at Employment	27.7	26.5	26.3	26.6
Average Past Service	11.1	12.6	12.9	12.7
Average Annual Salary	\$91,396	\$96,425	\$103,334	\$100,105
<u>Service Retirees</u>				
Number	141	138	144	149
Average Current Age	63.2	64.1	63.7	63.9
Average Annual Benefit	\$55,770	\$56,989	\$60,188	\$62,098
<u>DROP Retirees</u>				
Number	20	25	20	21
Average Current Age	52.5	52.7	52.7	51.9
Average Annual Benefit	\$78,874	\$81,239	\$80,602	\$86,795
<u>Beneficiaries</u>				
Number	14	13	14	14
Average Current Age	75.3	76.6	76.9	74.7
Average Annual Benefit	\$21,516	\$21,026	\$21,732	\$21,274
<u>Disability Retirees</u>				
Number	8	8	9	10
Average Current Age	61.5	62.5	62.7	64.4
Average Annual Benefit	\$36,866	\$36,866	\$39,886	\$42,620
<u>Terminated Vested</u>				
Number	8	9	10	10
Average Current Age ¹	46.5	49.6	50.3	46.1
Average Annual Benefit ¹	\$32,953	\$37,402	\$42,077	\$36,836

¹ The Average Current Age and 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	1	1										2
25 - 29	3	3		2	1		1					10
30 - 34	2			2	2	6	8	1				21
35 - 39		2		3	2	6	17	13	2			45
40 - 44		1					5	7	7			20
45 - 49	1			1		4	5	6	8			25
50 - 54							2	2	5			9
55 - 59						1	2		1			4
60 - 64								1				1
65+												0
Total	7	7	0	8	5	17	40	30	23	0	0	137

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 10/1/2018	145
b. Terminations	
i. Vested (partial or full) with deferred annuity	0
ii. Vested in refund of member contributions only	(1)
iii. Refund of member contributions or full lump sum distribution received	(5)
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	(1)
e. Retired	0
f. DROP	<u>(8)</u>
g. Continuing participants	130
h. New entrants	<u>7</u>
i. Total active life participants in valuation	137

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

	Service Retirees, Vested Receiving	DROP Benefits	Receiving Death Benefits	Receiving Disability Benefits	Vested (Deferred Annuity)	Vested (Due Refund)	Total
	<u>Benefits</u>	<u>Benefits</u>	<u>Benefits</u>	<u>Benefits</u>	<u>Benefits</u>	<u>Benefits</u>	<u>Benefits</u>
a. Number prior valuation	144	20	14	9	4	6	197
Retired	8	(7)	0	0	(1)	0	0
DROP	0	8	0	0	0	0	8
Vested (Deferred Annuity)	0	0	0	0	0	0	0
Vested (Due Refund)	0	0	0	0	0	1	1
Hired/Terminated in Same Year	0	0	0	0	0	2	2
Death, With Survivor	(1)	0	1	0	0	0	0
Death, No Survivor	(2)	0	(1)	(1)	0	0	(4)
Disabled	0	0	0	2	(1)	0	1
Refund of Contributions	0	0	0	0	0	(1)	(1)
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	149	21	14	10	2	8	204

SUMMARY OF CURRENT PLAN

Special note: Please refer to the July 5, 2017 and January 24, 2018 actuarial studies for a description of benefit changes resulting from legal opinions adopted by the Board that expand on provisions set forth in the governing Ordinance.

<u>Eligibility</u>	Full-time employees who are classified as Police Officers or Firefighters participate as a condition of employment.
<u>Tier 1 Member</u>	Police Officers hired prior to March 20, 2013, or Firefighters hired prior to August 7, 2013.
<u>Tier 2 Member</u>	Police Officers hired on or after March 20, 2013, or Firefighters hired on or after August 7, 2013.
<u>Credited Service</u>	Total years and fractional parts of years of employment with the City as a Police Officer or Firefighter.
<u>Pensionable Earnings</u>	Base salary, including Pick-Up Amounts, for all straight time hours worked, overtime, assignment pay, premium pay, state educational incentive payments and payments received for vacation, sick leave and bereavement leave taken in lieu of pay for actual services rendered. Basic Compensation shall not include bonuses, commissions, uniform or expense allowance, Outside Service Duty Detail Compensation, or payments for accrued sick leave, vacation, sick leave buyback amounts, or compensatory leave paid as a lump sum upon separation of service.
<u>Final Average Compensation</u>	<i>Tier 1:</i> Average of Pensionable Earnings for the two most recent completed calendar years prior to retirement or termination with the City. <i>Tier 2:</i> Average of Pensionable Earnings for the five most recent completed calendar years prior to retirement or termination with the City.
<u>Member Contributions</u>	9.5% of Salary.
<u>City and State Contributions</u>	Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, as provided in Part VII, Chapter 112, F.S.

Normal Retirement

Date	Earlier of: 1) Age 52 with 10 years of Credited Service, or 2) the completion of 25 years of Credited Service, regardless of age.
Benefit	<i>Tier 1:</i> 3.20% of Final Average Compensation for all years of Credited Service. <i>Tier 2:</i> 3.00% of Final Average Compensation for all years of Credited Service.
Maximum Benefit	<i>Tier 1:</i> 80% of Final Average Compensation. <i>Tier 2:</i> 75% of Final Average Compensation. Additionally, any Police Officer who was not eligible for Normal Retirement or who had not completed 24 years of service as of March 20, 2013, or any Firefighter who was not eligible for Normal Retirement as of August 7, 2013 or who will not have completed 24 years of service as December 28, 2013 is subject to a \$95,000 annual maximum benefit, determined on the basis of the Normal Form of Benefit.
Form of Benefit	Ten Year Certain and Life Annuity (options available).

Early Retirement

Eligibility	Age 45 with 10 years of Credited Service.
Benefit	Accrued benefit, reduced 6% per year that the benefit commencement date precedes age 52.

Vesting

Less than 5 Years	Refund of Member contributions without interest.
5-10 years	Refund of Member contributions with 3% interest through the termination date.
10 or more years	Greater of a refund of Member contributions with 3% interest and the accrued benefit, payable at the 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

Service Incurred

75% of Pensionable Earnings, less 64% of Social Security Disability Benefits received, further reduced by 33% of Workers' Compensation Benefits received, plus outside income to the extent that the sum of the Workers' Compensation Benefit and Disability Retirement benefit exceed 100% of Basic Compensation.

In no case will the Disability Retirement Benefit be less than the greater of the accrued Normal Retirement Benefit and 42% of Basic Compensation.

Non-Service Incurred

Accrued Benefit, less 64% of Social Security Disability Benefits received.

In no case will the Disability Retirement Benefit be less than 25% of Final Average Compensation, nor more than 50% of Final Average Compensation as of the date of disability.

Duration

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

Death Benefits

Eligibility

Service Incurred

Covered from Date of Employment.

Non-Service Incurred

10 years of Credited Service.

Benefit (Pre-Retirement)

Service Incurred

Accrued Benefit, but not less than 30% of Basic Compensation.

Non-Service Incurred

Accrued Benefit.

Benefit (Post-Retirement)

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

Form of Benefit

10 Year Certain and Life Annuity.

Health Care Stipend

Eligibility

Date of Employment prior to January 1, 1996.

The stipend is payable for all types of retirement benefits; DROP retirees do not receive the stipend while participating in the DROP.

Benefit

\$10 per month for each year of Credited Service, up to a maximum of \$200 per month.

Form of Benefit

Payable for the life of the retiree and any survivor, if a joint and survivor option is chosen by the Retiree.

Cost of Living Increases

Retired Police Officers prior to March 20, 2013 and Retired Firefighters prior to August 7, 2013:

2% increase effective each January provided that the CPI-U is greater than or equal to 0.5% for the preceding 12 month period ending September 30, applied to Normal and DROP Retirees. The Health Care Stipend is not subject to the COLA.

Police Officers eligible for Normal Retirement or with 24 years of service as of March 20, 2013, and Firefighters eligible for Normal Retirement as of August 7, 2013, or with 24 years of service as of December 28, 2013:
2.0% increase effective each January as previously described.

All other Police Officers hired prior to March 20, 2013 and all other Firefighters hired prior to August 7, 2013:

2.0% increase effective each January as previously described. However, these Members are subject to a limitation of eight (8) total adjustments once the \$95,000 maximum annual benefit is realized. Also, these Members are not entitled to receive any adjustments while participating in the DROP.

Police Officers hired on or after March 20, 2013 and Firefighters hired on or after August 7, 2013:

Not entitled to a COLA.

Special note: Please refer to the Actuarial Assumptions and Methods section of this report for a special note regarding the Board's interpretation of the COLA structure.

Deferred Retirement Option Plan (Tier 1 Only)

Eligibility	Earlier of: 1) Age 52 with 20 years of Credited Service, 2) the completion of 25 years of Credited Service, regardless of age, or 3) the date when the maximum benefit is earned.
Participation	Not to exceed 60 months.
Rate of Return	Plan Earnings, less 0.5% per year for administrative expenses. A one-time election to credit DROP accounts with the valuation assumption for investment return has been allowed since 2002. Upon exit from the DROP, interest credit reverts to Plan earnings on DROP balances.
Form of Distribution	Cash lump sum (options available) at termination of employment.

STATEMENT OF FIDUCIARY NET POSITION
SEPTEMBER 30, 2019

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Short Term Investments	7,851,438
Prepaid Expenses	7,708
Cash	14,121
Total Cash and Equivalents	7,873,267
Receivables:	
From Broker for Investments Sold	388,703
Investment Income	280,447
Total Receivable	669,150
Investments:	
U. S. Bonds and Bills	9,082,120
Federal Agency Guaranteed Securities	10,002,839
Corporate Bonds	12,530,214
Municipal Obligations	102,433
Stocks	109,604,374
Hedge Fund of Funds	17,494,080
Mutual Funds:	
Equity	2,290,078
Pooled/Common/Commingled Funds:	
Equity	3,435,436
Real Estate	8,125,910
Total Investments	172,667,484
Total Assets	181,209,901
<u>LIABILITIES</u>	
Payables:	
Refunds of Member Contributions	157,206
Investment Expenses	174,284
Administrative Expenses	34,838
To Broker for Investments Purchased	238,363
Total Liabilities	604,691
NET POSITION RESTRICTED FOR PENSIONS	180,605,210

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

ADDITIONS

Contributions:

Member	1,312,967	
Buy-Back	253,288	
City	10,704,582	
State	653,582	
 Total Contributions		 12,924,419
 Investment Income:		
Net Increase in Fair Value of Investments	3,109,386	
Interest & Dividends	3,687,803	
Less Investment Expense ¹	(926,936)	
 Net Investment Income		 5,870,253
 Total Additions		 18,794,672

DEDUCTIONS

Distributions to Members:

Benefit Payments	9,843,639	
Lump Sum DROP Distributions	3,856,453	
Refunds of Member Contributions	412,382	
 Total Distributions		 14,112,474
 Administrative Expense		 233,562
 Total Deductions		 14,346,036
 Net Increase in Net Position		 4,448,636
 NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		176,156,574
 End of the Year		 180,605,210

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

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

Plan Description

Plan Administration

The Plan is a single-employer defined benefit pension plan administered by the Plan's Board of Trustees comprised of: Five persons; two of whom shall be legal residents of the City of Hallandale Beach and who shall be appointed by the City Commission. One Member of the Board of Trustees shall be a police officer who shall be elected by a majority of police officers who are active members of the Plan. One member shall be a firefighter who shall be elected by a majority of the firefighters who are active employee members of the Plan. A fifth member of the Board shall be chosen by a majority of the previous four persons, and such person's name shall be submitted to the City Commission for appointment. The City Commission shall appoint the fifth member selected by the other four as ministerial duty.

Plan Membership as of October 1, 2018:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	187
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	10
Active Plan Members	145
	342
	342

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 Hallandale Beach Police Officers' and Firefighters' Personnel Retirement Trust 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: 9.5% of Salary.

Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, as provided in Part VII, Chapter 112, F.S.

Investments

Investment Policy:

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

Asset Class	Target Allocation
Large Cap US Equity	42.50%
Small/Mid Cap US Equity	10.00%
Non-US Equity Developed	10.00%
US Corps Bonds-Core	17.50%
Real Estate	5.00%
Hedge Funds	10.00%
Private Equity	2.50%
Private Debt	2.50%
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.

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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 3.36 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 (Tier 1 Only)

Eligibility: Earlier of: 1) Age 52 with 20 years of Credited Service, 2) the completion of 25 years of Credited Service, regardless of age, or 3) the date when the maximum benefit is earned.

Participation: Not to exceed 60 months.

Rate of Return: Plan Earnings, less 0.5% per year for administrative expenses. A one-time election to credit DROP accounts with the valuation assumption for investment return has been allowed since 2002. Upon exit from the DROP, interest credit reverts to Plan earnings on DROP balances.

The DROP balance as September 30, 2019 is \$30,709,849.

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	\$ 255,918,329
Plan Fiduciary Net Position	\$ (180,605,210)
Sponsor's Net Pension Liability	\$ 75,313,119
Plan Fiduciary Net Position as a percentage of Total Pension Liability	70.57%

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	2.30%
Salary Increases	Service based
Discount Rate	7.55%
Investment Rate of Return	7.55%

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.

75% of active deaths are assumed to be service-incurred.

The most recent actuarial experience study used to review the other significant assumptions was dated September 27, 2016.

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 1.90%.

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 ¹
Large Cap US Equity	5.70%
Small/Mid Cap US Equity	5.93%
Non-US Equity Developed	5.20%
US Corps Bonds-Core	1.80%
Real Estate	6.00%
Hedge Funds	3.90%
Private Equity	10.90%
Private Debt	3.80%

¹ Please note that long term expected return of the total portfolio is greater than simply multiplying each of the above "Long Term Expected Real Rate of Returns" by their target allocation % and adding them together. Not only is the time horizon longer for an actuarial valuation relative to the time horizon over which the above projected returns were generated, but also there is an additional correlation resulting from a diversified portfolio that will provide additional returns.

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Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.55 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 6.55%	Current Discount Rate 7.55%	1% Increase 8.55%
Sponsor's Net Pension Liability	\$ 104,085,381	\$ 75,313,119	\$ 51,694,817

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	3,127,748	2,866,703	2,668,846
Interest	18,162,979	17,317,517	16,069,318
Changes of benefit terms	(40,488)	9,897,461	-
Differences between Expected and Actual Experience	4,267,373	3,386,280	(1,906,123)
Changes of assumptions	1,304,354	1,225,338	847,814
Contributions - Buy Back	253,288	208,015	136,829
Benefit Payments, including Refunds of Employee Contributions	(14,112,474)	(11,108,749)	(9,354,592)
Net Change in Total Pension Liability	12,962,780	23,792,565	8,462,092
Total Pension Liability - Beginning	242,955,549	219,162,984	210,700,892
Total Pension Liability - Ending (a)	<u>\$255,918,329</u>	<u>\$242,955,549</u>	<u>\$219,162,984</u>
Plan Fiduciary Net Position			
Contributions - Employer	10,704,582	8,666,930	7,933,609
Contributions - State	653,582	636,188	629,395
Contributions - Employee	1,312,967	1,252,541	1,294,496
Contributions - Buy Back	253,288	208,015	136,829
Net Investment Income	5,870,253	16,196,464	16,869,679
Benefit Payments, including Refunds of Employee Contributions	(14,112,474)	(11,108,749)	(9,354,592)
Administrative Expense	(233,562)	(219,333)	(183,827)
Net Change in Plan Fiduciary Net Position	4,448,636	15,632,056	17,325,589
Prior year adjustment	-	-	-
Plan Fiduciary Net Position - Beginning	176,156,574	160,524,518	143,198,929
Plan Fiduciary Net Position - Ending (b)	<u>\$180,605,210</u>	<u>\$176,156,574</u>	<u>\$160,524,518</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 75,313,119</u>	<u>\$ 66,798,975</u>	<u>\$ 58,638,466</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	70.57%	72.51%	73.24%
Covered Payroll ¹	\$ 13,820,705	\$ 13,184,642	\$ 13,626,274
Net Pension Liability as a percentage of Covered Payroll	544.93%	506.64%	430.33%

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

	09/30/2016	09/30/2015
Total Pension Liability		
Service Cost	2,198,923	2,114,287
Interest	14,732,084	13,946,642
Changes of benefit terms	-	-
Differences between Expected and Actual Experience	1,635,041	3,413,322
Changes of assumptions	8,988,193	-
Contributions - Buy Back	22,723	33,396
Benefit Payments, including Refunds of Employee Contributions	(9,537,098)	(9,377,998)
Net Change in Total Pension Liability	<u>18,039,866</u>	<u>10,129,649</u>
Total Pension Liability - Beginning	<u>192,661,026</u>	<u>182,531,377</u>
Total Pension Liability - Ending (a)	<u>\$210,700,892</u>	<u>\$192,661,026</u>
Plan Fiduciary Net Position		
Contributions - Employer	7,874,125	7,851,700
Contributions - State	601,707	673,170
Contributions - Employee	1,285,750	1,205,723
Contributions - Buy Back	22,723	33,396
Net Investment Income	10,988,258	(574,125)
Benefit Payments, including Refunds of Employee Contributions	(9,537,098)	(9,377,998)
Administrative Expense	(148,100)	(137,847)
Net Change in Plan Fiduciary Net Position	<u>11,087,365</u>	<u>(325,981)</u>
Prior year adjustment	-	204,046
Plan Fiduciary Net Position - Beginning	<u>132,111,564</u>	<u>132,233,499</u>
Plan Fiduciary Net Position - Ending (b)	<u>\$143,198,929</u>	<u>\$132,111,564</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 67,501,963</u>	<u>\$ 60,549,462</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	67.96%	68.57%
Covered Payroll ¹	\$ 13,167,794	\$ 14,267,482
Net Pension Liability as a percentage of Covered Payroll	512.63%	424.39%

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	2,068,244	1,919,484
Interest	13,484,951	13,065,637
Changes of benefit terms	-	-
Differences between Expected and Actual Experience	-	-
Changes of assumptions	-	-
Contributions - Buy Back	-	-
Benefit Payments, including Refunds of Employee Contributions	<u>(9,905,885)</u>	<u>(9,540,860)</u>
Net Change in Total Pension Liability	5,647,310	5,444,261
Total Pension Liability - Beginning	<u>176,884,067</u>	<u>171,439,806</u>
Total Pension Liability - Ending (a)	<u><u>\$182,531,377</u></u>	<u><u>\$176,884,067</u></u>
Plan Fiduciary Net Position		
Contributions - Employer	7,988,891	7,520,029
Contributions - State	662,916	620,891
Contributions - Employee	1,190,421	1,225,133
Contributions - Buy Back	-	-
Net Investment Income	13,794,259	17,699,778
Benefit Payments, including Refunds of Employee Contributions	(9,905,885)	(9,540,860)
Administrative Expense	<u>(109,957)</u>	<u>(142,874)</u>
Net Change in Plan Fiduciary Net Position	13,620,645	17,382,098
Prior year adjustment	-	-
Plan Fiduciary Net Position - Beginning	<u>118,612,854</u>	<u>101,230,756</u>
Plan Fiduciary Net Position - Ending (b)	<u><u>\$132,233,499</u></u>	<u><u>\$118,612,854</u></u>
Net Pension Liability - Ending (a) - (b)	<u><u>\$ 50,297,878</u></u>	<u><u>\$ 58,271,213</u></u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	72.44%	67.06%
Covered Payroll ¹	\$ 12,179,211	\$ 12,528,346
Net Pension Liability as a percentage of Covered Payroll	412.98%	465.11%

Notes to Schedule of Changes in Net Pension Liability and Related Ratios

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 09/30/2019, 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.

For measurement date 09/30/2018, amounts reported as changes of benefit terms resulted from legal opinions adopted by the Board that expand on provisions set forth in the governing Ordinance. More details can be found in the Actuarial Valuation report as of October 1, 2017.

Changes of assumptions:

For measurement date 09/30/2019, amounts reported as changes of assumptions resulted from lowering the investment return from 7.60% to 7.55% per year compounded annually, net of investment related expenses.

For measurement date 09/30/2018, amounts reported as changes of assumptions resulted from lowering the investment return from 7.65% to 7.60% per year compounded annually, net of investment related expenses.

For measurement date 09/30/2017, as required by Chapter 2015-157, Laws of Florida, the assumed rates of mortality have been changed from those in the July 1, 2015 FRS valuation report to those used in the July 1, 2016 FRS valuation report. Additionally, the investment return was lowered from 7.70% to 7.65% per year compounded annually, net of investment related expenses.

For measurement date 09/30/2016, amounts reported as changes of assumptions resulted from a special Experience Study. The following changes have been incorporated:

- Salary Scale – Reduced for service between 1-9 years.
- Normal Retirement rates – Modified, based on whether Credited Service exceeds or falls short of 25 years on the date of termination.
- Early Retirement rates – Reduce from 15.0% to 0.0%, i.e. assume no Early Retirements.
- Withdrawal – Change from age-based to rates based on Credited Service.
- Mortality – Incorporation of rates pursuant to Chapter 2015-157, Laws of Florida.
- Investment Return – Lowered from 7.75% to 7.70%.

For measurement date 09/30/2015, the inflation rate assumption was lowered from 4% to 3%.

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	\$ 11,359,528	\$ 11,358,164	\$ 1,364	\$ 13,820,705	82.18%
09/30/2018	\$ 9,277,568	\$ 9,303,118	\$ (25,550)	\$ 13,184,642	70.56%
09/30/2017	\$ 8,563,004	\$ 8,563,004	\$ -	\$ 13,626,274	62.84%
09/30/2016	\$ 8,528,110	\$ 8,475,832	\$ 52,278	\$ 13,167,794	64.37%
09/30/2015	\$ 8,676,637	\$ 8,728,916	\$ (52,279)	\$ 14,267,482	61.18%
09/30/2014	\$ 8,651,807	\$ 8,651,807	\$ -	\$ 12,179,211	71.04%
09/30/2013	\$ 8,140,920	\$ 8,140,920	\$ -	\$ 12,528,346	64.98%

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 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 Color, 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 Milliman's July 1, 2016 FRS valuation report for special risk employees. We feel this assumption sufficiently accommodates future mortality improvements.

Additionally, 75% of pre-retirement deaths are assumed to be service-incurred.

Termination Rates:

See table below. The assumed rates of termination were approved in conjunction with an actuarial experience study dated September 27, 2016.

Credited Service	% Terminating During the Year
<5	7.0%
5-8	5.0%
9+	2.5%

Disability Rates:

See table below. 75% of disabilities are assumed to be service-incurred. These rates were reviewed in conjunction with an actuarial experience study dated September 30, 2011 (no changes were made with the September 27, 2016 Experience Study).

Age	% Becoming Disabled During the Year
20	0.14%
25	0.15%
30	0.18%
35	0.23%
40	0.30%
45	0.51%
50+	1.00%

Early Retirement Rates:

Based on results of the September 27, 2016, Experience Study, no Members are assumed to elect Early Retirement.

Normal Retirement Rates:

Based on results of an Experience Study dated September 27, 2016, the below table reflects the assumed rates of retirement once a member attains Normal Retirement eligibility with at least 25 years of Credited Service:

Credited Service	Prior Rates	New Rates – 25 or more Years of Credited Service
25	100%	75%
26	100%	100%

Also as part of the September 27, 2016 Experience Study, the below table provides rates of retirement for members attaining Normal Retirement eligibility with less than 25 years of Credited Service:

Years Following Attainment of 52/10	Prior Rates	New Rates – Less than 25 Years of Credited Service
0	50%	10%
1	50%	10%
2	100%	10%
3+	100%	100%

Interest Rate:

7.65% per year compounded annually, net of investment related expenses. This assumption is approximately supported by the Fund's long-term expected rate of returns by asset class. We will continue to monitor this assumption to ensure it is in line with the actual plan experience.

Salary Increases:

According to the below table, based on the September 27, 2016 Experience Study.

Credited Service	Assumed Salary Increase
Less than 1 Year	10.0%
1-5 Years	7.5%
6-9 Years	6.0%
10 or more Years	4.5%

Payroll Growth:

2.64% per year for all bases created prior to 2011, 0.0% for all bases created thereafter. This is in compliance with Part VII of Chapter 112, Florida Statutes.

Funding Method:

Entry Age Normal Actuarial Cost Method. The following loads are utilized for determination of the Total Required Contribution:

- Interest – A half-year, based on the current 7.65% assumption.
- Salary – A full-year, based on the current 5.36% average increase assumption.

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Actuarial Asset Method:	The Actuarial Value of Assets utilizes a five year smoothing methodology. The annual difference between expected and actual investment earnings (Market Value, net of investment-related expenses), is phased-in over a five-year period.
Post Retirement COLA:	<i>Retired Police Officers prior to March 20, 2013 and Retired Firefighters prior to August 7, 2013:</i> 2% per year for Normal Retirement. <i>Police Officers eligible for Normal Retirement or with 24 years of service as of March 20, 2013, and Firefighters eligible for Normal Retirement as of August 7, 2013, or with 24 years of service as of December 28, 2013:</i> 2% per year for Normal Retirement. <i>All other Police Officers hired prior to March 20, 2013 and all other Firefighters hired prior to August 7, 2013:</i> 2.0% per year for Normal Retirement, but limited to eight (8) adjustments once the \$95,000 maximum benefit is realized. <i>Police Officers hired on or after March 20, 2013 and Firefighters hired on or after August 7, 2013:</i> None. Special note: Please refer to the July 5, 2017 and January 24, 2018 actuarial studies for a description of the COLA assumptions resulting from legal opinions adopted by the Board that differ from provisions set forth in the governing Ordinance.

SCHEDULE OF INVESTMENT RETURNS
Last 10 Fiscal Years

Fiscal Year Ended	Annual Money-Weighted Rate of Return Net of Investment Expense
09/30/2019	3.36%
09/30/2018	10.15%
09/30/2017	11.87%
09/30/2016	8.38%
09/30/2015	-0.44%
09/30/2014	11.72%
09/30/2013	17.51%

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: Five persons; two of whom shall be legal residents of the City of Hallandale Beach and who shall be appointed by the City Commission. One Member of the Board of Trustees shall be a police officer who shall be elected by a majority of police officers who are active members of the Plan. One member shall be a firefighter who shall be elected by a majority of the firefighters who are active employee members of the Plan. A fifth member of the Board shall be chosen by a majority of the previous four persons, and such person's name shall be submitted to the City Commission for appointment. The City Commission shall appoint the fifth member selected by the other four as ministerial duty.

Full-time employees who are classified as Police Officers or Firefighters participate as a condition of employment.

Plan Membership as of October 1, 2018:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	187
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	10
Active Plan Members	145
	342

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 Hallandale Beach Police Officers' and Firefighters' Personnel Retirement Trust 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: 9.5% of Salary.

Remaining amount required in order to pay current costs and amortize unfunded past service cost, if any, as provided in Part VII, Chapter 112, F.S.

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	2.30%	
Salary Increases	Service based	
Discount Rate	7.55%	
Investment Rate of Return	7.55%	

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.

75% of active deaths are assumed to be service-incurred.

The most recent actuarial experience study used to review the other significant assumptions was dated September 27, 2016.

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 1.90%.

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 ¹
Large Cap US Equity	42.50%	5.70%
Small/Mid Cap US Equity	10.00%	5.93%
Non-US Equity Developed	10.00%	5.20%
US Corps Bonds-Core	17.50%	1.80%
Real Estate	5.00%	6.00%
Hedge Funds	10.00%	3.90%
Private Equity	2.50%	10.90%
Private Debt	2.50%	3.80%
Total	100.00%	

¹ Please note that long term expected return of the total portfolio is greater than simply multiplying each of the above “Long Term Expected Real Rate of Returns” by their target allocation % and adding them together. Not only is the time horizon longer for an actuarial valuation relative to the time horizon over which the above projected returns were generated, but also there is an additional correlation resulting from a diversified portfolio that will provide additional returns.

Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.55 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	\$ 242,955,549	\$ 176,156,574	\$ 66,798,975
Changes for a Year:			
Service Cost	3,127,748	-	3,127,748
Interest	18,162,979	-	18,162,979
Differences between Expected and Actual Experience	4,267,373	-	4,267,373
Changes of assumptions	1,304,354	-	1,304,354
Changes of benefit terms	(40,488)	-	(40,488)
Contributions - Employer	-	10,704,582	(10,704,582)
Contributions - State	-	653,582	(653,582)
Contributions - Employee	-	1,312,967	(1,312,967)
Contributions - Buy Back	253,288	253,288	-
Net Investment Income	-	5,870,253	(5,870,253)
Benefit Payments, including Refunds of Employee Contributions	(14,112,474)	(14,112,474)	-
Administrative Expense	-	(233,562)	233,562
Net Changes	12,962,780	4,448,636	8,514,144
Reporting Period Ending September 30, 2020	\$ 255,918,329	\$ 180,605,210	\$ 75,313,119

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

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.55%	7.55%	8.55%
Sponsor's Net Pension Liability	\$ 104,085,381	\$ 75,313,119	\$ 51,694,817

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 \$19,534,495.

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	2,948,470	1,143,675
Changes of assumptions	3,674,742	-
Net difference between Projected and Actual Earnings on Pension Plan investments	-	4,774,604
Employer and State contributions subsequent to the measurement date	11,358,164	-
Total	\$ 17,981,376	\$ 5,918,279

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		\$	3,664,680
2021		\$	(1,160,658)
2022		\$	(1,011,504)
2023		\$	(787,585)
2024		\$	-
Thereafter		\$	-

**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 \$13,387,292.

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	4,893,669	762,450
Changes of assumptions	1,930,063	-
Net difference between Projected and Actual Earnings on Pension Plan investments	1,128,667	-
Employer and State contributions subsequent to the measurement date	TBD	-
Total	TBD	\$ 762,450

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		\$	1,724,999
2022		\$	1,874,153
2023		\$	2,098,072
2024		\$	1,492,725
2025		\$	-
Thereafter		\$	-

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	3,127,748	2,866,703	2,668,846
Interest	18,162,979	17,317,517	16,069,318
Changes of benefit terms	(40,488)	9,897,461	-
Differences between Expected and Actual Experience	4,267,373	3,386,280	(1,906,123)
Changes of assumptions	1,304,354	1,225,338	847,814
Contributions - Buy Back	253,288	208,015	136,829
Benefit Payments, including Refunds of Employee Contributions	(14,112,474)	(11,108,749)	(9,354,592)
Net Change in Total Pension Liability	12,962,780	23,792,565	8,462,092
Total Pension Liability - Beginning	242,955,549	219,162,984	210,700,892
Total Pension Liability - Ending (a)	\$255,918,329	\$242,955,549	\$219,162,984
Plan Fiduciary Net Position			
Contributions - Employer	10,704,582	8,666,930	7,933,609
Contributions - State	653,582	636,188	629,395
Contributions - Employee	1,312,967	1,252,541	1,294,496
Contributions - Buy Back	253,288	208,015	136,829
Net Investment Income	5,870,253	16,196,464	16,869,679
Benefit Payments, including Refunds of Employee Contributions	(14,112,474)	(11,108,749)	(9,354,592)
Administrative Expense	(233,562)	(219,333)	(183,827)
Net Change in Plan Fiduciary Net Position	4,448,636	15,632,056	17,325,589
Plan Fiduciary Net Position - Beginning	176,156,574	160,524,518	143,198,929
Plan Fiduciary Net Position - Ending (b)	\$180,605,210	\$176,156,574	\$160,524,518
Net Pension Liability - Ending (a) - (b)	\$ 75,313,119	\$ 66,798,975	\$ 58,638,466
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	70.57%	72.51%	73.24%
Covered Payroll ¹	\$ 13,820,705	\$ 13,184,642	\$ 13,626,274
Net Pension Liability as a percentage of Covered Payroll	544.93%	506.64%	430.33%

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

Reporting Period Ending	09/30/2017	09/30/2016
Measurement Date	<u>09/30/2016</u>	<u>09/30/2015</u>
Total Pension Liability		
Service Cost	2,198,923	2,114,287
Interest	14,732,084	13,946,642
Changes of benefit terms	-	-
Differences between Expected and Actual Experience	1,635,041	3,413,322
Changes of assumptions	8,988,193	-
Contributions - Buy Back	22,723	33,396
Benefit Payments, including Refunds of Employee Contributions	<u>(9,537,098)</u>	<u>(9,377,998)</u>
Net Change in Total Pension Liability	18,039,866	10,129,649
Total Pension Liability - Beginning	<u>192,661,026</u>	<u>182,531,377</u>
Total Pension Liability - Ending (a)	<u><u>\$210,700,892</u></u>	<u><u>\$192,661,026</u></u>
Plan Fiduciary Net Position		
Contributions - Employer	7,874,125	7,851,700
Contributions - State	601,707	673,170
Contributions - Employee	1,285,750	1,205,723
Contributions - Buy Back	22,723	33,396
Net Investment Income	10,988,258	(574,125)
Benefit Payments, including Refunds of Employee Contributions	(9,537,098)	(9,377,998)
Administrative Expense	<u>(148,100)</u>	<u>(137,847)</u>
Net Change in Plan Fiduciary Net Position	11,087,365	(325,981)
Plan Fiduciary Net Position - Beginning	<u>132,111,564</u>	<u>132,437,545</u>
Plan Fiduciary Net Position - Ending (b)	<u><u>\$143,198,929</u></u>	<u><u>\$132,111,564</u></u>
Net Pension Liability - Ending (a) - (b)	<u><u>\$ 67,501,963</u></u>	<u><u>\$ 60,549,462</u></u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	67.96%	68.57%
Covered Payroll ¹	\$ 13,167,794	\$ 14,267,482
Net Pension Liability as a percentage of Covered Payroll	512.63%	424.39%

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

Reporting Period Ending	09/30/2015	09/30/2014
Measurement Date	<u>09/30/2014</u>	<u>09/30/2013</u>
Total Pension Liability		
Service Cost	2,068,244	1,919,484
Interest	13,484,951	13,065,637
Changes of benefit terms	-	-
Differences between Expected and Actual Experience	-	-
Changes of assumptions	-	-
Contributions - Buy Back	-	-
Benefit Payments, including Refunds of Employee Contributions	<u>(9,905,885)</u>	<u>(9,540,860)</u>
Net Change in Total Pension Liability	5,647,310	5,444,261
Total Pension Liability - Beginning	<u>176,884,067</u>	<u>171,439,806</u>
Total Pension Liability - Ending (a)	<u><u>\$182,531,377</u></u>	<u><u>\$176,884,067</u></u>
Plan Fiduciary Net Position		
Contributions - Employer	8,192,937	7,520,029
Contributions - State	662,916	620,891
Contributions - Employee	1,190,421	1,225,133
Contributions - Buy Back	-	-
Net Investment Income	13,794,259	17,699,778
Benefit Payments, including Refunds of Employee Contributions	(9,905,885)	(9,540,860)
Administrative Expense	<u>(109,957)</u>	<u>(142,874)</u>
Net Change in Plan Fiduciary Net Position	13,824,691	17,382,098
Plan Fiduciary Net Position - Beginning	<u>118,612,854</u>	<u>101,230,756</u>
Plan Fiduciary Net Position - Ending (b)	<u><u>\$132,437,545</u></u>	<u><u>\$118,612,854</u></u>
Net Pension Liability - Ending (a) - (b)	<u><u>\$ 50,093,832</u></u>	<u><u>\$ 58,271,213</u></u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	72.56%	67.06%
Covered Payroll ¹	\$ 12,179,211	\$ 12,528,346
Net Pension Liability as a percentage of Covered Payroll	411.31%	465.11%

Notes to Schedule of Changes in Net Pension Liability and Related Ratios

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 09/30/2019, 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.

For measurement date 09/30/2018, amounts reported as changes of benefit terms resulted from legal opinions adopted by the Board that expand on provisions set forth in the governing Ordinance. More details can be found in the Actuarial Valuation report as of October 1, 2017.

Changes of assumptions:

For measurement date 09/30/2019, amounts reported as changes of assumptions resulted from lowering the investment return from 7.60% to 7.55% per year compounded annually, net of investment related expenses.

For measurement date 09/30/2018, amounts reported as changes of assumptions resulted from lowering the investment return from 7.65% to 7.60% per year compounded annually, net of investment related expenses.

For measurement date 09/30/2017, as required by Chapter 2015-157, Laws of Florida, the assumed rates of mortality have been changed from those in the July 1, 2015 FRS valuation report to those used in the July 1, 2016 FRS valuation report. Additionally, the investment return was lowered from 7.70% to 7.65% per year compounded annually, net of investment related expenses.

For measurement date 09/30/2016, amounts reported as changes of assumptions resulted from a special Experience Study. The following changes have been incorporated:

- Salary Scale – Reduced for service between 1-9 years.
- Normal Retirement rates – Modified, based on whether Credited Service exceeds or falls short of 25 years on the date of termination.
- Early Retirement rates – Reduce from 15.0% to 0.0%, i.e. assume no Early Retirements.
- Withdrawal – Change from age-based to rates based on Credited Service.
- Mortality – Incorporation of rates pursuant to Chapter 2015-157, Laws of Florida.
- Investment Return – Lowered from 7.75% to 7.70%.

For measurement date 09/30/2015, the inflation rate assumption was lowered from 4% to 3%.

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	\$ 11,359,528	\$ 11,358,164	\$ 1,364	\$ 13,820,705	82.18%
09/30/2018	\$ 9,277,568	\$ 9,303,118	\$ (25,550)	\$ 13,184,642	70.56%
09/30/2017	\$ 8,563,004	\$ 8,563,004	\$ -	\$ 13,626,274	62.84%
09/30/2016	\$ 8,528,110	\$ 8,475,832	\$ 52,278	\$ 13,167,794	64.37%
09/30/2015	\$ 8,676,637	\$ 8,728,916	\$ (52,279)	\$ 14,267,482	61.18%
09/30/2014	\$ 8,651,807	\$ 8,651,807	\$ -	\$ 12,179,211	71.04%
09/30/2013	\$ 8,140,920	\$ 8,140,920	\$ -	\$ 12,528,346	64.98%

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 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 Color, 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 Milliman's July 1, 2016 FRS valuation report for special risk employees.

We feel this assumption sufficiently accommodates future mortality improvements.

Additionally, 75% of pre-retirement deaths are assumed to be service-incurred.

Termination Rates:

See table below. The assumed rates of termination were approved in conjunction with an actuarial experience study dated September 27, 2016.

Credited Service	% Terminating During the Year
<5	7.0%
5-8	5.0%
9+	2.5%

Disability Rates:

See table below. 75% of disabilities are assumed to be service-incurred. These rates were reviewed in conjunction with an actuarial experience study dated September 30, 2011 (no changes were made with the September 27, 2016 Experience Study).

Age	% Becoming Disabled During the Year
20	0.14%
25	0.15%
30	0.18%
35	0.23%
40	0.30%
45	0.51%
50+	1.00%

Early Retirement Rates:

Based on results of the September 27, 2016, Experience Study, no Members are assumed to elect Early Retirement.

Normal Retirement Rates:

Based on results of an Experience Study dated September 27, 2016, the below table reflects the assumed rates of retirement once a member attains Normal Retirement eligibility with at least 25 years of Credited Service:

Credited Service	Prior Rates	New Rates – 25 or more Years of Credited Service
25	100%	75%
26	100%	100%

Also as part of the September 27, 2016 Experience Study, the below table provides rates of retirement for members attaining Normal Retirement eligibility with less than 25 years of Credited Service:

Years Following Attainment of 52/10	Prior Rates	New Rates – Less than 25 Years of Credited Service
0	50%	10%
1	50%	10%
2	100%	10%
3+	100%	100%

Interest Rate:

7.65% per year compounded annually, net of investment related expenses. This assumption is approximately supported by the Fund's long-term expected rate of returns by asset class. We will continue to monitor this assumption to ensure it is in line with the actual plan experience.

Salary Increases:

According to the below table, based on the September 27, 2016 Experience Study.

Credited Service	Assumed Salary Increase
Less than 1 Year	10.0%
1-5 Years	7.5%
6-9 Years	6.0%
10 or more Years	4.5%

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Payroll Growth:	2.64% per year for all bases created prior to 2011, 0.0% for all bases created thereafter. This is in compliance with Part VII of Chapter 112, Florida Statutes.
Funding Method:	Entry Age Normal Actuarial Cost Method. The following loads are utilized for determination of the Total Required Contribution: - Interest – A half-year, based on the current 7.65% assumption. - Salary – A full-year, based on the current 5.36% average increase assumption.
Actuarial Asset Method:	The Actuarial Value of Assets utilizes a five year smoothing methodology. The annual difference between expected and actual investment earnings (Market Value, net of investment-related expenses), is phased-in over a five-year period.
Post Retirement COLA:	<i>Retired Police Officers prior to March 20, 2013 and Retired Firefighters prior to August 7, 2013:</i> 2% per year for Normal Retirement. <i>Police Officers eligible for Normal Retirement or with 24 years of service as of March 20, 2013, and Firefighters eligible for Normal Retirement as of August 7, 2013, or with 24 years of service as of December 28, 2013:</i> 2% per year for Normal Retirement. <i>All other Police Officers hired prior to March 20, 2013 and all other Firefighters hired prior to August 7, 2013:</i> 2.0% per year for Normal Retirement, but limited to eight (8) adjustments once the \$95,000 maximum benefit is realized. <i>Police Officers hired on or after March 20, 2013 and Firefighters hired on or after August 7, 2013:</i> None. Special note: Please refer to the July 5, 2017 and January 24, 2018 actuarial studies for a description of the COLA assumptions resulting from legal opinions adopted by the Board that differ from provisions set forth in the governing Ordinance.

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	\$ 58,638,466	\$ 7,553,127	\$ 19,632,046	\$ -
Employer and State Contributions made after 09/30/2018	-	-	11,358,164	-
Total Pension Liability Factors:				
Service Cost	2,866,703	-	-	2,866,703
Interest	17,317,517	-	-	17,317,517
Changes in benefit terms	9,897,461	-	-	9,897,461
Contributions - Buy Back	208,015	-	-	208,015
Differences between Expected and Actual Experience with regard to economic or demographic assumptions	3,386,280	-	3,386,280	-
Current year amortization of experience difference	-	(381,225)	(1,255,330)	874,105
Change in assumptions about future economic or demographic factors or other inputs	1,225,338	-	1,225,338	-
Current year amortization of change in assumptions	-	-	(2,722,944)	2,722,944
Benefit Payments, including Refunds of Employee Contributions	(11,108,749)	-	-	-
Net change	<u>23,792,565</u>	<u>(381,225)</u>	<u>11,991,508</u>	<u>33,886,745</u>
Plan Fiduciary Net Position:				
Contributions - Employer	8,666,930	-	(8,666,930)	-
Contributions - State	636,188	-	(636,188)	-
Contributions - Employee	1,252,541	-	-	(1,252,541)
Contributions - Buy Back	208,015	-	-	(208,015)
Projected Net Investment Income	12,258,537	-	-	(12,258,537)
Difference between projected and actual earnings on Pension Plan investments	3,937,927	3,937,927	-	-
Current year amortization	-	(3,022,020)	(2,169,530)	(852,490)
Benefit Payments, including Refunds of Employee Contributions	(11,108,749)	-	-	-
Administrative Expenses	(219,333)	-	-	219,333
Net change	<u>15,632,056</u>	<u>915,907</u>	<u>(11,472,648)</u>	<u>(14,352,250)</u>
Ending Balance	<u>\$ 66,798,975</u>	<u>\$ 8,087,809</u>	<u>\$ 20,150,906</u>	<u>\$ 19,534,495</u>

PRELIMINARY COMPONENTS OF PENSION EXPENSE
FISCAL YEAR SEPTEMBER 30, 2020

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning balance	\$ 66,798,975	\$ 8,087,809	\$ 20,150,906	\$ -
Employer and State Contributions made after 09/30/2019	-	-	TBD*	-
Total Pension Liability Factors:				
Service Cost	3,127,748	-	-	3,127,748
Interest	18,162,979	-	-	18,162,979
Changes in benefit terms	(40,488)	-	-	(40,488)
Contributions - Buy Back	253,288	-	-	253,288
Differences between Expected and Actual Experience with regard to economic or demographic assumptions	4,267,373	-	4,267,373	-
Current year amortization of experience difference	-	(381,225)	(2,322,174)	1,940,949
Change in assumptions about future economic or demographic factors or other inputs	1,304,354	-	1,304,354	-
Current year amortization of change in assumptions	-	-	(3,049,033)	3,049,033
Benefit Payments, including Refunds of Employee Contributions	(14,112,474)	-	-	-
Net change	<u>12,962,780</u>	<u>(381,225)</u>	<u>200,520</u>	<u>26,493,509</u>
Plan Fiduciary Net Position:				
Contributions - Employer	10,704,582	-	(10,704,582)	-
Contributions - State	653,582	-	(653,582)	-
Contributions - Employee	1,312,967	-	-	(1,312,967)
Contributions - Buy Back	253,288	-	-	(253,288)
Projected Net Investment Income	13,333,878	-	-	(13,333,878)
Difference between projected and actual earnings on Pension Plan investments	(7,463,625)	-	7,463,625	-
Current year amortization	-	(2,101,901)	(3,662,255)	1,560,354
Benefit Payments, including Refunds of Employee Contributions	(14,112,474)	-	-	-
Administrative Expenses	(233,562)	-	-	233,562
Net change	<u>4,448,636</u>	<u>(2,101,901)</u>	<u>(7,556,794)</u>	<u>(13,106,217)</u>
Ending Balance	<u>\$ 75,313,119</u>	<u>\$ 5,604,683</u>	<u>TBD</u>	<u>\$ 13,387,292</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
2019	\$ 7,463,625	5	\$ -	\$ 1,492,725	\$ 1,492,725	\$ 1,492,725	\$ 1,492,725	\$ 1,492,725	\$ -	\$ -	\$ -	\$ -
2018	\$ (3,937,927)	5	\$ (787,587)	\$ (787,585)	\$ (787,585)	\$ (787,585)	\$ (787,585)	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ (5,825,809)	5	\$ (1,165,162)	\$ (1,165,162)	\$ (1,165,162)	\$ (1,165,162)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ (745,771)	5	\$ (149,154)	\$ (149,154)	\$ (149,154)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 10,847,650	5	\$ 2,169,530	\$ 2,169,530	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2014	\$ (4,600,584)	5	\$ (920,117)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ (852,490)	\$ 1,560,354	\$ (609,176)	\$ (460,022)	\$ 705,140	\$ 1,492,725	\$ -	\$ -	\$ -	\$ -

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
2019	\$ 1,304,354	4	\$ -	\$ 326,087	\$ 326,089	\$ 326,089	\$ 326,089	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ 1,225,338	4	\$ 306,333	\$ 306,335	\$ 306,335	\$ 306,335	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ 847,814	5	\$ 169,563	\$ 169,563	\$ 169,563	\$ 169,563	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ 8,988,193	4	\$ 2,247,048	\$ 2,247,048	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 2,722,944	\$ 3,049,033	\$ 801,987	\$ 801,987	\$ 326,089	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

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		Recognition										
	Expected and Actual Experience	Period (Years)	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
2019	\$ 4,267,373	4	\$ -	\$ 1,066,844	\$ 1,066,843	\$ 1,066,843	\$ 1,066,843	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ 3,386,280	4	\$ 846,570	\$ 846,570	\$ 846,570	\$ 846,570	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ (1,906,123)	5	\$ (381,225)	\$ (381,225)	\$ (381,225)	\$ (381,225)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ 1,635,041	4	\$ 408,760	\$ 408,760	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 874,105	\$ 1,940,949	\$ 1,532,188	\$ 1,532,188	\$ 1,066,843	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -