

CITY OF HIALEAH
EMPLOYEES' RETIREMENT SYSTEM
ACTUARIAL VALUATION
AS OF OCTOBER 1, 2019
CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING SEPTEMBER 30, 2021



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

July 1, 2020

Board of Trustees
City of Hialeah
Employees' Retirement System

Re: City of Hialeah Employees' Retirement System

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Hialeah Employees' Retirement System (Retirement System). The 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. Use of the results for other purposes may not be applicable and may produce significantly different results.

The valuation has 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 reflects laws and regulations issued to date pursuant to the provisions of Chapter 112, 175, and 185 Florida Statutes, as well as applicable federal laws and regulations. In our opinion, the assumptions used in the valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience.

The funding percentages and unfunded accrued liability as measured based on the actuarial value of assets will differ from similar measures based on the market value of assets. These measures, as provided, are appropriate for determining the adequacy of future contributions, but may not be appropriate for the purpose of settling a portion or all of the Plan's liabilities. In reviewing the results presented herein, it should be noted that there are risks that may not be inherently apparent to the reader that should be carefully considered. While providing numerical analysis of such risks is out of the scope of the valuation, additional risks are identified in the Discussion of Risks section.

Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements.

In conducting the valuation, we have relied on personnel, plan design, and asset information supplied by the Board of Trustees and the City of Hialeah, 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 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.

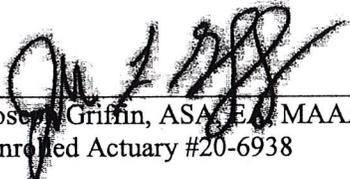
To our knowledge, no associate of Foster & Foster, Inc. working on valuations of the program has any direct financial interest or indirect material interest in the City of Hialeah, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Employees' Retirement System. Thus,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

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

Respectfully submitted,

Foster & Foster, Inc.

By:


Joseph Griffin, ASA, EA, MAAA
Enrolled Actuary #20-6938

By:


Timothy Bower, EA, MAAA, FCA
Enrolled Actuary #20-7204

By:


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Enclosures

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SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Hialeah Employees' Retirement System, performed as of October 1, 2019, has been completed and the results are presented in this Report. The contribution amounts set forth herein are applicable to the plan/fiscal year ending September 30, 2021. The contributions have been developed assuming that the City will make their contribution on December 31, 2020.

The contribution requirements, compared with those developed from a combination of the May 21, 2020 Actuarial Impact Statements, reflecting Ordinances 2020-016 and 2020-017, are as follows:

Valuation Date Applicable to Fiscal Year Ending	10/1/2019 9/30/2021	10/1/2018 9/30/2020
Total Required Contribution	\$39,085,318	\$37,819,181
% of Projected Annual Payroll	74.95%	73.03%
Less Member Contributions (Est.)	4,633,031	3,717,883
% of Projected Annual Payroll	8.88%	7.18%
City And State Required Contribution	34,452,287	34,101,298
% of Projected Annual Payroll	66.07%	65.85%
State Contribution (Est.) ¹	461,877	461,877
% of Projected Annual Payroll	0.89%	0.89%
City Required Contribution	\$33,990,410	\$33,639,421
% of Projected Annual Payroll	65.18%	64.96%

¹ Represents the amount transferred from the Share Plan each year.

Summary

As displayed above, the Total Required Contribution reflects a slight increase when compared to the prior year results reflecting the May 21, 2020 Actuarial Impact Statements. The increase is largely attributable to unfavorable plan experience and a decrease in the assumed rate of return from 7.80% to 7.70%. Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. Actuarial losses were primarily due to adverse investment performance. The return on the Actuarial Value of Assets was 6.36% compared to the assumed rate of return of 7.80%. Further details are shown in the Detailed Actuarial (Gain)/Loss Analysis section of the report.

Accumulated Annuity Savings Member Contributions

A portion of the member contributions received by the Retirement System is used to fund the annuity portion of each member's retirement allowance. Upon retirement the member has an option of receiving an annuity equal to the actuarial equivalent of the member's accumulated contributions made to the Annuity Saving Fund (ASF) or a lump sum amount. The actuarial accrued liability for this benefit for active members is set equal to their corresponding ASF balance. As of October 1, 2019, ASF balances for all members totaled \$127,749,579.85. Of this amount, accumulated active member contributions totaled \$60,475,616.95 and accumulated retiree contributions (including accumulated contributions for non-active, non-retired members) totaled \$67,273,962.90. The arithmetic average of the annual yields on the market value of assets for the period October 1, 2014 through September 30, 2019 is 6.21%. Therefore, accumulated member contribution and DROP accounts should be credited with interest at the rate of 6.21%, less an adjustment for expenses, for the 2019/2020 plan year.

Discussion of Risk

In reviewing this report, it should be noted that there are risks that may not be inherently apparent to the reader that should be carefully considered. It is important to note that the Retirement System was closed to new general employees in 2012. Due to a decline in new membership, the Retirement System will mature more rapidly than open systems. Closed or partially closed plans have a shorter time horizon to pay off unfunded liabilities and recover from adverse experience. The maturing nature and shortening lifetime of the Retirement System are important considerations when reviewing investment and the other risks outlined in the Discussion of Risk section of this report.

CHANGES SINCE PRIOR VALUATION

Plan Changes

- I. Chapter 2019-21, Laws of Florida was signed into effect granting certain disability benefits to firefighters participating in an employer-sponsored retirement plan. Effective July 1, 2019, "the retirement plan must consider the firefighter totally and permanently disabled in the line of duty if he or she meets the retirement plan's definition of totally and permanently disabled due to the diagnosis of cancer or circumstances that arise out of the treatment of cancer." For this purpose, "cancer" is as defined in Section 112.1816(1), Florida Statutes. Please note that the benefit changes only relate to the disability benefits for the Pension Fund and do not provide for other additional benefits that are provided for in Florida Statutes Section 112.1816.
- II. Ordinance 2019-090 amended benefits for Firefighters effective November 12, 2019.
 - 1.) **Members eligible for Normal Retirement as of November 12, 2019** – Members who are retirement eligible as of November 12, 2019 will have no change to the benefits provided under the plan. Normal retirement eligibility is defined as follows:
 - a. 20 years of service with 70 points for those hired before November 15, 2013.
 - b. 20 years of service with 76 points for those hired on after November 15, 2013.
 - c. Age 55 with 10 years of service
 - d. Age 52 with 25 years of service
 - 2.) **Members not eligible for Normal Retirement as of November 12, 2019** – Accrued benefits are frozen as of November 12, 2019 and members are 100% vested in their frozen benefit. Frozen benefits shall be payable upon reaching Normal Retirement eligibility as defined in item 1 above. Benefits will accrue after the November 12, 2019 as follows:
 - a. The benefit accrual rate will be 2.75% for each year of Credited Service earned on and after November 12, 2019.
 - b. Final average compensation will be the average highest annual compensation during highest 5 years of credited service, but no less than the 3-year average as of November 12, 2019.
 - c. Compensation after November 12, 2019 will be base pay only.
 - d. The maximum benefit is 79.5% of Average Final Compensation. However, the minimum benefit, regardless of type of retirement, will be 2.75% of final average compensation for all years of Credited Service.
 - e. Benefits earned after November 12, 2019 shall be payable upon reaching the earlier age 55 with 10 years of service and age 52 with 25 years of service.
 - 3.) As of November 12, 2019, Firefighters are prohibited from purchasing membership credit service time. Any purchase made prior to the November 12, 2019 shall be irrevocable, and any previous purchase of membership credit service time cannot be sold back to the retirement plan.
 - 4.) The eligibility to enter DROP is age 52 with 25 years of service and the maximum DROP participation period is limited to 3 years for those entering DROP after November 12, 2019.
 - 5.) Firefighters who entered the DROP on or after February 28, 2016 and prior to November 12, 2019 may extend DROP participation for up to two additional years for a total of 5 years.
 - 6.) Firefighter member contributions may be made in lieu of or in addition to annuity fund contributions.

III. Ordinance 2020-016 amended benefits for Firefighters effective June 4, 2020. The benefit changes apply to those firefighters that have not reached Normal Retirement date as of November 12, 2019 unless otherwise noted.

- 1.) As of the June 4, 2020, compensation for firefighters shall include specialty pay received by the member, up to 5.0% of the base salary.
- 2.) As of the June 4, 2020, members who separate from the City prior to vesting may obtain a refund of member contributions made on and after June 4, 2020, with interest at 3.0% per year, in lieu of receiving benefits accrued after November 12, 2019 from the Plan.
- 3.) Firefighters who entered the DROP on or after February 28, 2016 and prior to November 12, 2019 may extend DROP participation for up to 2 additional years for a total of 5 years.
- 4.) The maximum DROP participation period shall be 60 months for members who enter the DROP on and after February 28, 2016.
- 5.) **Members eligible for full retirement benefit as of November 15, 2013 (i.e., members who have 20 years of credited service and 70 points when age plus years of credited service are combined)**

Member contributions shall be as follows:

- i. June 4, 2020 – September 30, 2020: 2.0% of compensation
- ii. October 1, 2020 – September 30, 2021: 4.0% of compensation
- iii. Beginning on October 1, 2021: 6.0% of compensation

- 6.) **Members not eligible for full retirement benefit as of November 15, 2013 (i.e., members who do not have 20 years of credited service and 70 points when age plus years of credited service are combined)**

Member contributions shall be as follows:

- i. June 4, 2020– September 30, 2020: 6.0% of compensation
- ii. October 1, 2020 – September 30, 2021: 8.0% of compensation
- iii. Beginning on October 1, 2021: 10.0% of compensation

- 7.) **Members with 16 years of actual service (excluding service purchases), less than 20 years of credited service and at least 66 points on November 12, 2019**

- a. The benefit accrual rate shall be 2.75% for each year of Credited service earned after attaining 20 years of service.
- b. The maximum benefit is 79.5% of Average Final Compensation. However, the minimum benefit, regardless of type of retirement, will be 2.75% of final average compensation for all years of Credited Service.
- d. Members shall be eligible to participate in the DROP for a maximum of five years.

- 8.) **Members with 16 years of actual service (excluding service purchases), at least 20 years of credited service, and at least 66 points on November 12, 2019**

- a. The benefit accrual rate shall be 3.0% for each year of Credited Service as of November 12, 2019, and 2.75% for each year of Credited Service earned after November 12, 2019.
- b. The maximum benefit is 79.5% of Average Final Compensation. However, the minimum benefit, regardless of type of retirement, will be 2.75% of final average compensation for all years of Credited Service.
- c. Members shall be eligible to participate in the DROP for a maximum of five years.

9.) Members with 16 years of actual service (excluding purchased service) and less than 66 points on November 12, 2019

- a. Members shall be eligible for Normal Retirement upon reaching 27 years of Credited Service, regardless of age
- b. Upon reaching 25 years of actual service, members shall be eligible to purchase up to 2 years of membership credited service time (not to exceed the maximum of 4 years of purchased service)
- c. Members shall be eligible to participant in the DROP for a maximum of five years upon completion of 27 years of actual service

10.) Members with 10 years of actual service (excluding purchased service), but less than 16 years of actual service (excluding purchased service) on November 12, 2019

- a. Members shall be eligible for Normal Retirement upon reaching 27 years of Credited Service, regardless of age
- b. Members shall be eligible to participant in the DROP for a maximum of five years upon completion of 27 years of actual service

IV. Ordinance 2020-017 amended benefits for police officers effective June 4, 2020. For those police officers that did not have 16 years of actual service (excluding service purchases) and at least 66 points when age plus years of credited service are combined as of October 1, 2018, compensation shall include specialty pay received by the member, up to 5.0% of the base salary.

Actuarial Assumption/Method Changes

For the change in item I. above, the in-line-of duty assumption was increased from 85% of to 100% of disablements for firefighters (effective with the Actuarial Impact Statement dated May 21, 2020).

For the plan changes in item II above, the assumed rates of retirement for firefighters not eligible to retire on September 24, 2019 were changed (refer to the Actuarial Impact Statement dated September 19, 2019).

For the plan changes in item III above, it is assumed that all firefighters will have specialty pay that equals or exceeds 5.0% of base salary. In addition, rates of retirements for firefighters were changed for members who did not have 16 years of service and 66 points as of November 12, 2019 (updated from the estimated effective date of September 24, 2019 used in the prior Actuarial Impact Statement) as follows:

Members with 10 years of actual service as of November 12, 2019

Assumed annual rates of retirement are shown in the table below:

	Age < 65	Age ≥ 65
	0%	100%
	7.5%	100%
	12.5%	100%
	50%	100%
	33.3%	100%
	100%	100%

There are no rates of retirement prior to attainment of age 55 and 10 years of Credited Service or age 52 and 25 years of Credited Service. Rates are increased by 30 percent upon first eligibility for Normal Retirement for Firefighters with 16 or more years of service on November 12, 2019.

Members with less than 10 years of actual service as of November 12, 2019

Assumed annual rates of retirement are shown in the table below:

	Age < 65	Age ≥ 65
	0%	100%
	7.5%	100%
	12.5%	100%
	50%	100%
	33.3%	100%
	100%	100%

There are no rates of retirement prior to attainment of age 55 and 10 years of Credited Service or age 52 and 25 years of Credited Service.

For the plan changes in item IV above, it is assumed that all police officers will have specialty pay that equals or exceeds 5.0% of base salary.

In addition to the assumption changes above, the investment return assumption was decreased from 7.8% to 7.7%, net of investment related expenses. Also, an administrative expense assumption was added and is equal to the prior year's expenses adjusted to the fiscal year in which they are expected to be paid.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

Total Plan

	New Assump 10/1/2019	Old Assump 10/1/2019	10/1/2018
A. Participant Data			
Actives	780	780	816
Service Retirees	1,328	1,328	1,318
DROP Retirees	35	35	40
Beneficiaries	53	53	53
Disability Retirees	166	166	176
Terminated Vested	<u>282</u>	<u>282</u>	<u>248</u>
Total	2,644	2,644	2,651
Total Annual Payroll	\$50,666,971	\$50,666,971	\$52,838,765
Payroll Under Assumed Ret. Age	\$49,571,917	\$45,423,849	\$51,788,270
Annual Rate of Payments to:			
Service Retirees	55,267,983	55,267,983	53,580,873
DROP Retirees	2,687,427	2,687,427	3,001,960
Beneficiaries	1,554,303	1,554,303	1,498,237
Disability Retirees	5,111,286	5,111,286	5,247,426
Terminated Vested	2,660,988	2,660,988	2,057,416
B. Assets			
Actuarial Value (AVA) ¹	708,987,985	708,987,985	696,946,890
Market Value (MVA) ¹	689,070,423	689,070,423	706,113,130
C. Liabilities			
Present Value of Benefits			
Actives			
Retirement Benefits	212,137,355	208,567,081	212,460,416
Disability Benefits	9,628,058	9,491,640	9,431,718
Death Benefits	2,615,541	2,571,261	2,651,060
Vested Benefits	3,226,507	3,151,667	3,700,346
Refund of Contributions	1,122,979	1,119,204	1,012,286
Service Retirees	583,401,814	578,569,030	563,727,012
DROP Retirees ¹	41,538,604	41,223,769	43,947,180
Beneficiaries	9,757,721	9,696,385	10,176,605
Disability Retirees	41,749,449	41,477,674	43,029,134
Terminated Vested	14,364,814	14,127,620	11,353,198
Annuity Savings/Reserve	<u>127,749,580</u>	<u>127,749,580</u>	<u>122,453,449</u>
Total	1,047,292,422	1,037,744,911	1,023,942,404

C. Liabilities - (Continued)	Total Plan		
	New Assump <u>10/1/2019</u>	Old Assump <u>10/1/2019</u>	<u>10/1/2018</u>
Present Value of Future Salaries	404,669,480	370,979,755	384,067,571
Normal Cost (Retirement)	5,437,972	5,297,915	5,473,100
Normal Cost (Disability)	541,724	535,033	524,551
Normal Cost (Death)	98,401	97,129	97,509
Normal Cost (Vesting)	814,971	798,960	795,856
Normal Cost (Refunds)	<u>128,757</u>	<u>125,121</u>	<u>120,128</u>
Total Normal Cost	7,021,825	6,854,158	7,011,144
Present Value of Future Normal Costs	52,372,383	50,769,095	52,503,930
Accrued Liability (Retirement)	172,225,237	170,014,208	168,484,992
Accrued Liability (Disability)	5,100,551	4,987,026	5,035,963
Accrued Liability (Death)	1,822,494	1,798,532	1,875,348
Accrued Liability (Vesting)	(2,276,273)	(2,160,663)	1,006,665
Accrued Liability (Refunds)	(513,952)	(507,345)	348,928
Accrued Liability (Inactives) ¹	690,812,402	685,094,478	672,233,129
Annuity Savings	<u>127,749,580</u>	<u>127,749,580</u>	<u>122,453,449</u>
Total Actuarial Accrued Liability (AL)	994,920,039	986,975,816	971,438,474
Unfunded Actuarial Accrued Liability (UAAL)	285,932,054	277,987,831	274,491,584
Funded Ratio (AVA / AL)	71.3%	71.8%	71.7%

	Total Plan		
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	690,812,402	685,094,478	672,233,129
Actives	98,609,948	98,353,767	109,688,604
Member Contributions	<u>140,487,804</u>	<u>140,487,804</u>	<u>128,100,632</u>
Total	929,910,154	923,936,049	910,022,365
Non-vested Accrued Benefits	<u>39,693,693</u>	<u>37,785,417</u>	<u>40,597,956</u>
Total Present Value Accrued Benefits (PVAB)	969,603,847	961,721,466	950,620,321
Funded Ratio (MVA / PVAB)	71.1%	71.6%	74.3%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:			
Plan Amendments	0	0	
Assumption Changes	7,882,381	0	
New Accrued Benefits	0	10,782,834	
Benefits Paid	0	(71,058,782)	
Interest	0	71,377,093	
Other	<u>0</u>	<u>0</u>	
Total	7,882,381	11,101,145	

Total Plan

	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	\$7,525,188	\$7,347,206	\$7,701,271
% of Total Annual Payroll	14.43	14.09	14.87
Administrative Expenses ²	668,732	668,887	0
% of Total Annual Payroll	1.28	1.28	0.00
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 29 years (as of 10/1/2019) ²	30,891,398	30,216,004	30,117,910
% of Total Annual Payroll	59.24	57.94	58.16
Total Required Contribution	39,085,318	38,232,097	37,819,181
% of Total Annual Payroll	74.95	73.31	73.03
Expected Member Contributions ³	4,633,031	4,631,956	3,717,883
% of Total Annual Payroll	8.88	8.88	7.18
Expected City and State Contribution	34,452,287	33,600,141	34,101,298
% of Total Annual Payroll	66.07	64.43	65.85

F. Past Contributions

Plan Years Ending:	<u>9/30/2019</u>
Total Required Contribution	35,449,248
City and State Requirement	32,240,824
Actual Contributions Made:	
Members	3,208,424
City	31,778,947
Share Plan	<u>461,877</u>
Total	35,449,248

G. Net Actuarial (Gain)/Loss 11,643,570

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

² Contributions are adjusted to reflect payments made on December 31.

Total Plan

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	285,932,054
2020	276,904,231
2021	268,784,166
2028	214,415,765
2035	117,558,378
2042	27,592,389
2049	0

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	9/30/2019	3.73%	5.12%
Year Ended	9/30/2018	4.92%	5.04%
Year Ended	9/30/2017	4.22%	4.98%
Year Ended	9/30/2016	7.59%	5.05%
Year Ended	9/30/2015	1.03%	7.50%

(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	2.13%	6.36%	7.80%
Year Ended	9/30/2018	9.17%	7.92%	8.00%
Year Ended	9/30/2017	11.22%	8.31%	8.00%
Year Ended	9/30/2016	8.08%	9.13%	8.00%
Year Ended	9/30/2015	0.46%	8.66%	8.00%

General Employees

	New Assump <u>10/1/2019</u>	Old Assump <u>10/1/2019</u>	<u>10/1/2018</u>
A. Participant Data			
Actives	318	318	343
Service Retirees	826	826	830
DROP Retirees	0	0	0
Beneficiaries	33	33	34
Disability Retirees	49	49	56
Terminated Vested	<u>119</u>	<u>119</u>	<u>116</u>
Total	1,345	1,345	1,379
Total Annual Payroll	\$17,316,559	\$17,316,559	\$18,022,014
Payroll Under Assumed Ret. Age	16,840,431	15,485,630	17,564,747
Annual Rate of Payments to:			
Service Retirees	27,407,553	27,407,553	27,153,134
DROP Retirees	0	0	0
Beneficiaries	726,981	726,981	719,331
Disability Retirees	936,643	936,643	1,021,053
Terminated Vested	1,016,265	1,016,265	911,456
B. Liabilities			
Present Value of Benefits			
Actives			
Retirement Benefits	61,222,670	60,262,536	62,304,091
Disability Benefits	1,071,526	1,055,327	1,066,860
Death Benefits	538,707	533,395	532,132
Vested Benefits	1,360,637	1,336,331	1,695,651
Refund of Contributions	301,304	300,112	396,226
Service Retirees	284,074,950	281,751,515	281,507,272
DROP Retirees ¹	0	0	0
Beneficiaries	5,980,871	5,940,414	5,816,079
Disability Retirees	7,178,457	7,132,705	7,671,957
Terminated Vested	6,041,444	5,946,631	5,729,376
Annuity Savings/Reserve	<u>42,878,732</u>	<u>42,878,732</u>	<u>41,829,792</u>
Total	410,649,298	407,137,698	408,549,436

General Employees

B. 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	141,504,466	127,424,583	135,870,931
Normal Cost (Retirement)	1,468,591	1,414,683	1,507,446
Normal Cost (Disability)	52,740	51,705	53,151
Normal Cost (Death)	18,393	18,211	18,650
Normal Cost (Vesting)	555,579	540,921	550,876
Normal Cost (Refunds)	<u>10,757</u>	<u>11,081</u>	<u>14,947</u>
Total Normal Cost	2,106,060	2,036,601	2,145,070
Present Value of Future Normal Costs	13,856,009	12,867,258	14,055,286
Accrued Liability (Retirement)	51,883,883	51,680,876	50,615,306
Accrued Liability (Disability)	662,745	664,506	653,771
Accrued Liability (Death)	387,059	387,253	377,695
Accrued Liability (Vesting)	(1,878,803)	(1,724,831)	237,423
Accrued Liability (Refunds)	(416,049)	(387,361)	55,479
Accrued Liability (Inactives) ¹	303,275,722	300,771,265	300,724,684
Annuity Savings/Reserve	<u>42,878,732</u>	<u>42,878,732</u>	<u>41,829,792</u>
Total Actuarial Accrued Liability (AL)	396,793,289	394,270,440	394,494,150

General Employees

C. 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	303,275,722	300,771,265	300,724,684
Actives	29,120,499	28,647,380	33,536,072
Member Contributions	<u>48,143,965</u>	<u>48,143,965</u>	<u>43,896,081</u>
Total	380,540,186	377,562,610	378,156,837
Non-vested Accrued Benefits	<u>13,751,097</u>	<u>13,562,987</u>	<u>14,486,932</u>
Total Present Value			
Accrued Benefits (PVAB)	394,291,283	391,125,597	392,643,769

Police Officers

	New Assump <u>10/1/2019</u>	Old Assump <u>10/1/2019</u>	<u>10/1/2018</u>
A. Participant Data			
Actives	268	268	272
Service Retirees	324	324	321
DROP Retirees	4	4	7
Beneficiaries	14	14	12
Disability Retirees	44	44	46
Terminated Vested	<u>129</u>	<u>129</u>	<u>107</u>
Total	783	783	765
Total Annual Payroll	\$18,444,321	\$18,444,321	\$18,532,179
Payroll Under Assumed Ret. Age	17,908,020	15,988,861	18,125,883
Annual Rate of Payments to:			
Service Retirees	16,761,185	16,761,185	16,255,391
DROP Retirees	372,269	372,269	542,313
Beneficiaries	607,796	607,796	514,352
Disability Retirees	1,327,570	1,327,570	1,342,129
Terminated Vested	1,261,496	1,261,496	894,487
B. Liabilities			
Present Value of Benefits			
Actives			
Retirement Benefits	76,389,386	75,074,323	72,768,108
Disability Benefits	4,220,822	4,165,153	4,084,373
Death Benefits	706,233	691,603	725,206
Vested Benefits	1,626,240	1,582,573	1,736,146
Refund of Contributions	743,788	741,551	572,775
Service Retirees	180,126,376	178,615,028	174,328,788
DROP Retirees ¹	5,953,026	5,908,744	7,792,731
Beneficiaries	2,469,186	2,456,806	2,602,181
Disability Retirees	11,586,117	11,506,531	11,758,791
Terminated Vested	5,880,809	5,773,119	4,284,318
Annuity Savings/Reserve	<u>35,824,502</u>	<u>35,824,502</u>	<u>33,268,606</u>
Total	325,526,485	322,339,933	313,922,023

Police Officers

B. 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	138,264,529	127,197,472	131,282,183
Normal Cost (Retirement)	1,864,726	1,823,819	1,851,829
Normal Cost (Disability)	254,544	250,068	245,598
Normal Cost (Death)	26,060	25,620	26,102
Normal Cost (Vesting)	141,150	138,361	139,895
Normal Cost (Refunds)	<u>111,607</u>	<u>107,953</u>	<u>101,725</u>
Total Normal Cost	2,398,087	2,345,821	2,365,149
Present Value of Future Normal Costs	17,764,044	17,816,015	18,221,205
Accrued Liability (Retirement)	62,878,176	61,567,950	57,725,319
Accrued Liability (Disability)	2,191,857	2,104,465	2,082,181
Accrued Liability (Death)	507,856	493,462	522,231
Accrued Liability (Vesting)	236,410	186,107	1,004,331
Accrued Liability (Refunds)	108,126	87,204	331,341
Accrued Liability (Inactives) ¹	206,015,514	204,260,228	200,766,809
Annuity Savings/Reserve	<u>35,824,502</u>	<u>35,824,502</u>	<u>33,268,606</u>
Total Actuarial Accrued Liability (AL)	307,762,441	304,523,918	295,700,818

Police Officers

C. 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	206,015,514	204,260,228	200,766,809
Actives	33,319,994	32,765,591	34,191,510
Member Contributions	<u>40,092,732</u>	<u>40,092,732</u>	<u>34,969,192</u>
Total	279,428,240	277,118,551	269,927,511
Non-vested Accrued Benefits	<u>14,844,095</u>	<u>14,650,716</u>	<u>15,560,144</u>
Total Present Value Accrued Benefits (PVAB)	294,272,335	291,769,267	285,487,655

Firefighters

	New Assump <u>10/1/2019</u>	Old Assump <u>10/1/2019</u>	<u>10/1/2018</u>
A. Participant Data			
Actives	194	194	201
Service Retirees	178	178	167
DROP Retirees	31	31	33
Beneficiaries	6	6	7
Disability Retirees	73	73	74
Terminated Vested	<u>34</u>	<u>34</u>	<u>25</u>
Total	516	516	507
Total Annual Payroll	\$14,906,090	\$14,906,090	\$16,284,572
Payroll Under Assumed Ret. Age	14,823,466	13,949,357	16,097,640
Annual Rate of Payments to:			
Service Retirees	11,099,245	11,099,245	10,172,348
DROP Retirees	2,315,158	2,315,158	2,459,647
Beneficiaries	219,526	219,526	264,555
Disability Retirees	2,847,073	2,847,073	2,884,244
Terminated Vested	383,227	383,227	251,473
B. Liabilities			
Present Value of Benefits			
Actives			
Retirement Benefits	74,525,298	73,230,221	77,388,218
Disability Benefits	4,335,710	4,271,159	4,280,485
Death Benefits	1,370,601	1,346,263	1,393,722
Vested Benefits	239,630	232,763	268,549
Refund of Contributions	77,887	77,541	43,285
Service Retirees	119,200,487	118,202,486	107,890,953
DROP Retirees ¹	35,585,578	35,315,026	36,154,449
Beneficiaries	1,307,664	1,299,165	1,758,346
Disability Retirees	22,984,875	22,838,439	23,598,386
Terminated Vested	2,442,560	2,407,870	1,339,504
Annuity Savings/Reserve	<u>49,046,346</u>	<u>49,046,346</u>	<u>47,355,051</u>
Total	311,116,636	308,267,279	301,470,948

Firefighters

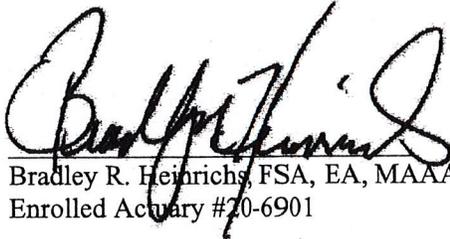
B. Liabilities - (Continued)	New Assump <u>10/1/2019</u>	Old Assump <u>10/1/2019</u>	<u>10/1/2018</u>
Present Value of Future Salaries	124,900,484	116,357,701	116,914,456
Normal Cost (Retirement)	2,104,654	2,059,413	2,113,824
Normal Cost (Disability)	234,440	233,259	225,802
Normal Cost (Death)	53,947	53,298	52,756
Normal Cost (Vesting)	118,242	119,678	105,085
Normal Cost (Refunds)	<u>6,393</u>	<u>6,087</u>	<u>3,456</u>
Total Normal Cost	2,517,676	2,471,735	2,500,923
Present Value of Future Normal Costs	20,752,329	20,085,818	20,227,441
Accrued Liability (Retirement)	57,463,178	56,765,383	60,144,367
Accrued Liability (Disability)	2,245,949	2,218,055	2,300,011
Accrued Liability (Death)	927,579	917,818	975,421
Accrued Liability (Vesting)	(633,879)	(621,939)	(235,089)
Accrued Liability (Refunds)	(206,030)	(207,188)	(37,892)
Accrued Liability (Inactives) ¹	181,521,164	180,062,986	170,741,638
Annuity Savings/Reserve	<u>49,046,346</u>	<u>49,046,346</u>	<u>47,355,051</u>
Total Actuarial Accrued Liability (AL)	290,364,307	288,181,461	281,243,507

Firefighters

C. 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	181,521,164	180,062,986	170,741,638
Actives	36,169,455	36,940,796	41,961,022
Member Contributions	<u>52,251,107</u>	<u>52,251,107</u>	<u>49,235,359</u>
Total	269,941,726	269,254,889	261,938,019
Non-vested Accrued Benefits	<u>11,098,501</u>	<u>9,571,714</u>	<u>10,550,880</u>
Total Present Value Accrued Benefits (PVAB)	281,040,227	278,826,603	272,488,899

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.



Bradley R. Heinrichs, FSA, EA, MAAA
Enrolled Actuary #70-6901

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

Total Plan

(1)	Unfunded Actuarial Accrued Liability as of October 1, 2018	\$274,491,584
(2)	Expected UAAL as of October 1, 2018	266,344,261
(3)	Change to UAAL due to Actuarial (Gain)/Loss	11,643,570
(4)	Change to UAAL due to Assumption Changes	7,944,223
(5)	Unfunded Actuarial Accrued Liability as of October 1, 2019	285,932,054

Type of Base	Date Established	Years Remaining	10/1/2019 Amount	New Assump Amortization Amount
Plan Change	10/1/1990	1	1,488,305	1,488,305
Plan Change	10/1/1991	2	308,228	159,827
Plan Change	10/1/1992	3	6,537,629	2,342,710
Actuarial Loss	10/1/1993	4	368,528	102,622
Actuarial Gain	10/1/1994	5	(211,582)	(48,815)
Assump Change	10/1/1994	5	3,255,998	751,205
Actuarial Loss	10/1/1995	6	973,997	193,850
Actuarial Gain	10/1/1996	7	(1,379,370)	(243,479)
Actuarial Gain	10/1/1997	8	(6,451,896)	(1,030,618)
Actuarial Gain	10/1/1998	9	(13,047,341)	(1,915,165)
Actuarial Gain	10/1/1999	10	(3,557,411)	(485,615)
Actuarial Gain	10/1/2000	11	(12,291,250)	(1,575,431)
Actuarial Loss	10/1/2001	12	21,818,693	2,646,601
Actuarial Loss	10/1/2002	13	21,788,610	2,517,565
Actuarial Loss	10/1/2003	14	30,305,270	3,353,884
Assump Change	10/1/2003	14	(8,042,957)	(890,114)
Actuarial Loss	10/1/2004	15	7,231,365	770,125
Plan Change	10/1/2004	15	2,619,338	278,954
Actuarial Gain	10/1/2005	16	(2,706,180)	(278,456)
Method Change	10/1/2005	16	(25,752,783)	(2,649,864)
Actuarial Loss	10/1/2006	17	35,554,339	3,547,026
Assump Change	10/1/2006	17	(7,659,986)	(764,187)
Method Change	10/1/2006	17	(19,057,128)	(1,901,206)
Actuarial Loss	10/1/2007	18	15,037,018	1,458,905
Assump Change	10/1/2007	18	3,696,630	358,650
Actuarial Loss	10/1/2008	19	31,292,895	2,960,495
Assump Change	10/1/2008	19	671,592	63,537
Actuarial Loss	10/1/2009	20	28,912,638	2,673,520
Actuarial Loss	10/1/2010	21	33,756,926	3,057,342
Actuarial Loss	10/1/2011	22	24,074,506	2,139,600
Assump Change	10/1/2011	22	8,514,569	756,725
Actuarial Loss	10/1/2012	23	29,418,163	2,569,851
Assump Change	10/1/2012	23	941,034	82,205
Plan Change	10/1/2012	23	3,541,238	309,348

Type of <u>Base</u>	Date <u>Established</u>	Years <u>Remaining</u>	10/1/2019 <u>Amount</u>	New Assump Amortization <u>Amount</u>
Assump Change	10/1/2013	24	976,992	84,013
Actuarial Loss	10/1/2013	24	6,109,294	525,350
Plan Change	10/1/2013	24	130,292	11,204
Assump Change	10/1/2014	25	1,005,845	85,259
Actuarial Gain	10/1/2014	25	(8,129,220)	(689,058)
Assump Change	10/1/2015	26	1,028,608	86,046
Actuarial Loss	10/1/2015	26	5,161,121	431,744
Assump Change	10/1/2016	27	20,542,279	1,697,786
Benefit Change	10/1/2016	27	(14,760,216)	(1,219,908)
Actuarial Loss	10/1/2016	27	6,514,833	538,440
Actuarial Loss	10/1/2017	28	10,221,950	835,509
Data Corrections	10/1/2017	28	5,113,599	417,969
Benefit Change	10/1/2017	28	(6,078,196)	(496,812)
Assump Change	10/1/2017	28	(1,361,064)	(111,249)
Actuarial Loss	10/1/2018	29	3,806,928	308,011
Assump Change	10/1/2018	29	31,216,334	2,525,654
Plan Change	10/1/2018	29	(7,104,743)	(574,831)
Actuarial Loss	10/1/2019	30	11,643,570	933,274
Assump Change	10/1/2019	30	7,944,223	636,758
			<u>285,932,054</u>	<u>28,825,061</u>

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1)	Unfunded Actuarial Accrued Liability (UAAL) as of October 1, 2018	\$274,491,584
(2)	Expected UAAL as of October 1, 2019	266,344,261
(3)	Summary of Actuarial (Gain)/Loss, by component:	
	Investment Return (Actuarial Asset Basis)	9,919,388
	Active Decrements (excluding mortality)	(2,049,374)
	Mortality (active and inactive)	564,500
	Salary Increases	(448,828)
	Other	<u>3,657,884</u>
	Increase in UAAL due to (Gain)/Loss	11,643,570
	Assumption Changes	<u>7,944,223</u>
(4)	Actual UAAL as of October 1, 2019	\$285,932,054

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. However, large gains and losses that can occur (such as a significant and/or prolonged downturn in financial markets) can have a significant impact on the plan's funded percentage.

- **Investment Return:** The liabilities and corresponding funded status presented in this report assume a long-term return expectation of 7.70% in each future year, net of investment expenses. Due to the nature of investments, long-term expectations are not a guarantee and actual average long-term returns may be above or below 7.70% per year. It should be noted that the liabilities and the corresponding funded status presented in this report would vary to the extent the long-term rate of return varies from current expectations. Furthermore, short-term volatility in actual returns is expected and will result in year-over-year fluctuation in financial metrics.
- **Partially Closed Plan:** It is important to note that the Retirement System was closed to new general employees in 2012. Due to a decline in new membership, the Retirement System will mature more rapidly than open systems. Closed or partially closed plans have a shorter time horizon to pay off unfunded liabilities and recover from adverse experience. The maturing nature and shortening lifetime of the Retirement System are important considerations when reviewing investment and the other risks.
- **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 57.7% on October 1, 2016 to 43.9% 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 69.4%. 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 slightly from 70.8% to 71.3% during the period October 1, 2016 to October 1, 2019. It should be noted that benefit reductions have improved the funded status over this period.
- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (contributions minus benefit payments and administrative expenses) to the Market Value of Assets, stayed approximately the same from October 1, 2016 to October 1, 2019. The current Net Cash Flow Ratio of -4.6% 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 upon request.

PLAN MATURITY MEASURES AND OTHER RISK METRICS

Total Plan

	<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	939	849	816	780
Total Inactives ¹	1,627	1,763	1,748	1,778
Actives / Inactives	57.7%	48.2%	46.7%	43.9%
<u>Asset Volatility Ratio</u>				
Market Value of Assets (MVA)	591,081,423	679,986,360	706,113,130	689,070,423
Total Annual Payroll	58,296,965	52,779,099	52,838,765	50,666,971
MVA / Total Annual Payroll	1,013.9%	1,288.4%	1,336.4%	1,360.0%
<u>Accrued Liability (AL) Percentage</u>				
Inactive Accrued Liability	591,361,881	637,310,511	672,233,129	690,812,402
Total Accrued Liability (EAN)	857,374,372	938,926,880	971,438,474	994,920,039
Inactive AL / Total AL	69.0%	67.9%	69.2%	69.4%
<u>Funded Percentage</u>				
Actuarial Value of Assets (AVA)	607,155,706	679,218,799	696,946,890	708,987,985
Total Accrued Liability (EAN)	857,374,372	938,926,880	971,438,474	994,920,039
AVA / Total Accrued Liability (EAN)	70.8%	72.3%	71.7%	71.3%
<u>Net Cash Flow Ratio</u>				
Net Cash Flow ²	(27,590,527)	(29,421,198)	(35,057,262)	(31,935,875)
Market Value of Assets (MVA)	591,081,423	679,986,360	706,113,130	689,070,423
Ratio	-4.7%	-4.3%	-5.0%	-4.6%

¹ Effective 10/1/2018, 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>	MARKET VALUE
Cash and Cash Equivalents:	
Cash and Short Term Investments	30,954,582
Total Cash and Equivalents	30,954,582
Receivables:	
Contributions	225,974
Other Receivables	60,482
Investment Income	1,583,016
Total Receivable	1,869,472
Investments:	
U. S. Bonds and Bills	63,501,728
Federal Agency Guaranteed Securities	95,395,980
Corporate Bonds	88,753,041
Municipal Obligations	555,305
Partnership investments	8,387,496
Stocks	358,393,654
Limited Partnerships	15,221,168
Mutual Funds	11,692,863
Real Estate Investment Trusts	16,677,258
Total Investments	658,578,493
Loans to Members	8,065,702
Total Assets	699,468,249
<u>LIABILITIES</u>	
Payables:	
To Broker for Investments Purchased	397,826
Prepaid City Contribution	10,000,000
Total Liabilities	10,397,826
NET POSITION RESTRICTED FOR PENSIONS	689,070,423

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

ADDITIONS

Contributions:

Member to Pension Reserve	3,208,424	
Buy-Back	915,261	
City	31,778,947	
Member to Annuity Savings	3,435,022	
State	461,877	
 Total Contributions		 39,799,531
 Investment Income:		
Net Increase in Fair Value of Investments	227,096	
Interest & Dividends	16,272,203	
Less Investment Expense ¹	(1,606,131)	
 Net Investment Income		 14,893,168
 Total Additions		 54,692,699

DEDUCTIONS

Distributions to Members:

Benefit Payments	61,839,413	
Lump Sum DROP Distributions	1,641,997	
Refunds of Member Contributions	7,577,372	
 Total Distributions		 71,058,782
 Administrative Expense		 676,624
 Total Deductions		 71,735,406
 Net Increase in Net Position		 (17,042,707)
 NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		706,113,130
 End of the Year		 689,070,423

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	(43,309,518)	0	0	0	0	0
09/30/2016	183,216	36,644	0	0	0	0
09/30/2017	19,528,871	7,811,549	3,905,775	0	0	0
09/30/2018	7,546,915	4,528,149	3,018,766	1,509,383	0	0
09/30/2019	(40,367,380)	(32,293,904)	(24,220,428)	(16,146,952)	(8,073,476)	0
Total		(19,917,562)	(17,295,887)	(14,637,569)	(8,073,476)	0

<u>Development of Investment Gain/(Loss)</u>	
Market Value of Assets, including DROP, ARF & Prepaid Contribution, 09/30/2018	716,113,130
Contributions	39,799,531
Benefit Payments & Admin Expenses	(71,735,406)
Expected Investment Earnings ¹	55,260,548
Actual Net Investment Earnings	14,893,168
2019 Actuarial Investment Gain/(Loss)	<u>(40,367,380)</u>

¹ Expected Investment Earnings = $0.078 * 716,113,130 + (31,778,947 + 461,877) * ((1.078)^{.75} - 1) + (2,982,450 + 915,261 + 3,435,022) * ((1.078)^{.5} - 1) - 71,735,406 * ((1.078)^{.5} - 1)$

<u>Development of Actuarial Value of Assets</u>	
(1) Market Value of Assets, 09/30/2019	689,070,423
(2) Gains/(Losses) Not Yet Recognized	<u>(19,917,562)</u>
(3) Actuarial Value of Assets, 09/30/2019, (1) - (2)	708,987,985
(A) 09/30/2018 Actuarial Assets, including DROP, ARF, & Prepaid City:	706,946,890
(I) Net Investment Income:	
1. Interest and Dividends	16,272,203
2. Net Increase in Fair Value of Investments	227,096
3. Change in Actuarial Value	29,083,802
4. Investment Expenses	<u>(1,606,131)</u>
Total	43,976,970
(B) 09/30/2019 Actuarial Assets, including DROP, ARF & Prepaid City:	718,987,985
Actuarial Asset Rate of Return = $2I/(A+B-I)$:	6.36%
Market Value of Assets Rate of Return:	2.13%

10/01/2019 Limited Actuarial Assets (not including Prepaid Contribution):	708,987,985
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	(9,919,388)

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

REVENUES

Contributions:		
Member to Pension Reserve	3,208,424	
Buy-Back	915,261	
City	31,778,947	
Member to Annuity Savings	3,435,022	
State	461,877	
Total Contributions		39,799,531
Earnings from Investments:		
Interest & Dividends	16,272,203	
Net Increase in Fair Value of Investments	227,096	
Change in Actuarial Value	29,083,802	
Total Earnings and Investment Gains		45,583,101
	EXPENDITURES	
Distributions to Members:		
Benefit Payments	61,839,413	
Lump Sum DROP Distributions	1,641,997	
Refunds of Member Contributions	7,577,372	
Total Distributions		71,058,782
Expenses:		
Investment related ¹	1,606,131	
Administrative	676,624	
Total Expenses		2,282,755
Change in Net Assets for the Year		12,041,095
Net Assets Beginning of the Year		696,946,890
Net Assets End of the Year ²		708,987,985

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	6,035,088.27
Plus Additions	2,809,504.46
Investment Return Earned	499,011.36
Less Distributions	(1,641,996.98)
End of the Year Balance	7,701,607.11

STATISTICAL DATA
Total Plan

	<u>10/1/2016</u>	<u>10/1/2017</u>	<u>10/1/2018</u>	<u>10/1/2019</u>
<u>Actives</u>				
Number	939	849	816	780
Average Current Age	43.6	42.7	42.6	42.8
Average Past Service	12.7	12.9	12.8	13.0
Average Annual Salary ¹	\$63,102	\$63,139	\$63,439	\$64,958
Actual Salary Increase	7.59%	4.22%	4.92%	3.73%
Assumed Salary Increase	5.05%	4.98%	5.04%	5.12%
<u>Service Retirees</u>				
Number	1,225	1,302	1,318	1,328
Average Current Age	65.0	65.1	65.3	65.4
Average Annual Benefit	\$39,497	\$40,034	\$40,653	\$41,617
<u>DROP Retirees</u>				
Number	29	33	40	35
Average Current Age	53.1	53.8	54.8	55.5
Average Annual Benefit	\$71,356	\$73,029	\$75,049	\$76,784
<u>Beneficiaries</u>				
Number	45	45	53	53
Average Current Age	65.8	66.2	67.2	68.4
Average Annual Benefit	\$21,788	\$24,351	\$28,269	\$29,326
<u>Disability Retirees</u>				
Number	183	179	176	166
Average Current Age	65.6	66.4	67.2	67.5
Average Annual Benefit	\$28,987	\$29,442	\$29,815	\$30,791
<u>Terminated Vested</u>				
Number	145	204	248	282
Average Current Age	42.6	41.4	39.5	39.4
Average Annual Benefit	\$10,850	\$12,010	\$12,779	\$13,576

¹ Projected with salary scale to valuation year

STATISTICAL DATA
General Employees

	<u>10/1/2016</u>	<u>10/1/2017</u>	<u>10/1/2018</u>	<u>10/1/2019</u>
<u>Actives</u>				
Number	479	377	343	318
Average Current Age	46.5	46.4	47.8	48.8
Average Past Service	12.3	13.4	14.4	15.2
Average Annual Salary ¹	\$45,920	\$46,481	\$49,913	\$54,455
Actual Salary Increase	9.36%	7.15%	8.30%	4.08%
Assumed Salary Increase	5.11%	5.16%	5.04%	4.95%
<u>Service Retirees</u>				
Number	767	830	830	826
Average Current Age	66.7	66.4	66.6	66.9
Average Annual Benefit	\$31,864	\$32,538	\$32,715	\$33,181
<u>Beneficiaries</u>				
Number	30	29	34	33
Average Current Age	66.2	67.3	69.8	71.8
Average Annual Benefit	\$16,924	\$17,403	\$21,157	\$22,030
<u>Disability Retirees</u>				
Number	62	58	56	49
Average Current Age	70.4	71.3	72.1	71.8
Average Annual Benefit	\$17,780	\$18,078	\$18,233	\$19,115
<u>Terminated Vested</u>				
Number	80	108	116	119
Average Current Age	44.5	44.1	43.0	43.0
Average Annual Benefit	\$8,796	\$10,147	\$10,477	\$10,477

¹ Projected with salary scale to valuation year

STATISTICAL DATA
Police Officers

	<u>10/1/2016</u>	<u>10/1/2017</u>	<u>10/1/2018</u>	<u>10/1/2019</u>
<u>Actives</u>				
Number	256	274	272	268
Average Current Age	38.2	37.2	37.0	36.9
Average Past Service	11.5	10.8	10.7	10.6
Average Annual Salary ¹		\$66,472	\$66,050	\$68,822
Actual Salary Increase		3.38%	3.35%	4.54%
Assumed Salary Increase		5.18%	5.30%	5.52%
<u>Service Retirees</u>				
Number	312	317	321	324
Average Current Age	61.7	62.3	62.6	62.9
Average Annual Benefit	\$49,349	\$50,124	\$50,640	\$51,732
<u>DROP Retirees</u>				
Number	7	6	7	4
Average Current Age	53.3	52.9	53.9	52.8
Average Annual Benefit	\$68,539	\$73,130	\$77,473	\$93,067
<u>Beneficiaries</u>				
Number	9	9	12	14
Average Current Age	59.5	58.2	56.6	58.4
Average Annual Benefit	\$28,165	\$36,284	\$42,863	\$43,414
<u>Disability Retirees</u>				
Number	48	48	46	44
Average Current Age	60.3	61.3	62.3	62.6
Average Annual Benefit	\$29,167	\$29,416	\$29,177	\$30,172
<u>Terminated Vested</u>				
Number	54	78	107	129
Average Current Age	40.0	38.2	36.0	36.7
Average Annual Benefit	\$13,573	\$14,275	\$15,161	\$15,574

¹ Projected with salary scale to valuation year

STATISTICAL DATA
Firefighters

	<u>10/1/2016</u>	<u>10/1/2017</u>	<u>10/1/2018</u>	<u>10/1/2019</u>
<u>Actives</u>				
Number	204	198	201	194
Average Current Age	43.6	43.2	41.3	41.2
Average Past Service	15.3	14.7	12.8	12.6
Average Annual Salary ¹		\$82,910	\$78,994	\$76,836
Actual Salary Increase		2.22%	2.91%	2.45%
Assumed Salary Increase		4.55%	4.72%	4.88%
<u>Service Retirees</u>				
Number	146	155	167	178
Average Current Age	63.6	63.8	63.7	63.5
Average Annual Benefit	\$58,542	\$59,539	\$60,912	\$62,355
<u>DROP Retirees</u>				
Number	22	27	33	31
Average Current Age	53.0	54.0	55.0	55.9
Average Annual Benefit	\$72,252	\$73,007	\$74,535	\$74,683
<u>Beneficiaries</u>				
Number	6	7	7	6
Average Current Age	73.3	71.8	72.8	73.3
Average Annual Benefit	\$36,545	\$37,794	\$37,794	\$36,588
<u>Disability Retirees</u>				
Number	73	73	74	73
Average Current Age	65.0	66.0	66.5	67.5
Average Annual Benefit	\$38,388	\$38,489	\$38,976	\$39,001
<u>Terminated Vested</u>				
Number	11	18	25	34
Average Current Age	42.0	38.9	38.1	37.2
Average Annual Benefit	\$13,381	\$15,447	\$16,765	\$21,290

¹ Projected with salary scale to valuation year

AGE AND SERVICE DISTRIBUTION
Total Plan

PAST SERVICE

AGE	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
< 25	17	28								45
Avg. Pay	\$31,770	\$51,969								\$44,338
25 - 29	13	53	10	1						77
Avg. Pay	\$36,755	\$51,542	\$59,932	\$47,045						\$50,076
30 - 34	3	28	27	30	1					89
Avg. Pay	\$47,203	\$53,148	\$53,623	\$67,690	\$69,752					\$58,180
35 - 39	3	15	14	45	28					105
Avg. Pay	\$36,499	\$52,790	\$57,949	\$62,464	\$65,410					\$60,524
40 - 44	1	2	4	27	57	35				126
Avg. Pay	\$50,970	\$55,405	\$41,418	\$66,432	\$75,609	\$77,782				\$72,644
45 - 49		1	9	38	42	39	1		1	131
Avg. Pay		\$33,291	\$38,484	\$58,872	\$70,911	\$86,031	\$144,261		\$101,326	\$70,197
50 - 54	1	5	5	22	25	24	3			85
Avg. Pay	\$50,970	\$26,668	\$32,951	\$54,166	\$61,122	\$90,186	\$93,679			\$64,874
55 - 59		1	13	23	26	12	3			78
Avg. Pay		\$29,221	\$35,916	\$51,118	\$59,313	\$84,252	\$83,633			\$57,383
60 - 64		1	3	5	9	6				24
Avg. Pay		\$12,641	\$70,975	\$40,871	\$57,514	\$64,791				\$55,679
65 - 69		1	4	1	5	1			1	13
Avg. Pay		\$16,916	\$24,110	\$42,954	\$56,802	\$56,714			\$80,218	\$44,404
70+			1	3	1	1			1	7
Avg. Pay			\$12,251	\$55,649	\$46,063	\$228,371			\$72,280	\$75,130
Total	38	135	90	195	194	118	7		3	780
Avg. Pay	\$36,077	\$50,393	\$48,042	\$60,006	\$67,562	\$84,126	\$96,600		\$84,608	\$61,747

AGE AND SERVICE DISTRIBUTION
General Employees

PAST SERVICE

AGE	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
< 25										
Avg. Pay										
25 - 29		2	4	1						7
Avg. Pay		\$43,577	\$51,296	\$47,045						\$48,483
30 - 34		1	15	6						22
Avg. Pay		\$34,026	\$42,607	\$53,909						\$45,299
35 - 39		1	6	22	13					42
Avg. Pay		\$48,732	\$45,015	\$53,004	\$54,073					\$52,092
40 - 44			3	11	17	17				48
Avg. Pay			\$32,061	\$53,549	\$63,759	\$63,505				\$59,348
45 - 49		1	8	21	13	9				52
Avg. Pay		\$33,291	\$34,786	\$47,867	\$60,251	\$72,333				\$52,905
50 - 54		5	5	15	16	4	2			47
Avg. Pay		\$26,668	\$32,951	\$46,429	\$52,455	\$66,784	\$85,226			\$48,328
55 - 59		1	13	20	20	5	1			60
Avg. Pay		\$29,221	\$35,916	\$47,095	\$54,228	\$70,749	\$55,182			\$48,859
60 - 64		1	3	5	9	4				22
Avg. Pay		\$12,641	\$70,975	\$40,871	\$57,514	\$59,338				\$53,859
65 - 69		1	4	1	5	1				12
Avg. Pay		\$16,916	\$24,110	\$42,954	\$56,802	\$56,714				\$41,420
70+			1	3	1	1				6
Avg. Pay			\$12,251	\$55,649	\$46,063	\$228,371				\$75,605
Total		13	62	105	94	41	3			318
Avg. Pay		\$30,409	\$39,389	\$49,366	\$56,826	\$70,095	\$75,211			\$51,768

AGE AND SERVICE DISTRIBUTION
Police Officers

PAST SERVICE

AGE	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
< 25	12	25								37
Avg. Pay	\$23,769	\$52,563								\$43,225
25 - 29	10	29	6							45
Avg. Pay	\$32,490	\$53,138	\$65,690							\$50,223
30 - 34	1	19	8	16	1					45
Avg. Pay	\$39,668	\$54,502	\$67,123	\$70,469	\$69,752					\$62,432
35 - 39	1	7	7	13	6					34
Avg. Pay	\$7,556	\$52,935	\$67,771	\$67,679	\$73,717					\$63,959
40 - 44			1	8	25	16				50
Avg. Pay			\$69,490	\$71,948	\$77,886	\$92,054				\$81,302
45 - 49			1	4	11	15				31
Avg. Pay			\$68,065	\$74,065	\$67,180	\$86,216				\$77,308
50 - 54				3	5	9				17
Avg. Pay				\$73,246	\$77,043	\$94,513				\$85,622
55 - 59				1	3	1	2			7
Avg. Pay				\$79,521	\$72,791	\$85,896	\$97,859			\$82,787
60 - 64								1		1
Avg. Pay								\$69,752		\$69,752
65 - 69										
Avg. Pay										
70+									1	1
Avg. Pay									\$72,280	\$72,280
Total	24	80	23	45	51	42	2		1	268
Avg. Pay	\$27,390	\$53,265	\$67,090	\$70,632	\$74,545	\$89,818	\$97,859		\$72,280	\$65,232

AGE AND SERVICE DISTRIBUTION
Firefighters

PAST SERVICE

AGE	<1	1 - 4	5 - 9	10 - 14	15 - 19	20 - 24	25 - 29	30 - 34	35+	Total
< 25	5	3								8
Avg. Pay	\$50,970	\$47,018								\$49,488
25 - 29	3	22								25
Avg. Pay	\$50,970	\$50,162								\$50,259
30 - 34	2	8	4	8						22
Avg. Pay	\$50,970	\$52,321	\$67,938	\$72,469						\$62,364
35 - 39	2	7	1	10	9					29
Avg. Pay	\$50,970	\$53,225	\$66,793	\$76,497	\$76,248					\$68,707
40 - 44	1	2		8	15	2				28
Avg. Pay	\$50,970	\$55,405		\$78,630	\$85,242	\$84,960				\$79,977
45 - 49				13	18	15	1		1	48
Avg. Pay				\$71,976	\$80,890	\$94,065	\$144,261		\$101,326	\$84,339
50 - 54	1			4	4	11	1			21
Avg. Pay	\$50,970			\$68,872	\$75,884	\$95,156	\$110,585			\$85,109
55 - 59				2	3	6				11
Avg. Pay				\$77,148	\$79,731	\$95,230				\$87,715
60 - 64						1				1
Avg. Pay						\$81,645				\$81,645
65 - 69									1	1
Avg. Pay									\$80,218	\$80,218
70+										
Avg. Pay										
Total	14	42	5	45	49	35	2		2	194
Avg. Pay	\$50,970	\$51,109	\$67,709	\$74,205	\$80,890	\$93,732	\$127,423		\$90,772	\$73,291

VALUATION PARTICIPANT RECONCILIATION
Total Plan

1. Active lives

a. Number in prior valuation 10/1/2018	816
b. Terminations	
i. Vested (partial or full) with deferred benefits	(36)
ii. Vested in refund of member contributions only	(6)
iii. Refund of member contributions or full lump sum received	0
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	(27)
f. DROP	(6)
g. Continuing participants	741
h. New entrants and rehires	39
i. Data Corrections	0
j. Total active life participants in valuation	780

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

	Service Retirees, Vested Receiving <u>Benefits</u>	DROP <u>Benefits</u>	Receiving Death <u>Benefits</u>	Receiving Disability <u>Benefits</u>	Vested (Deferred Annuity)	Vested (Due Refund)	<u>Total</u>
a. Number prior valuation	1,318	40	53	176	161	87	1,835
Retired	46	(11)			(8)		27
DROP		6					6
Vested (Deferred Annuity)					43	(7)	36
Vested (Due Refund)						6	6
Death, With Survivor	(4)		5	(1)			0
Death, No Survivor	(33)		(3)	(9)			(45)
Disabled							0
Refund of Contributions						(1)	(1)
Rehires					(1)		(1)
Expired Annuities			(2)				(2)
Data Corrections	1				1	1	3
b. Number current valuation	1,328	35	53	166	196	86	1,864

VALUATION PARTICIPANT RECONCILIATION
General Employees

1. Active lives

a. Number in prior valuation 10/1/2018	343
b. Terminations	
i. Vested (partial or full) with deferred benefits	(9)
ii. Vested in refund of member contributions only	0
iii. Refund of member contributions or full lump sum received	0
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	(15)
f. Continuing participants	319
g. New entrants and rehires	0
h. Data Corrections	(1)
i. Total active life participants in valuation	318

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

	Service Retirees, Vested Receiving Benefits	DROP Benefits	Receiving Death Benefits	Receiving Disability Benefits	Vested (Deferred Annuity)	Vested (Due Refund)	Total
a. Number prior valuation	830	0	34	56	87	29	1,036
Retired	22				(7)		15
Vested (Deferred Annuity)					16	(7)	9
Vested (Due Refund)							0
Death, With Survivor	(2)		3	(1)			0
Death, No Survivor	(25)		(2)	(6)			(33)
Disabled							0
Refund of Contributions						(1)	(1)
Rehires							0
Expired Annuities			(2)				(2)
Data Corrections	1				1	1	3
b. Number current valuation	826	0	33	49	97	22	1,027

VALUATION PARTICIPANT RECONCILIATION
Police Officers

1. Active lives

a. Number in prior valuation 10/1/2018	272
b. Terminations	
i. Vested (partial or full) with deferred annuity	(23)
ii. Vested in refund of member contributions only	0
iii. Refund of member contributions or full lump sum distribution received	0
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	(6)
f. DROP	(1)
g. Continuing participants	242
h. New entrants and rehires	25
i. Data Corrections	1
j. Total active life participants in valuation	268

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

	Service Retirees, Vested Receiving <u>Benefits</u>	DROP <u>Benefits</u>	Receiving Death <u>Benefits</u>	Receiving Disability <u>Benefits</u>	Vested (Deferred <u>Annuity</u>)	Vested (Due <u>Refund</u>)	<u>Total</u>
a. Number prior valuation	321	7	12	46	59	48	493
Retired	10	(4)					6
DROP		1					1
Vested (Deferred Annuity)					23		23
Vested (Due Refund)							0
Death, With Survivor	(2)		2				0
Death, No Survivor	(5)			(2)			(7)
Disabled							0
Refund of Contributions							0
Rehires					(1)		(1)
Expired Annuities							0
Data Corrections							0
b. Number current valuation	324	4	14	44	81	48	515

VALUATION PARTICIPANT RECONCILIATION
Firefighters

1. Active lives

a. Number in prior valuation 10/1/2018	201
b. Terminations	
i. Vested (partial or full) with deferred annuity	(4)
ii. Vested in refund of member contributions only	(6)
iii. Refund of member contributions or full lump sum distribution received	0
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	(6)
f. DROP	(5)
g. Continuing participants	180
h. New entrants and rehires	14
i. Data Corrections	0
j. Total active life participants in valuation	194

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)	<u>Total</u>
a. Number prior valuation	167	33	7	74	15	10	306
Retired	14	(7)			(1)		6
DROP		5					5
Vested (Deferred Annuity)					4		4
Vested (Due Refund)						6	6
Death, With Survivor							0
Death, No Survivor	(3)		(1)	(1)			(5)
Disabled							0
Refund of Contributions							0
Rehires							0
Expired Annuities							0
Data Corrections							0
b. Number current valuation	178	31	6	73	18	16	322

ACTUARIAL ASSUMPTIONS AND METHODS

Actuarial Cost Method

The entry age normal cost method was used to determine all liabilities, except that the liability associated with member contributions has been assumed to be equal to those contributions.

Prior to October 1, 1998, fiscal year City contributions made in excess of required valuation year contributions were credited to the temporary funding credit.

Beginning October 1, 1998, fiscal year contributions made in excess of required valuation year contributions are included in the experience gain or loss for the year. Experience gains and losses are amortized over a 15-year period.

Beginning October 1, 2007, the method of amortizing experience gains and losses of the System was changed from a 15-year to a 30-year level dollar method. The amortization amounts for outstanding gain and loss bases as of October 1, 2007 were recalculated to extend the amortization period an additional 15 years (for a total of 30 years).

Beginning October 1, 2008, the method of amortizing all outstanding unfunded liability bases was changed from a level dollar method to an increasing amortization based on a level percent of payroll. The aggregate payroll is assumed to increase at 4.0% per year, limited to average payroll growth for the previous 10 years.

Beginning October 1, 2011, the method of amortizing all outstanding unfunded liability bases was changed to an increasing amortization based on a level percent of payroll where the aggregate payroll is assumed to increase at 3.5% per year.

Beginning October 1, 2015, the method of amortizing all outstanding unfunded liability bases was changed to an increasing amortization based on a level percent of payroll where the aggregate payroll is assumed to increase at 2.0% per year.

Beginning October 1, 2016, the method of amortizing all outstanding unfunded liability bases was changed to an increasing amortization based on a level percent of payroll where the aggregate payroll is assumed to increase at 1.0% per year.

Beginning October 1, 2017, the method of amortizing all outstanding unfunded liability bases was changed to be a level dollar amount (0.0% increases).

Mortality

Police Officers and Firefighters

Healthy Active Lives:

Female: RP2000 Generational, 100% Combined Healthy (previously Annuitant) White Collar, Scale BB

Male: RP2000 Generational, 10% Combined Healthy (previously Annuitant) White Collar / 90% Combined Healthy (previously Annuitant) 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

Mortality (Continued)

General Employees

Healthy Active Lives:

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

Male: RP2000 Generational, 50% White Collar / 50% Blue Collar, Scale BB

Healthy Inactive Lives:

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

Male: RP2000 Generational, 50% Annuitant White Collar / 50% Annuitant Blue Collar, Scale BB

Disabled Lives:

Female: 100% RP2000 Disabled Female set forward two years

Male: 100% RP2000 Disabled Male setback four years

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. The mortality assumption sufficiently accommodates for future mortality improvements.

Disability

General Employees

Representative values of the assumed annual rates of disability among General Employee members in active service are set forth in the following table:

	Rate		Rate		Rate		Rate
	0.012%		0.052%		0.180%		0.392%
	0.020%		0.076%		0.304%		0.344%
	0.028%		0.112%		0.440%		0.296%

Police Officers

85% of all disabilities are assumed to be in the line of duty and 15% are assumed not to be in the line of duty. Representative values of the assumed annual rates of disability among Police Officer members in active service are set forth in the following table:

	Rate		Rate		Rate		Rate
	0.067%		0.174%		0.627%		1.534%
	0.084%		0.269%		0.930%		1.837%
	0.106%		0.409%		1.232%		2.139%

Firefighters

100% of all disabilities are assumed to be in the line of duty. Representative values of the assumed annual rates of disability among Firefighter members in active service are set forth in the following table:

	Rate		Rate		Rate		Rate
	0.064%		0.165%		0.597%		1.461%
	0.080%		0.256%		0.885%		1.749%
	0.101%		0.389%		1.173%		2.037%

Permanent Withdrawal from Active Status

Assumed annual rates of withdrawal are set forth in the following tables:

<i>General Employees</i>		<i>Police Officers</i>		<i>Firefighters</i>	
	Rate		Rate		Rate
	15.0%		20.0%		11.0%
	12.5%		17.5%		2.5%
	10.0%		7.5%		0.0%
	8.5%		5.0%		
	7.0%		4.5%		
	6.0%		2.5%		
	5.0%		0.0%		
	4.0%				
	3.0%				
	2.0%				
	0.0%				

Terminated deferred members are assumed to draw their benefits at age 55 (age 59.5 for police officers hired after March 2, 2014 and firefighters hired after November 15, 2013). For non-grandfathered general employees, future service benefits are assumed to commence at age 62.

Retirement

General Employees

Members whose retirement date was not affected by the December 1, 2017 changes

10% per year upon reaching age 55 with 10 years of service, but prior to 20 years of service with 70 points. 70% are assumed to retire upon reaching 20 years of service with 70 points and 35% per year thereafter. 100% are assumed to retire at age 70.

Members whose retirement date was affected by the December 1, 2017 changes

Assumed annual rates of retirement among are shown in the tables below:

<i>Years of Service</i>					
	0%	0%	0%	0%	0%
	0%	5%	5%	5%	5%
	10%	10%	10%	10%	10%
	15%	50%	50%	50%	50%
	5%	50%	50%	30%	10%
	75%	75%	75%	80%	80%
	25%	25%	25%	50%	30%
	35%	35%	35%	60%	40%
	45%	45%	45%	70%	50%
	85%	85%	85%	80%	90%
	100%	100%	100%	100%	100%

Retirement (Continued)

Police Officers

Tier 1A – 1D

5.0% per year upon reaching age 55 with 10 years of service, but prior to 20 years of service with 70 points. 70% are assumed to retire upon reaching 20 years of service with 70 points. Thereafter, the following rates apply:

	Probability of Retirement
	35%
	30%
	35%
	50%
	100%

100% are assumed to retire at age 65.

Tier 1E & 1F

Assumed annual rates of retirement among are shown in the tables below:

	Probability of Retirement
	0.0%
	5.0%
	75.0%
	50.0%
	100.0%
	50.0%
	30.0%
	100.0%

Tier 1G & Tier 2

Assumed annual rates of retirement among are shown in the tables below:

	Probability of Retirement
	0.0%
	5.0%
	75.0%
	50.0%
	100.0%
	50.0%
	30.0%
	40.0%
	50.0%
	60.0%
	100.0%

Retirement (Continued)

Firefighters

Members with 16 years of actual service and 66 points as of November 12, 2019

Assumed annual rates of retirement are shown in the table below:

	Age < 65	Age ≥ 65
	0%	100%
	7.5%	100%
	12.5%	100%
	50%	100%
	33.3%	100%
	100%	100%

Firefighters

Members with 10 years of actual service as of November 12, 2019

Assumed annual rates of retirement are shown in the table below:

	Age < 65	Age ≥ 65
	0%	100%
	7.5%	100%
	12.5%	100%
	50%	100%
	33.3%	100%
	100%	100%

There are no rates of retirement prior to attainment of age 55 and 10 years of Credited Service or age 52 and 25 years of Credited Service. Rates are increased by 30 percent upon first eligibility for Normal Retirement for Firefighters with 16 or more years of service on November 12, 2019.

Members with less than 10 years of actual service as of November 12, 2019

Assumed annual rates of retirement are shown in the table below:

	Age < 65	Age ≥ 65
	0%	100%
	7.5%	100%
	12.5%	100%
	50%	100%
	33.3%	100%
	100%	100%

There are no rates of retirement prior to attainment of age 55 and 10 years of Credited Service or age 52 and 25 years of Credited Service.

Early Retirement

It is assumed that all Firefighters and Police Officers that qualify for early retirement benefits will defer commencement to age 55. It is assumed that all General Employees that qualify for early retirement will commence their frozen benefit immediately and their benefit earned after December 1, 2017 at age 62.

Investment Rate of Return (interest rate)

7.7% (previously 7.8%) per annum, net of investment related expenses.

Specialty Pay

It assumed that all Firefighters and Police Officers will have specialty pay that equals or exceeds 5.0% of base salary.

Salary Increases

Assumed annual rates of increase in salaries are shown in the table below:

	General	Police Officers	Firefighters
	15.0%	9.0%	10.0%
	7.0%	8.5%	6.0%
	7.0%	8.0%	6.0%
	7.0%	7.5%	6.0%
	7.0%	7.0%	6.0%
	6.0%	6.5%	5.5%
	6.0%	6.0%	5.5%
	5.5%	6.0%	4.0%
	5.5%	5.0%	4.0%
	5.5%	4.0%	4.0%
	5.0%	4.0%	4.0%
	4.5%	4.0%	4.0%
	4.5%	4.0%	3.0%

Expenses

Annual administrative expenses, exclusive of investment expenses and commissions, are assumed to be payable by the Plan. The assumed administrative expenses are equal to the prior year's actual expenses adjusted to the fiscal year in which they are expected to be paid.

Assets

The actuarial value of assets (AVA) is equal to the market value of assets adjusted to reflect a five-year phase-in of the difference between the expected versus actual return on the AVA. The AVA is limited to an 80%-120% corridor of the market value of assets.

Funding Period (Pursuant to Chapter 112, Florida Statutes)

The annual payment towards the unfunded actuarial accrued liability has been determined as a level dollar amount.

Refund of ASF Member Contributions

It is assumed that all members take a refund of their accumulated ASF employee contributions upon retiring from the System.

SUMMARY OF CURRENT PLAN

Section 1 – Traditional Benefits that apply to certain longer service Members (Please see the exceptions in Section 2)

Plan Effective Date

The Plan was initially effective on January 1, 1956.

Retirement Allowance

The Member's Retirement Allowance is equal to the sum of the following:

- 1) An Annuity, which is the actuarial equivalent of his Accumulated Member Contributions;
- 2) A Basic Pension, which is equal to \$1,800 (for those Members who have attained their Normal Retirement Age) or \$2,800 (for all other Members); and
- 3) A Service Pension, which is equal to 3.0% of Final Average Compensation multiplied by service up to 25 years (for those Members who have at least 20 years of service and whose age plus service equals at least 70) or 2.0% of Final Average Compensation multiplied by service up to 30 years (for all other Members).
- 4) An additional benefit equal to 1.50% of Average Final Compensation for each year of Credited Service that exceeds 25 years, up to a maximum additional benefit of 4.50% of Average Final Compensation.

Normal Retirement Eligibility and Amount

Eligibility

Any age with age plus service equal to at least 70 and with at least 20 years of service

Amount

Retirement Allowance

Forms of Payment for Annuity

- 1) Normal Form: Life annuity
- 2) Optional Form: Lump sum payment equal to Accumulated Member Contributions

Forms of Payment (applicable to the Basic and Service Pensions only)

- 1) Normal Form of Payment:
 - For General Employees: 5-year certain and life annuity
 - For Firefighters and Police Officers: 10-year certain and life annuity
- 2) Optional Forms of Payment, which are the actuarially adjusted from the normal form:
 - 50% joint and survivor annuity with the reduced benefit payable upon the death of either the Member or his beneficiary
 - 66 2/3% joint and survivor annuity
 - 100% joint and survivor annuity
 - 100% joint and survivor annuity with spouse and a pop-up upon the death of the spouse to the amount of the retirement allowance prior to actuarial adjustment
 - Additional optional forms of payment available to Firefighters and Police Officers,
 - o Life annuity
 - o 75% joint and survivor annuity

Early Retirement Eligibility and Allowance

Eligibility

- Age 55 with at least 10 years of service for General Employees
- Age 50 with at least 10 years of service for Firefighters and Police Officers

Amount

- 100% of the Member's Annuity.
- For General Employees, the member's Basic and Service Pensions multiplied by his Vested Interest, payable at age 55.
- For Firefighters and Police Officers, member's Basic and Service Pensions payable age 50 with a 3.0% per year reduction from normal retirement.

Form of Payment

Same as for Normal Retirement

Disability Retirement Eligibility and Allowance

Eligibility

The Member must be totally and permanently incapacitated for duty in his classified position as an employee of the City, as determined by both the Board of Trustees and by a medical committee consisting of one doctor appointed by the Board of Trustees and one doctor selected by the Member.

Amount

The Member's accrued Retirement Allowance. For Firefighters and Police Officers, a minimum benefit of:

- For non-duty disability after 10 years of service: 25% of Average Final Compensation
- For duty related disability: 42% of Average Final Compensation

Form of Payment

Same as for Normal Retirement

Deferred Retirement (Vested) Eligibility and Allowance

Age

10 years of service.

Amount

- 100% of the Member's Annuity.
- For General Employees, the member's Basic and Service Pensions multiplied by his Vested Interest, payable at age 55.
- For Firefighters and Police Officers, member's Basic and Service Pensions payable age 50 with a 3.0% per year reduction from normal retirement.

Form of Payment

Same as for Normal Retirement

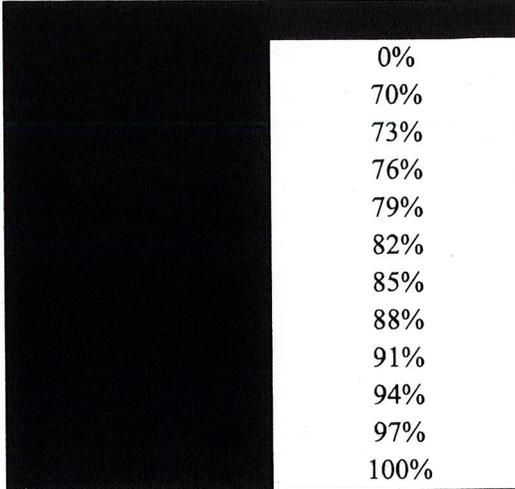
Pre-Retirement Death Benefit

In the case of the death of a General Employee Member prior to retirement, his beneficiary will receive a five-year certain annuity determined as if the Member had retired on the day before his death and elected a five-year certain and life annuity. In lieu of this five-year certain annuity, the beneficiary of the General Employee may elect to receive ½ of the same amount payable over a ten-year period. For Firefighters and Police Officers, the Member's vested accrued benefit deferred to

early (reduced) or normal retirement and payable for a minimum of 10 years. Alternatively, if the Member had attained his Normal or Early Retirement Age and had elected an optional form of payment, then his spouse will receive benefits as dictated by the option elected.

Vested Interest

For General Employees:



0%
70%
73%
76%
79%
82%
85%
88%
91%
94%
97%
100%

For Firefighters and Police Officers: 100% Vested Interest after 10 years of service.

Average Final Compensation

Average compensation for the highest three years of service (not necessarily consecutive), where compensation includes base salary plus any longevity or special assignment pay and any pay received in connection with Florida’s law enforcement special incentive program or Firefighters supplemental compensation program.

Membership Requirements

All classified employees of the City of Hialeah, Florida participate in the plan, including: (1) all full-time employees (except as provided by law), and (2) those part-time employees working 22½ hours or more per week who elect to participate after one year of continuous employment. Membership does not include any person whose services are compensated on a fee or contractual basis, the Board of Trustees’ medical committee, elected or appointed officials who are not in classified service, and persons employed on a temporary or provisional basis for less than nine months.

Effective April 1, 2012, the Plan is closed to new General Employee members hired on or after April 1, 2012. New General Employees will instead participate in a defined contribution plan.

Accumulated Member Contributions

The Accumulated Member Contributions are the Member’s Contributions accumulated with interest at the annual rates established by the Board of Trustees. Beginning with the 1995/1996 plan year, interest will be credited at the arithmetic average of the annual yields on the market value of assets for the preceding five years. Interest is credited each September 30 on the balance of the Accumulated Member Contributions as of the preceding October 1 as well as on additional Member Contributions made during the plan year. Members may borrow against their Accumulated Member Contributions as of the preceding October 1, subject to the restrictions set forth in the law.

Member Contributions

1. All members must contribute 7.0% of compensation per year into the Annuity Savings Fund (with the exception that they may redirect some of these contributions to satisfy the additional requirements that follow).
2. All members who were not eligible for Normal Retirement will also be required to make the following additional contribution towards the non-Annuity Savings Fund portion of the Retirement Allowance:
 - a. General Employees:
 - 5.0% of pensionable compensation from May 15, 2014 to September 30, 2014.
 - 4.0% of pensionable compensation from October 1, 2014 forward, which will decrease to 3.0% of pensionable compensation if the Funded Ratio is between 80% and 100% and to 0.0% of pensionable compensation if the Funded Ratio exceeds 100%.
 - b. Firefighters:
 - 5.0% of pensionable compensation from October 1, 2013 to September 30, 2014
(4.0% of pensionable compensation if hired on or after November 15, 2013).
 - 4.0% of pensionable compensation from October 1, 2014 forward, which will decrease to 3.0% of pensionable compensation if the Funded Ratio is between 80% and 100% and to 0.0% of pensionable compensation if the Funded Ratio exceeds 100%.
 - c. Police Officers:
 - 5.0% of pensionable compensation from March 2, 2014 to September 30, 2014
(4.0% of pensionable compensation if hired on or after March 2, 2014).
 - 4.0% of pensionable compensation from October 1, 2014 forward, which will decrease to 3.0% of pensionable compensation if the Funded Ratio is between 80% and 100% and to 0.0% of pensionable compensation if the Funded Ratio exceeds 100%.

If a Police Officer or Firefighter terminates employment before they are vested, then they will receive a refund of these additional contributions. General Employees will not receive a refund of these contributions.

Share Plans Contributions

Effective with the year beginning October 1, 2005, the Firefighters' and Police Officers' share plans will make contributions to fund the cost of the minimum benefits under Chapter 99-1, Florida Statutes. The annual contribution paid from the Share Plan is \$461,877.

Cost-of-Living Adjustment

Members (including participants in the DROP and excluding beneficiaries and those Members who are receiving a Deferred Retirement Allowance) receive an automatic level 2.0% cost-of-living adjustment in their Basic and Service Pensions as of each anniversary of retirement or the first of the month following their 52nd birthday and limited to 10 such increases (for a total increase of 20%).

Deferred Retirement Option Program

Effective March 1, 2007 for Police Officers and Firefighters and February 19, 2008 for General Employees, members are eligible to participate in a Deferred Retirement Option Program (DROP) upon the completion of 25 years of membership service credit provided that the sum of the member's age and service is equal to at least 70. The member's monthly retirement benefit (basic plus service pension), based on final average earnings and service upon entering the DROP, will be paid to the member's DROP account. At the end of each fiscal year, interest will be credited to the DROP account at the same rate credited to the annuity savings account.

Member contributions cease upon entering the DROP and the member shall be ineligible for disability benefits provided by the System. Upon termination of employment or death, the DROP account balance will be paid in a cash lump sum. The maximum period of participation in the DROP is 36 months and members cannot buy service in order to be eligible for the DROP.

General Employees who are members of the retirement system are prohibited from entering the DROP on or after April 2, 2012.

Actuarial Equivalence

For purposes of computing optional forms of benefit payments and for purposes of computing any adjustments called for under the terms of the Plan, when such interest rate and mortality assumptions are not otherwise provided:

Interest Rate Assumption:	The rate currently adopted by the Board is 7.0%.
Mortality Assumption:	The mortality factors or table currently adopted by the Board is the RP 2014 Mortality Table for Healthy Annuitants, projected from the base year 2014 to the year of retirement using Mortality improvement scale MP-2016, with the resulting rates blended using 50% male and 50% female.

City Contribution Policy

The City contributes to the Retirement System in accordance with the requirements of Part VII, Chapter 112 of the Florida Statutes. Effective August 25, 2009, the City implemented a contribution floor such that the City's contribution to the Retirement System will be at least 22% of the member payroll. The City may increase or decrease the floor by up to 2.00% of member payroll once every five years, if supported by an actuarial study. The floor shall not be less than 16% or more than 28% of member payroll.

Section 2 –Benefit changes that apply to certain Members
(Benefits are the same as Section 1 except as noted)

For Police Officers hired on or after March 14, 2014, the Basic Pension is eliminated and the Service Pension minimum Age plus Service is changed from 70 points to 76 points to receive the Normal (full) Retirement Benefit and DROP eligibility. Additionally, the Vested or Deferred Benefits payable for these Members is payable at age 59 ½. Lastly, the automatic Cost of Living Adjustments (COLA's) for these Members is reduced from 2.0% per year to 1.0% per year.

For Firefighters hired on or after November 15, 2013, the Basic Pension is eliminated and the Service Pension minimum Age plus Service is changed from 70 points to 76 points to receive the Normal (full) Retirement Benefit and DROP eligibility. Additionally, the Vested or Deferred Benefits payable for these Members is payable at age 59 ½. Lastly, the automatic Cost of Living Adjustments (COLA's) for these Members is reduced from 2.0% per year to 1.0% per year.

The following benefit reductions were made for the General Employees of the System effective December 1, 2017:

- 1.) **Fully Grandfathered** - Members eligible for Normal Retirement before December 1, 2017 will be required to make an additional contribution of 5.0% of salary (in addition to contributions to the Annuity Savings Plan). If the Member had already been contributing 4.0% of Salary, then their new Member Contribution Rate to the retirement plan will be 9.0% of Salary. If the Member had not been contributing to the retirement plan because they were eligible for Normal Retirement when the original retirement plan Member Contributions were enacted, then their new Member Contribution Rate to the retirement plan will be 5.0% of Salary.
- 2.) **Partially Grandfathered with at least 20 years of service** – Those Members who, as of December 1, 2017, have completed at least 16 years of actual service with the City, have attained 62 points (age plus service equals 62), and have at least 20 years of Credited Service. The Member Contribution Rate will increase effective December 1, 2017 from 4.0% to 9.0% of Salary. The benefit accrual rate for the Normal Service Retirement Benefit will be 3.0% for each year of Credited Service earned prior to December 1, 2017 and 2.0% for each year of Credited Service earned on and after that date, with a maximum benefit of 75% of Average Final Compensation.
- 3.) **Partially Grandfathered with less than 20 years of service** – Those Members who, as of December 1, 2017, have completed at least 16 years of actual service with the City, have attained 62 points (age plus service equals 62), and have less than 20 years of Credited Service, will have their Member Contribution Rate increase from 4.0% to 9.0% of Salary. The benefit accrual rate for the Normal Service Retirement Benefit will be 3.0% for each of the first 20 years of Credited Service plus 2.0% for each year of Credited Service earned above 20 years, with a maximum benefit of 75% of Average Final Compensation.

The following benefit reductions were made for the General Employees of the System effective December 1, 2017 (continued):

- 4.) **Non-Grandfathered** – Those Members who, as of December 1, 2017, were not eligible for Normal Retirement, or had not completed at least 16 years of actual service with the City or had not attained 62 points, will have their Member Contribution increase from 4.0% to 9.0% of Salary and have the following benefit changes:
- A. All benefits accrued as of November 30, 2017 will be “frozen”. The frozen benefits will be payable under the same terms as were in effect before December 1, 2017 (Normal Retirement at 20 years of Credited Service with age plus service at least 70, Vested Retirement at 55 with 10 years of Credited Service, etc.). The frozen benefits will use Average Final Compensation and Credited Service determined as of November 30, 2017. The frozen benefits cannot commence until a Member terminates employment with the City. All Non-Grandfathered General Employees will be 100% vested in this frozen benefit.
 - B. Benefits earned on and after December 1, 2017 (“future service benefits”) shall accrue in accordance with the provisions of the retirement plan in effect before December 1, 2017, except as follows:
 - 1.) The benefit accrual rate for Credited Service earned on and after December 1, 2017 shall be 2.0% per year, with a maximum benefit of 75% of Average Final Compensation (AFC). The 75% of AFC maximum applies to the Service Pension Benefits accrued both prior to and after December 1, 2017. The 1.5% additional benefit multiplier for service after 25 years shall be eliminated. The 25-year cap is also eliminated.
 - 2.) Average Final Compensation shall be the average of the highest annual Compensation received by a member during the highest 8 years of credited service; provided, in no event shall a Member’s Average Final Compensation be less than the highest 3-year average as of December 1, 2017.
 - 3.) The Normal Retirement Date shall be age 62 with 20 years of Credited Service.
 - 4.) Compensation shall be base pay only. All other types of compensation shall be excluded for retirement purposes.
 - 5.) There shall be no Cost of Living Adjustments (COLA’s) on benefits based on credited service earned on or after December 1, 2017.
 - 6.) Members shall not be eligible to purchase additional Credited Service on or after December 1, 2017.
 - 7.) Members shall become vested in the “future service” benefit upon reaching age 55 with 10 or more years of Credited Service. Once they reach age 55 the vesting percentage is 70% at 10 years of service plus 3% for each year between 10 and 20 years of service. However, a Member cannot begin to receive this deferred vested benefit until age 62. Members who do not attain age 55 with 10 years of Credited Service will receive a refund of their Member Contributions made to the retirement plan on and after December 1, 2017.

The following benefit reductions were made for the Police Officers of the System effective October 1, 2018:

Tier 1A – Those Members eligible for Normal Retirement as of March 2, 2014

- 1.) The maximum DROP participation period is extended from 3 years to 5 years
- 2.) The following member contributions will be required:

October 1, 2018 – September 30, 2019:	2.0% of pensionable Salary
October 1, 2019 – September 30, 2020:	4.0% of pensionable Salary
October 1, 2020 and forward:	6.0% of pensionable Salary

Tier 1B – Those Members eligible for Normal Retirement as of October 1, 2018

- 1.) The maximum DROP participation period is extended from 3 years to 5 years
- 2.) The following member contributions will be required:

October 1, 2018 – September 30, 2019:	6.0% of pensionable Salary
October 1, 2019 – September 30, 2020:	8.0% of pensionable Salary
October 1, 2020 and forward:	10.0% of pensionable Salary

Tier 1C – Those Members with at least 20 years of service and 66 points as of October 1, 2018 –
Those Members who, as of October 1, 2018, have completed at least 16 years of actual service with the City, have attained 66 points (age plus service equals 66), and have at least 20 years of Credited Service, will have the following changes:

- 1.) The same member contribution changes as Tier 1B.
- 2.) The benefit accrual rate for the Normal Service Retirement Benefit will be 3.0% for each year of Credited Service earned prior to October 1, 2018, and 2.75% for each year of Credited Service earned on and after that date, with a maximum benefit of 79.5% of Average Final Compensation.
- 3.) The minimum benefit is 2.75% of Average Final Compensation for each year of Credited Service.
- 4.) The maximum DROP participation period is extended from 3 years to 5 years.

Tier 1D – Those Members with 16 to 20 years of service and 66 points as of October 1, 2018 –
Those Members who, as of October 1, 2018, had completed at least 16 years of actual service with the City, have attained 66 points (age plus service equals 66), and had less than 20 years of Credited Service, will have the following changes:

- 1.) The same member contribution changes as Tier 1B.
- 2.) The benefit accrual rate for the Normal Service Retirement Benefit will be 3.0% for each year of Credited Service earned up to 20 years, and 2.75% for each year of Credited Service earned above 20 years, with a maximum benefit of 79.5% of Average Final Compensation.
- 3.) The minimum benefit is 2.75% of Average Final Compensation for each year of Credited Service.
- 4.) The maximum DROP participation period is extended from 3 years to 5 years.

The following benefit reductions were made for the Police Officers of the System effective October 1, 2018 (continued):

Tier 1E – Those Members with 16 years, but not 66 points as of October 1, 2018 – Those Members who, as of October 1, 2018, completed at least 16 years of actual service with the City, but had not attained 66 points, will have the same member contribution rate changes as Tier 1B and the following benefit changes.

- A. All benefits accrued as of September 30, 2018 are “frozen”. The frozen benefits will be payable under the same terms as were in effect before October 1, 2018. The frozen benefits will use Average Final Compensation and Credited Service determined as of September 30, 2018. The frozen benefits cannot commence until a Member terminates employment with the City. All Police Officers are 100% vested in this frozen benefit.
- B. Benefits earned on and after October 1, 2018 (“future service benefits”) shall accrue in accordance with the provisions of the retirement plan in effect before October 1, 2018, except as follows:
 - (1) The benefit accrual rate for Credited Service earned on and after October 1, 2018 shall be 2.75% per year, with a maximum benefit of 79.5% of Average Final Compensation (AFC). The 79.5% of AFC maximum applies to the Service Pension Benefits accrued both prior to and after October 1, 2018. The 1.5% additional benefit multiplier for service after 25 years shall be eliminated. The 25-year cap is also eliminated. Provided, however, that the minimum benefit (including the basic pension) shall be 2.75% of average final compensation for all years of credited service.
 - (2) Average Final Compensation shall be the average of the highest annual Compensation received by a member during the highest 5 years of credited service; provided, in no event shall a Member’s Average Final Compensation be less than the highest 3-year average as of September 30, 2018.
 - (3) The Normal Retirement Date shall be the earlier of 1.) age 55 with 10 years of Credited Service, 2.) age 52 with 25 years of Credited Service, or 3.) 27 years of Credited Service, regardless of age.
 - (4) Compensation shall be base pay only. All other types of compensation shall be excluded for retirement purposes.
 - (5) There shall be no Cost of Living Adjustments (COLA’s) on benefits based on credited service earned on or after October 1, 2018.
 - (6) Members shall not be eligible to purchase additional Credited Service on or after October 1, 2018, except that upon reaching 25 years of service, this group may purchase up to 2 years of service.
 - (7) Members may enter the DROP upon attaining the earlier of 1.) age 52 with 25 years of credited service, or 2.) 27 years of service, regardless of age, and may participate in the DROP for a maximum of 5 years.

The following benefit reductions were made for the Police Officers of the System effective October 1, 2018 (continued):

Tier 1F – Those Members with 10 but not 16 years as of October 1, 2018 – Those Members who, as of October 1, 2018, completed at least 10 years of actual service with the City, but had not completed 16 years of actual service, will have the exact same changes as Tier 1E, except that they would not be allowed to purchase any service after October 1, 2018.

Tier 1G – Those Members with less than 10 years of service as of October 1, 2018, who were hired before March 2, 2014 – Those Members who, as of October 1, 2018, completed less than 10 years of actual service with the City, have the exact same changes as Tier 1F, except that they do not have the normal retirement provision of the completion of 27 years of service, regardless of age mentioned in (B)(3) and (B)(7) listed above.

Tier 2 – Those Members who were hired on or after March 2, 2014 – These Members have the exact same changes as Tier 1G, except that they have no Basic Pension and the minimum age plus service for the “frozen” benefit is 76 points instead of 70. Additionally, the Vested or Deferred benefits are payable at age 59 ½. Lastly, the COLA on the “frozen” benefit is 1.0% per year, instead of 2.0%.

Police Officers who separate from city employment prior to vesting may obtain a refund of member contributions made on and after October 1, 2018, with interest at the rate of 3.0% per annum, in lieu of receiving benefits accrued after October 1, 2018. Additionally, DROP members at the time the ordinance is adopted can extend their DROP period an additional two years.

The following benefit reductions were made for the Firefighters of the System effective November 12, 2019 per Ordinance 2019-090:

- 1.) **Members eligible for Normal Retirement as of November 12, 2019** – Members who are retirement eligible as of November 12, 2019 will have no change to the benefits provided under the plan. Normal retirement eligibility is defined as follows:
 - a. 20 years of service with 70 points for those hired before November 15, 2013.
 - b. 20 years of service with 76 points for those hired on after November 15, 2013.
 - c. Age 55 with 10 years of service
 - d. Age 52 with 25 years of service
- 2.) **Members not eligible for Normal Retirement as of November 12, 2019** – Accrued benefits are frozen as of November 12, 2019 and members are 100% vested in their frozen benefit. Frozen benefits shall be payable upon reaching Normal Retirement eligibility as defined in item 1 above. Benefits will accrue after the November 12, 2019 as follows:
 - a. The benefit accrual rate will be 2.75% for each year of Credited Service earned on and after November 12, 2019.
 - b. Final average compensation will be the average highest annual compensation during highest 5 years of credited service, but no less than the 3-year average as of November 12, 2019.
 - c. Compensation after November 12, 2019 will be base pay only.
 - d. The maximum benefit is 79.5% of Average Final Compensation. However, the minimum benefit, regardless of type of retirement, will be 2.75% of final average compensation for all years of Credited Service.
 - e. Benefits earned after November 12, 2019 shall be payable upon reaching the earlier age 55 with 10 years of service and age 52 with 25 years of service (i.e., 1c. and 1d. above).

The following benefit reductions were made for the Firefighters of the System effective November 12, 2019 per Ordinance 2019-090 (continued):

- 3.) As of November 12, 2019, Firefighters are prohibited from purchasing membership credit service time. Any purchase made prior to the November 12, 2019 shall be irrevocable, and any previous purchase of membership credit service time cannot be sold back to the retirement plan.
- 4.) The eligibility to enter DROP is age 52 with 25 years of service and the maximum DROP participation period is limited to 3 years for those entering DROP after November 12, 2019.
- 5.) Firefighters who entered the DROP on or after February 28, 2016 and prior to November 12, 2019 may extend DROP participation for up to two additional years for a total of 5 years.
- 6.) Firefighter member contributions may be made in lieu of or in addition to annuity fund contributions.

The following benefit changes were made for the Firefighters of the System effective June 4, 2020 per Ordinance 2020-016:

The benefit changes apply to those firefighters that have not reached normal retirement date as of November 12, 2019 unless otherwise noted.

- 1.) As of the June 4, 2020, compensation for firefighters shall include specialty pay received by the member, up to 5.0% of the base salary.
- 2.) As of the June 4, 2020, members who separate from the City prior to vesting may obtain a refund of member contributions made on and after June 4, 2020, with interest at 3.0% per year, in lieu of receiving benefits accrued after November 12, 2019 from the Plan.
- 3.) Firefighters who entered the DROP on or after February 28, 2016 and prior to November 12, 2019 may extend DROP participation for up to 2 additional years for a total of 5 years.
- 4.) The maximum DROP participation period shall be 60 months for members who enter the DROP on and after February 28, 2016.
- 5.) **Members eligible for full retirement benefit as of November 15, 2013 (i.e., members who have 20 years of credited service and 70 points when age plus years of credited service are combined)**

Member contributions shall be as follows:

- i. June 4, 2020 – September 30, 2020: 2.0% of compensation
- ii. October 1, 2020 – September 30, 2021: 4.0% of compensation
- iii. Beginning on October 1, 2021: 6.0% of compensation

- 6.) **Members not eligible for full retirement benefit as of November 15, 2013 (i.e., members who do not have 20 years of credited service and 70 points when age plus years of credited service are combined)**

Member contributions shall be as follows:

- i. June 4, 2020– September 30, 2020: 6.0% of compensation
- ii. October 1, 2020 – September 30, 2021: 8.0% of compensation
- iii. Beginning on October 1, 2021: 10.0% of compensation

The following benefit changes were made for the Firefighters of the System effective June 4, 2020 per Ordinance 2020-016 (continued):

- 7.) Members with 16 years of actual service (excluding service purchases), less than 20 years of credited service and at least 66 points on November 12, 2019**
 - a. The benefit accrual rate shall be 2.75% for each year of Credited service earned after attaining 20 years of service.
 - b. The maximum benefit is 79.5% of Average Final Compensation. However, the minimum benefit, regardless of type of retirement, will be 2.75% of final average compensation for all years of Credited Service.
 - c. Members shall be eligible to participate in the DROP for a maximum of five years.
- 8.) Members with 16 years of actual service (excluding service purchases), at least 20 years of credited service, and at least 66 points on November 12, 2019**
 - a. The benefit accrual rate shall be 3.0% for each year of Credited Service as of November 12, 2019, and 2.75% for each year of Credited Service earned after November 12, 2019.
 - b. The maximum benefit is 79.5% of Average Final Compensation. However, the minimum benefit, regardless of type of retirement, will be 2.75% of final average compensation for all years of Credited Service.
 - c. Members shall be eligible to participate in the DROP for a maximum of five years.
- 9.) Members with 16 years of actual service (excluding purchased service) and less than 66 points on November 12, 2019**
 - a. Members shall be eligible for Normal Retirement upon reaching 27 years of Credited Service, regardless of age
 - b. Upon reaching 25 years of actual service, members shall be eligible to purchase up to 2 years of membership credited service time (not to exceed the maximum of 4 years of purchased service)
 - c. Members shall be eligible to participant in the DROP for a maximum of five years upon completion of 27 years of actual service
- 10.) Members with 10 years of actual service (excluding purchased service), but less than 16 years of actual service (excluding purchased service) on November 12, 2019**
 - a. Members shall be eligible for Normal Retirement upon reaching 27 years of Credited Service, regardless of age
 - b. Members shall be eligible to participant in the DROP for a maximum of five years upon completion of 27 years of actual service

The following benefit changes were made for the Police Officers of the System effective June 4, 2020 per Ordinance 2020-017:

For those police officers that did not have 16 years of actual service (excluding service purchases) and at least 66 points when age plus years of credited service are combined as of October 1, 2018, compensation shall include specialty pay received by the member, up to 5% of the base salary.

GLOSSARY

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

- (a) The normal cost accrual rate equals:
 - (i) the present value of future benefits for the member, determined as of the member's entry age, divided by
 - (ii) the present value of the compensation expected to be paid to the member for each year of the member's anticipated future service, determined as of the member'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 members and beneficiaries. An active member's accrued liability equals the present value, at the member's attained age, of future benefits less the present value at the member's attained age of the individual normal costs payable in the future. An inactive member's accrued liability equals the present value, at the member'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 member is the member'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.

Normal Cost is the current year's cost for benefits being accrued in the upcoming year plus estimated administrative expenses.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current members.

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

Total Required Contribution is equal to the Normal Cost plus an amount sufficient to amortize the Unfunded Accrued Liability. The required amount is adjusted for interest according to the timing of contributions during the year.

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