



nyhart  
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# City of St. Petersburg Police Officers' Retirement System

October 1, 2019  
Actuarial Valuation Report

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## Actuarial Certification

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At the request of the plan sponsor, this report summarizes the actuarial results of the City of St. Petersburg Police Officers' Retirement System as of October 1, 2019. The purpose of this report is to communicate the following results of the valuation:

- Determine Funded Status; and
- Determine Recommended Contribution for the fiscal year October 1, 2020 through September 30, 2021.

This report has been prepared in accordance with the applicable Federal and State laws. Consequently, it may not be appropriate for other purposes. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than that explained above. Failure to do so may result in misrepresentation or misinterpretation of this report.

The results in this report were prepared using information provided to us by other parties. The census information has been provided to us by the employer. Asset information has been provided to us by the trustee. We have reviewed the provided data for reasonableness when compared to prior information provided, but have not audited the data. Where relevant data may be missing, we have made assumptions we believe to be reasonable. We are not aware of any significant issues with and have relied on the data provided. Any errors in the data provided may result in a different result than those provided in this report. A summary of the data used in the valuation is included in this report.

Certain assumptions and methods were chosen by the Board and have been disclosed in the "Actuarial Assumptions" section of this report. In our opinion, all actuarial assumptions and methods are individually reasonable and in combination represent our best estimate of anticipated experience of the plan. Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following:

- plan experience differing from that anticipated by the economic or demographic assumptions;
- changes in economic or demographic assumptions;
- increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period); and
- changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement. This report has been prepared in accordance with generally accepted actuarial principles and practice.

This actuarial valuation and/or cost determination 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.

## Actuarial Certification

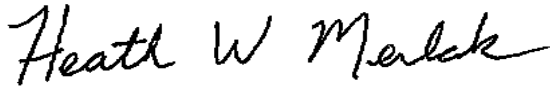
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With respect to reporting standards for defined benefit retirement plans or systems contained in Section 112.664(1), F.S., the actuarial disclosures required under this section were prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, meet the requirements of Section 112.664 (1), Florida Statutes, and Rule 60T-1.0035, Florida Administrative Code.

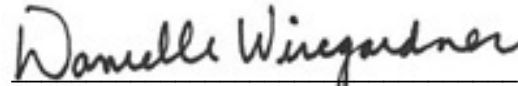
Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the purpose of avoiding penalties that may be imposed by law.

The undersigned are compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States and are available for any questions.

Nyhart



Heath Merlak, FSA, EA, MAAA  
Enrolled Actuary No. 17-05967



Danielle Winegardner, FSA, EA, MAAA  
Enrolled Actuary No. 17-08260

March 17, 2020  
Date

## Executive Summary

The actuarial report provides the plan sponsor with several ways to measure the funded status of the pension plan. The following detail is included in the report:

- Actuarial Recommended Contribution
- Asset Performance
- Plan Demographics

This report is filled with actuarial terminology. However, the ultimate objective of the valuation is to provide a rational method of funding the plan. It is necessary to fund the benefit promised by the employer in a manner that is logical and employer friendly, yet safeguards the participants' interest. The actuarially derived contribution, however, is not the true cost of the pension plan. The true cost is illustrated by the following formula:

$$\text{Ultimate Pension Cost} = \text{Benefits Paid} - \text{Investment Income} + \text{Plan Expenses}$$

While the plan's liability and normal cost determine the current contribution recommendations, the true cost is controlled only by the "defined" benefit and investment income generated by the underlying assets. The actuarial process only controls the timing of costs.

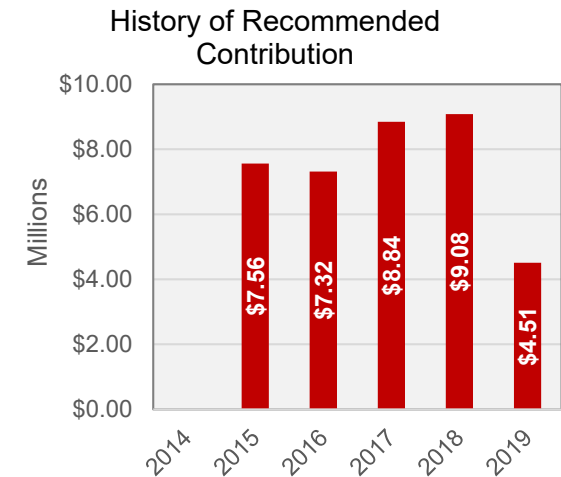
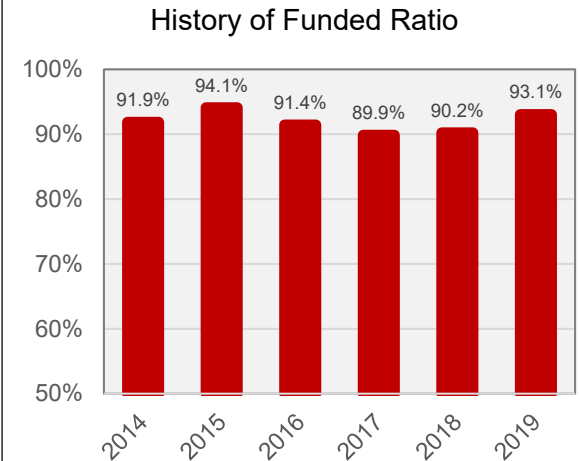
We suggest that a plan sponsor treat the actuarial report as you would treat a scorecard. It is simply a measure of progress toward the ultimate goal of paying all pension benefits when participants retire.

## Executive Summary

### Summary Results

The actuarial valuation's primary purpose is to produce a scorecard measure displaying the funding progress of the plan toward the ultimate goal of paying benefits at retirement. The accrued liability is based on an entry age level percentage of pay.

	October 1, 2018	October 1, 2019
<b>Funded Status Measures</b>		
Accrued Liability	\$460,565,642	\$466,289,181
Actuarial Value of Assets	<u>\$415,516,145</u>	<u>\$433,886,739</u>
Unfunded Actuarial Accrued Liability (UAAL)	\$45,049,497	\$32,402,442
Funded Percentage (AVA)	90.2%	93.1%
Funded Percentage (MVA)	93.2%	91.3%
<b>Cost Measures</b>		
Recommended Contribution	\$9,083,413	\$4,509,325
Recommended Contribution (as a percentage of payroll)	23.6%	10.5%
<b>Asset Performance</b>		
Market Value of Assets (MVA)	\$430,119,356	\$427,510,315
Adjusted Market Value of Assets	\$429,018,115	\$425,900,576
Actuarial Value of Assets (AVA)	\$415,516,145	\$433,886,739
Actuarial Value/Market Value	96.9%	101.9%
Market Value Rate of Return	9.8%	3.0%
Actuarial Value Rate of Return	7.5%	8.2%
<b>Participant Information</b>		
Active Members	488	502
Terminated Vested Members	43	49
Retirees, Beneficiaries and Disabled Members	627	635
DROP Participants	<u>61</u>	<u>52</u>
Total	1,219	1,238
Expected Payroll	\$38,453,500	\$43,001,170



### Changes since Prior Valuation and Key Notes

There have been no changes to the plan provisions since the last valuation.

The discount rate was changed from 7.90% to 7.85% to better reflect recent experience and anticipated future returns. The change in interest assumptions results in an increase in accrued liability and normal cost.

The mortality assumption was updated to match a recent change to the Florida Retirement System (FRS) mortality tables. The 2018 FRS mortality tables were based on the RP-2000 mortality tables, with future mortality improvements reflected using mortality improvement Scale BB. The 2019 FRS mortality tables were based on the Pub-2010 Mortality Tables for public sector retirement plans and MP-2018 generational improvements. The tables were developed from data collected for 2008-2013. This change decreased the Plan accrued liability and the normal cost.

The aggregate payroll growth rate (used to determine the amortization of unfunded liability bases) increased from 2.0% to 2.6%, as limited by the ten-year average historical growth in payroll.

The amortization method has been lowered from a 30-year closed amortization to a 25-year closed amortization for amortizations created on 10/1/2019 and later. This change results in an increase in the recommended contribution.

## Executive Summary

### Five Year Valuation Summary

	10/01/2015*	10/01/2016	10/01/2017	10/01/2018	10/01/2019
<b>Funding</b>					
Accrued Liability	\$402,566,654	\$427,498,227	\$447,871,545	\$460,565,642	\$466,289,181
Actuarial Value of Assets	\$378,842,334	\$390,924,036	\$402,747,647	\$415,516,145	\$433,886,739
Unfunded Actuarial Accrued Liability	\$23,724,320	\$36,574,191	\$45,123,898	\$45,049,497	\$32,402,442
Funded Percentage	94.1%	91.4%	89.9%	90.2%	93.1%
Total Normal Cost (NC)	\$6,002,339	\$6,807,919	\$7,292,965	\$7,704,318	\$8,528,586
NC as a Percent of Covered Payroll	19.2%	19.4%	19.7%	20.0%	19.8%
Actual Employer Contribution	\$10,258,299	\$7,770,299	\$7,562,663	\$7,315,889	\$8,843,831
Recommended Contribution	\$10,258,299	\$7,770,299	\$7,562,663	\$7,315,889	\$8,843,831
Recommended Contribution (% of Pay)	28.4%	24.9%	21.5%	19.7%	23.0%
Interest Rate	8.00%	8.00%	7.95%	7.90%	7.85%
Expense Load Assumption	\$141,980	\$102,921	\$83,473	\$63,398	\$36,991
<b>Rate of Return</b>					
Actuarial Value of Assets	9.9%	7.3%	7.2%	7.5%	8.2%
Market Value of Assets	-0.4%	8.2%	12.1%	9.8%	3.0%
<b>Demographic Information</b>					
Active Participants	431	465	465	488	502
Terminated Vested Participants	52	51	48	43	49
Retired Participants	373	433	453	471	475
Beneficiaries	84	88	87	91	94
Disabled Participants	66	64	64	65	66
DROP Participants	135	82	82	61	52
Total Participants	1,141	1,183	1,199	1,219	1,238
Covered Payroll	\$31,223,987	\$35,120,540	\$37,088,733	\$38,453,500	\$43,001,170
Average Covered Pay	\$72,445	\$75,528	\$79,761	\$78,798	\$85,660

\*From valuation reports prepared by Buck Consultants, LLC



## Executive Summary

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### Identification of Risks

The results presented in this report are shown as single point values. However, these values are derived using assumptions about future markets and demographic behavior. If actual experience deviates from our assumptions, the actual results for the plan will consequently deviate from those presented in this report. Therefore, it is critical to understand the risks facing this pension plan. The following table shows the risks we believe are most relevant to the City of St. Petersburg Police Officers' Retirement System. The risks are generally ordered with those we believe to have the most significance at the top. Also shown are possible methods by which a more detailed assessment of the risk can be performed.

Type of Risk	Method to Assess Risk
Investment Return	Scenario Testing; Asset Liability Study
Contribution Risk	Projections and Contribution Strategy; Annual Monitoring
Demographic Risk	Projections; Stress Testing

### Plan Maturity Measures - October 1, 2019

Each pension plan has a distinct life-cycle. New plans promise future benefits to active employees and then accumulate assets to pre-fund those benefits. As the plan matures, benefits are paid and the pre-funded assets begin to decumulate until ultimately, the plan pays out all benefits. A plan's maturity has a dramatic influence on how risks should be viewed. The following maturity measures illustrate where the City of St. Petersburg Police Officers' Retirement System falls in its life-cycle.

#### **Duration of Liabilities: 12.2**

Duration is the most common measure of plan maturity. It is defined as the sensitivity of the liabilities to a change in the interest rate assumption. The metric also approximates the weighted average length of time, in years, until benefits are expected to be paid. A plan with high duration is, by definition, more sensitive to changes in interest rates. A plan with low duration is more susceptible to risk if asset performance deviates from expectations as there would be less time to make up for market losses in adverse market environments while more favorable environments could result in trapped surplus from gains. Conversely, high duration plans can often take on more risk when investing, and low duration plans are less sensitive to interest rate fluctuations.

#### **Demographic Distribution - Ratio of Actively Accruing Participants to All Participants: 40.5%**

A plan with a high ratio is more sensitive to fluctuations in salary and statutory changes. A plan with a low ratio is at higher risk from demographic experience. Such a plan should pay close attention to valuation assumptions as there will be less opportunity to realize future offsetting gains or losses when current experience deviates from assumptions. Plans with a low ratio also have limited opportunities to make alterations to plan design to affect future funded status.

#### **Asset Leverage - Ratio of Payroll for Plan Participants to Market Value of Assets: 10.1%**

Younger plans typically have a large payroll base from which to draw in order to fund the plan while mature plans often have a large pool of assets dedicated to providing benefits to a population primarily consisting of members no longer on payroll. Plans with low asset leverage will find it more difficult to address underfunding, as the contributions needed to make up the deficit will represent a higher percentage of payroll than for a plan with high asset leverage.

#### **Benefit Payment Percentage - Ratio of Annual Benefit Payments to Market Value of Assets: 6.9%**

As a plan enters its decumulation phase, a larger percentage of the pre-funded assets are paid out each year to retirees. A high percentage is not cause for alarm as long as the plan is nearly fully funded. However, such a plan is more sensitive to negative asset performance, especially if cash contributions are not an option to make up for losses.

## Assets and Liabilities

The basic building blocks of the actuarial report are contained in this section. These include:

- Actuarial Accrued Liabilities
- Asset Information
- Summary of Contributions

**Assets and Liabilities**

**Present Value of Future Benefits**

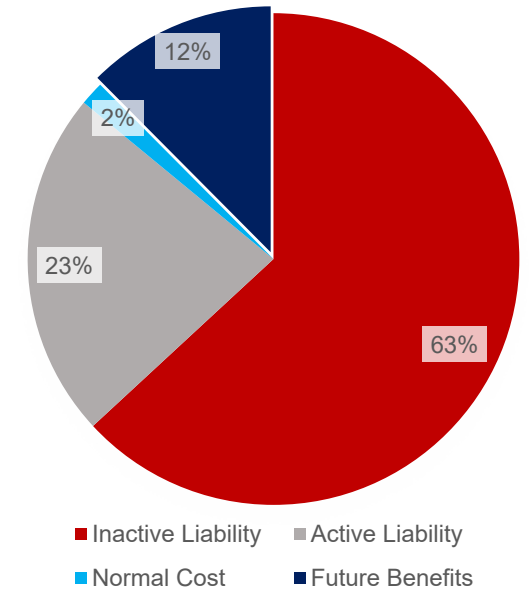
The Present Value of Future Benefits represents the discounted value of all future benefits expected to be payable to current members, considering future service and compensation not yet earned.

**October 1, 2019**

**Present Value of Future Benefits**

Active participants	
Retirement	\$155,505,478
Disability	20,123,750
Death	1,876,726
Termination	22,510,819
Total active	\$200,016,773
Inactive participants	
Retired participants	\$249,645,850
DROP participants	41,034,702
Beneficiaries	22,719,702
Disabled	24,641,614
Terminated vested participants	4,290,087
Total inactive	\$342,331,955
Total	\$542,348,728
 Present value of future payrolls	 \$384,831,776

**Breakdown of Present Value of Future Benefits**



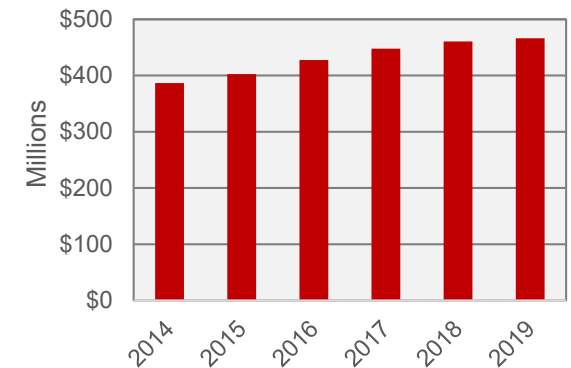
## Assets and Liabilities

### Actuarial Accrued Liability

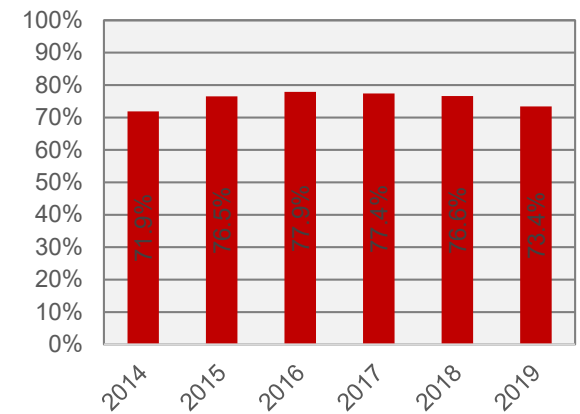
The Accrued Liability measures the present value of benefits earned as of the valuation date, using a specified set of actuarial assumptions. It is not a long-term snapshot of the liabilities.

	October 1, 2019
Active participants	
Retirement	\$107,284,524
Disability	6,058,463
Death	958,590
Termination	9,655,649
Total Active	<u>\$123,957,226</u>
Inactive participants	
Retired participants	\$249,645,850
DROP participants	41,034,702
Beneficiaries	22,719,702
Disabled	24,641,614
Terminated vested participants	4,290,087
Total Inactive	<u>\$342,331,955</u>
Total Actuarial Accrued Liability	<u>\$466,289,181</u>
Normal Cost	\$8,528,586
Interest Rate	7.85%

### History of Liabilities



### History of the Percentage of Inactive Liability



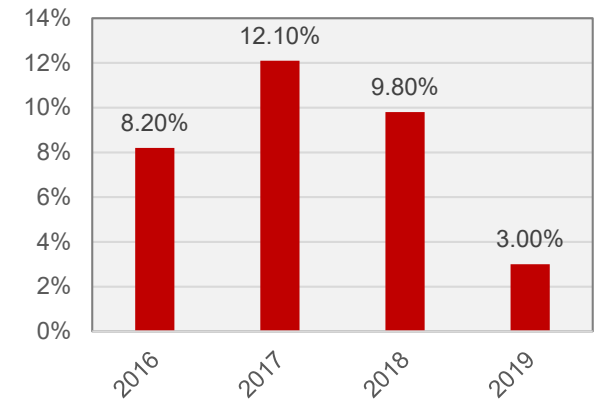
## Assets and Liabilities

### Asset Information

The amount of assets backing the pension promise is the most significant driver of volatility and future costs within a pension plan. The investment performance of the assets directly offsets the ultimate cost.

	October 1, 2019
<b>Market Value Reconciliation</b>	
Market value of assets, beginning of prior year	\$430,119,356
Contributions	
Employer contributions	\$8,843,831
Employee contributions	2,810,696
Non-Employer contributions	2,185,507
Total	\$13,840,034
Investment income, net expenses	12,763,071
Benefit payments and refunds	(29,185,726)
Administrative expenses	(26,420)
Market value of assets, beginning of current year	\$427,510,315
Accumulated reserve	(1,609,739)
Adjusted market value of assets available for pension benefits	\$425,900,576
<b>Historical Rates of Return</b>	
Rate of return for 2019	3.0%
Rate of return for 2018	9.8%
Rate of return for 2017	12.1%
Rate of return for 2016	8.2%
<b>Actuarial Value of Assets</b>	
Value at beginning of current year	\$433,886,739

### Rates of Return



Monitoring the pension plan's investment performance is crucial to eliminating surprises.

## Assets and Liabilities

### Asset Information (continued)

Plan Assets are used to develop funded percentages and contribution requirements.

	October 1, 2019
1. Expected market value of assets	
(a) Market value of assets (10/1/2018)	\$430,119,356
(b) Contributions	13,840,034
(c) Benefit payments	(29,185,726)
(d) Expenses	(26,420)
(e) Expected return	<u>33,535,533</u>
(f) Expected market value of assets (10/1/2019)	\$448,282,777
2. Market value of assets (10/1/2019)	\$427,510,315
3. Actual return on market value	\$12,763,071
4. Amount subject to phase in [(3)-(1e)]	(\$20,772,462)
5. Phase in of asset gain/(loss)	
(a) Current year (75% x (\$20,772,462))	(\$15,579,347)
(b) First prior year (50% x \$7,536,881)	3,768,441
(c) Second prior year (25% x \$15,298,971)	<u>3,824,743</u>
(d) Total phase-in	(\$7,986,163)
6. Preliminary actuarial value of assets (10/1/2019) [(2)-(5d)]	\$435,496,478
7. Adjusted market value of assets (less accumulated reserve)	\$425,900,576
8. 80% Market value of assets	\$340,720,461
9. 120% Market value of assets	\$511,080,691
10. Adjusted actuarial value of assets	\$435,496,478
11. Reserved assets	(\$1,609,739)
12. Final actuarial value of assets	\$433,886,739
13. Return on actuarial value of assets	8.24%

## Funding Results

The basic building blocks of the actuarial report are contained in this section. These include:

- Reconciliation of Gain/Loss
- Reconciliation of Unfunded Actuarial Accrued Liability (UAAL)
- Recommended Contribution



## Funding Results

### Reconciliation of (Gain)/Loss

October 1, 2019

#### Liability (Gain)/Loss

1. Actuarial liability, beginning of prior year	\$460,565,642
2. Normal cost for prior year	7,704,318
3. Benefit payments	(29,185,726)
4. Expected Interest	35,862,402
5. Change in Assumptions	(14,882,077)
6. Change in Plan Provisions	0
7. Expected actuarial liability, beginning of current year	\$460,064,559
8. Actual actuarial liability	466,289,181
9. Liability (Gain)/Loss, (8) – (7)	\$6,224,622

#### Asset (Gain)/Loss

10. Actuarial value of assets, beginning of prior year	\$415,516,145
11. Contributions	13,331,536
12. Benefit payments and expenses	(29,212,146)
13. Expected Investment return	32,376,876
14. Expected actuarial value of assets, beginning of current year	\$432,012,411
15. Actual actuarial value of assets, beginning of current year	433,886,739
16. Asset (Gain)/Loss, (14) – (15)	(\$1,874,328)

#### Total (Gain)/Loss, (9) + (16)

\$4,350,294

## Funding Results

### Reconciliation of Unfunded Actuarial Accrued Liability (UAAL)

	October 1, 2019
1. UAAL beginning of prior year	\$45,049,497
2. Normal Cost for prior year	7,704,318
3. Expenses	26,420
4. Employer Contributions	(8,843,831)
5. Employee Contributions	(2,810,696)
6. Non-Employer Contributions	(1,677,009)
7. Interest	3,485,526
8. Expected UAAL, beginning of current year	\$42,934,225
9. Changes due to:	
(a) Amendments	\$0
(b) Assumptions	
(1) Mortality Update	(\$17,452,009)
(2) Interest Rate Update from 7.90% to 7.85%	2,569,932
(c) Funding Methods	0
(d) Plan Provisions	0
(e) Total	(\$14,882,077)
10. (Gain)/Loss due to:	
(b) Assets	(\$1,874,328)
(c) Liabilities	6,224,622
(d) Total	\$4,350,294
11. UAAL beginning of current year [(8)+(9)+(10)]	\$32,402,442

**Funding Results**

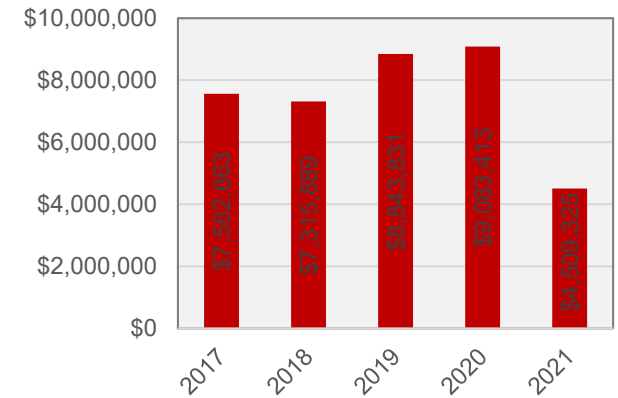
**Development of Actuarial Recommended Contribution**

The recommended contribution is the annual amount necessary to fund the plan according to funding policies and/or applicable laws.

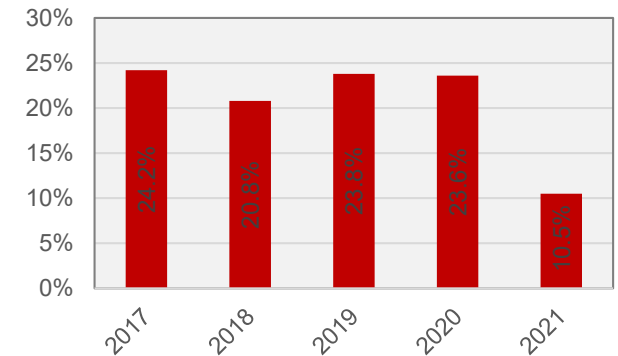
Funded Position	October 1, 2019
1. Entry age accrued Liability	\$466,289,181
2. Actuarial value of assets	433,886,739
3. Unfunded accrued liability, (1)-(2)	\$32,402,442
<b>Employer Contributions</b>	
1. Normal Cost	
a. Total normal cost	\$8,528,586
b. Expected participant contributions	2,994,255
c. Net normal cost	\$5,534,331
2. Administrative expenses	36,991
3. Amortization of UAAL	0
4. Applicable interest <sup>(1)</sup>	615,012
5. Total required contribution	\$6,186,334
6. Expected state contribution	1,677,009
7. Total recommended contribution	\$4,509,325
As a percentage of current payroll	10.5%

<sup>1)</sup> Based on assumed payment schedule where 1/12th of the City contribution is made on 10/1, 11/1, and 12/1 of the year following the valuation date with the remaining 9/12th contributed on 1/1 thereafter. The State contribution is estimated to be made 8/15 of the applicable fiscal year.

History of Recommended Contribution



History of Recommended Contribution (% of Payroll)



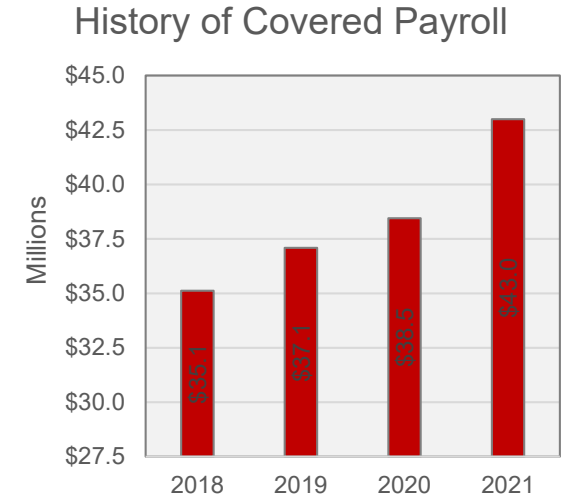
## Data, Assumptions, and Plan Provisions

- Demographic Information
- Plan Provisions
- Assumptions and Methods

**Demographic Information**

The foundation of a reliable actuarial report is the participant information provided by the plan sponsor. Monitoring trends in demographic information is crucial for long-term pension planning.

	October 1, 2018	October 1, 2019
<b>Participant Counts</b>		
Active Participants	488	502
Retired Participants	471	475
Beneficiaries	91	94
Disabled Participants	65	66
Terminated Vested Participants	43	49
DROP Participants	61	52
Total Participants	1,219	1,238
<b>Active Participant Demographics (Ongoing)</b>		
Average Age	37.5	37.9
Average Service	9.2	9.5
Average Compensation	\$78,798	\$85,660
Total Covered Payroll	\$38,453,500	\$43,001,170



**Demographic Information (continued)**

	October 1, 2018	October 1, 2019
<b>Retiree Statistics</b>		
Average Age	66.7	66.7
Average Monthly Benefit	\$3,721	\$3,794
<b>Beneficiary Statistics</b>		
Average Age	72.9	73.4
Average Monthly Benefit	\$2,120	\$2,179
<b>Disabled Participant Statistics</b>		
Average Age	61.5	61.8
Average Monthly Benefit	\$2,861	\$2,967
<b>Terminated Participant Statistics</b>		
Average Age	49.7	45.9
Average Monthly Benefit	\$1,184	\$1,020
<b>DROP Participant Statistics</b>		
Average Age	53.5	54.2
Average Monthly Benefit	\$4,807	\$4,911

Monitoring the average age of the population is important due to the relationship of actuarial cost to age. Generally speaking, an older population generates a higher actuarial cost.

Changes in the ratio of active to retired participants can be a significant driver of costs in a volatile asset market.

**Data, Assumptions, and Plan Provisions**

**Participant Reconciliation**

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Totals
<b>Prior Year</b>	488	43	65	532	91	1,219
<b>Active</b>						
To Death	0	0	0	0	0	0
To Terminated Vested	(6)	6	0	0	0	0
To Disabled	(2)	0	2	0	0	0
To Lump Sum Cash-Out	(5)	0	0	0	0	(5)
To Retired	(7)	0	0	7	0	0
<b>Terminated Vested</b>						
To Retired	0	(6)	0	6	0	0
To Survivor	0	0	0	0	0	0
To Lump Sum Cash-Out	0	(1)	0	0	0	(1)
To Death	0	0	0	0	0	0
<b>Disabled</b>						
To Death	0	0	(1)	0	0	(1)
<b>Retired</b>						
To Death	0	0	0	(18)	0	(18)
<b>Beneficiary</b>						
To Death	0	0	0	0	(4)	(4)
<b>Additions</b>	34	7	0	0	8	49
<b>Departures</b>	0	0	0	0	(1)	(1)
<b>Current Year</b>	502	49	66	527	94	1,238

**Data, Assumptions, and Plan Provisions**

**Active Participant Schedule**

Active participant information grouped based on age and service.

Age Group	Years of Service										Total	Average Pay
	Under 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 & Up		
Under 25	6	11									17	\$63,567
25 to 29	5	61	18	2							86	\$69,228
30 to 34	3	45	38	19	1						106	\$77,793
35 to 39	0	13	18	53	12	1					97	\$91,149
40 to 44	3	8	6	21	41	9					88	\$95,172
45 to 49	0	2	5	14	21	20	2				64	\$96,020
50 to 54	1	3	1	5	9	10	3	1			33	\$98,302
55 to 59			2	2		2	1	1			8	\$106,778
60 to 64				2							2	\$86,504
65 to 69				1							1	\$87,791
70 & up											0	\$0
<b>Total</b>	<b>18</b>	<b>143</b>	<b>88</b>	<b>119</b>	<b>84</b>	<b>42</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>502</b>	<b>\$85,660</b>



## **Data, Assumptions, and Plan Provisions**

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### **Plan Status**

Prior Retirement System 1951; Supplemental Retirement System October 1, 1970, as revised October 1, 1983

### **Eligibility for Participation**

#### **Supplemental Retirement System**

Membership is optional for members of Prior Police Officers Plan as of October 1, 1970. All regularly employed sworn Police Officers (excluding civilian employees) hired on or after October 1, 1970, are eligible to participate. Employees excluded before October 1, 1986, due to being over age 35 may elect to be covered, and may purchase prior service for service in Employees' Retirement System.

### **Accrual of Benefits**

#### **Supplemental Retirement System**

Effective January 1, 2004, 3.0% per year of Credited Service times Average Monthly Salary.

### **Benefits**

#### **Normal Retirement**

##### **Eligibility**

##### **Supplemental Retirement System**

Earlier of 25 years of Credited Service or Age 55.

##### **Benefit**

##### **Supplemental Retirement System**

Effective January 1, 2004, 3.0% per year of Credited Service times Average Monthly Salary.

#### **Early Retirement**

##### **Eligibility**

##### **Supplemental Retirement System**

Age 50 with 10 years of Credited Service.

##### **Benefit**

##### **Supplemental Retirement System**

Normal Retirement benefit reduced 3.0% for each year prior to age 55.

## Data, Assumptions, and Plan Provisions

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### Death before Retirement In Line of Duty

#### Supplemental Retirement System

Monthly benefit payable to surviving spouse until death or remarriage based on 60% of Earnings Base, or, if greater, the Member's accrued pension benefit at the time of death. The beneficiary may select an actuarially adjusted optional form of payment and received the survivor portion of that form. Each unmarried child under age 18 will receive a benefit equal to 7.5% of Earnings Base. The total of all benefits cannot exceed 100%.

### Death before Retirement Not In Line of Duty

#### Supplemental Retirement System

Monthly benefit payable to surviving spouse until death or remarriage based on 25% of Earnings Base, or, if greater, the Member's accrued pension benefit at the time of death. The beneficiary may select an actuarially adjusted optional form of payment and received the survivor portion of that form. Each unmarried child under age 18 will receive a benefit equal to 7.5% of Earnings Base. The total of all benefits cannot exceed 60%.

### Termination Benefit

#### Eligibility

#### Supplemental Retirement System

Prior to October 1, 2000, 20% vested after 7 years of Credited Service, plus 8% per year thereafter to 100% after 17 years. Effective October 1, 2000, 20% vested after 7 years of Credited Service, plus 8% per year through year 9, then 100% for 10 or more years.

#### Benefit

#### Supplemental Retirement System

Vested accrued retirement pension payable on a life annuity basis beginning at age 50.

### Disability Benefit In Line of Duty

#### Supplemental Retirement System

The greater of the Member's accrued pension benefit at the date of disability or 60% of Earnings Base, reduced by amounts payable under Worker's Compensation. Benefit is payable as a life annuity, or as an actuarially adjusted optional form of payment.

### Disability Benefit Not In Line of Duty

#### Supplemental Retirement System

The greater of the Member's accrued pension benefit at the date of disability or 25% of Earnings Base, plus 7.5% of Earnings Base for each unmarried child under the age of 18. Benefit is payable as a life annuity, or as an actuarially adjusted optional form of payment.

## Data, Assumptions, and Plan Provisions

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### Earnings Base

#### Supplemental Retirement System

Average Monthly Salary (Earnings Base) during the last 3 years of creditable service. Earnable Compensation includes base pay plus educational incentive, shift differential pay, acting supervisor pay and up to 120 hours of overtime per fiscal year. Earnable Compensation excludes payments for extra duty or special detail performed during off-duty hours.

### Credited Service

Length of service with the City measured from date of enrollment in the Retirement System, including vacations and other paid leaves of absence. Unpaid leaves of absence are excluded. For Members actively employed on or after March 12, 1999, credit will be granted for up to 5 years of military service without requiring employee contributions from the Member.

Credited service accruals will cease upon termination date or date of entry into the Deferred Retirement Option Plan (DROP).

### Employee Contributions

#### Supplemental Retirement System

5.0% of pay beginning 10/1/1983; 6.0% of pay beginning 10/1/1984; 7.0% of pay beginning 10/1/1985. Contributions can be waived after attaining accrued benefit of 60% - if waiver is elected. Earnings Base is frozen.

### DROP

#### Eligibility

A Member who is eligible for Normal Retirement is eligible to elect to participate in DROP. The Member may participate in DROP for the lesser of seven years or until the Member would have earned 32 years of Credited Service.

#### Benefit

Upon entering the DROP, the monthly retirement benefit under the plan is calculated and each monthly benefit payment is deposited in an account with a Third Party Administrator (TPA). The Member is responsible for directing the payments into investment options made available by the TPA pursuant to an agreement with the Board. Any losses, changes or expenses in the DROP account incurred as a result of these investment options will not be made up by the Plan, the Pension Board or the City.

At the end of the DROP period or termination of employment, if earlier, the DROP account will be paid to the Member through an option available from the outside vendor. The Member will also begin receiving the monthly retirement benefit from the Plan. When participation in the DROP is over, the Member must separate employment as a police officer.

Members in the DROP are no longer eligible for disability or pre-retirement death benefits, nor do they accrue any additional credited service. The Normal Retirement Benefit is fixed as of the entry date into the DROP. Member contributions to the Plan cease upon entering the DROP. Beneficiaries of Members who die while participating in the DROP will be able to choose from the same payout options available to the Member through the outside provider. If the Member dies while receiving payments from the DROP account, payments will be made in accordance with the payout option selected through the outside provider.

## Data, Assumptions, and Plan Provisions

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### COLA

#### Prior Retirement System

In accordance with changes in compensation of rank held.

#### Supplemental Retirement System

Annual cost of living increases, beginning at age 60, which shall equal the annual percentage increase in the CPI for the preceding year or two percent, whichever is less.

### Payment Forms

The benefit begins at retirement and continues for the Member's life.

Optional Forms – The following optional forms of retirement income are available based on Actuarial Equivalence: Option 1 – Life annuity with Ten Years Certain; Option 2 – 100% Joint and Survivor Annuity; Option 3 – 66.67% Joint and Survivor Annuity; Option 4 – 50% Joint and Survivor Annuity.

### Plan Provisions Not Included

We are not aware of any plan provisions not included in the valuation.

### Adjustment Made for Subsequent Events

We are not aware of any event following the measurement date and prior to the date of this report that would materially impact results.

### Changes Since Prior Report

None

## Data, Assumptions, and Plan Provisions

Except where otherwise indicated, the following assumptions were selected by the plan sponsor with the concurrence of the actuary. Prescribed assumptions are based on the requirements of the relevant law, the Internal Revenue Code, and applicable regulation. The actuary was not able to evaluate the prescribed assumptions for reasonableness for the purpose of the measurement.

**Valuation Date:** October 1, 2019

**Participant and Asset Information as of:** October 1, 2019

**Retirement Rates (FE):** 66% of Police Offices retire at 25 years of service. 75% of Police Officers are assumed to retire when they attain age 55. For those who do not retire under the above assumptions, we assume that 25% retire per year with 100% of Police Officers retiring upon completion of age 55 with at least 25 years of service.

The assumed retirement rates are based on a study of actual experience for the plan during 2011-2016. See the experience study report dated August 2017.

**Disability Rates (FE):** Representative values of the assumed annual rates of disability among members in active service

<u>Age</u>	<u>Rates</u>	<u>Age</u>	<u>Rates</u>
20	0.15%	40	0.90%
25	0.15%	45	1.00%
30	0.40%	50	1.00%
35	0.65%	55	1.00%

85% of disabilities are assumed to be service incurred and 15% of disabilities are assumed to be non-service incurred

The assumed disability rates are based on a study of actual experience for the plan during 2011-2016. See the experience study report dated August 2017.

### Mortality:

**Healthy Active Mortality** Female: PUB-2010 Headcount Weighted Safety Employee Female, set forward 1 year with MP-2018 Mortality Improvement Scale  
Male: PUB-2010 Headcount Weighted Safety Below Median Employee Male, set forward 1 year with MP-2018 Mortality Improvement Scale

**Healthy Inactive Mortality** Female: PUB-2010 Headcount Weighted Safety Healthy Retiree Female, set forward 1 year with MP-2018 Mortality Improvement Scale  
Male: PUB-2010 Headcount Weighted Safety Below Median Healthy Retiree Male, set forward 1 year with MP-2018 Mortality Improvement Scale

**Disabled** Female: 80% PUB-2010 Headcount Weighted General Disabled Retiree Female / 20% PUB-2010 Headcount Weighted Safety Disabled Retiree Female  
Male: 80% PUB-2010 Headcount Weighted General Disabled Retiree Male / 20% PUB-2010 Headcount Weighted Safety Disabled Retiree Male

50% of deaths among active Members are assumed to be service incurred, and 50% are assumed to be non-service incurred.

The mortality table is prescribed by state law, following the assumptions used by the Florida Retirement System. The Board adopted the new mortality table for the October 1, 2019 valuation.

## Data, Assumptions, and Plan Provisions

### Withdrawal (FE):

Representative values of the assumed rates of withdrawal from active status

<u>Age</u>	<u>Rates</u>	<u>Age</u>	<u>Rates</u>
20-24	15.00%	40-44	2.50%
25-29	8.50%	45-49	2.50%
30-34	7.00%	50-54	2.50%
35-39	4.00%		

The assumed withdrawal rates are based on a study of actual experience for the plan during 2011-2016. See the experience study report dated August 2017.

### Salary Projection Scale (FE):

Not applicable for Prior Plan since no active Members remain.

<u>Age</u>	<u>Rates</u>	<u>Age</u>	<u>Rates</u>
20	8.00%	40	5.50%
25	8.00%	45	5.00%
30	7.50%	50	4.50%
35	6.50%	55	4.50%

The assumed annual pay increases are based on a study of actual experience for the plan during 2011-2016. See the experience study report dated August 2017.

### Aggregate Compensation (FE):

Aggregate compensation is assumed to increase 2.60% per year, as limited by the ten-year average historical growth in payroll.

### Interest Rate (CO):

7.85% per annum, net of expenses

Support for the discount rate assumption has been provided in the experience study report dated August 2017.

### Expense and/or Contingency Loading (FE):

The contribution is increased by anticipated administrative expenses, equal to the average of the prior four years of administrative expenses.

### Marital Status and Ages (FE):

85% of active Members are assumed to be married with males assumed to be 3 years older than female spouses.

### Funding method

Liabilities and contributions in the report are based on application of an Entry Age Normal cost method.

### Asset Valuation Method:

The Actuarial Value of assets is determined using a method that spreads over a period of four years the difference between the actual investment income and the expected income (based on the valuation interest rate applied to the prior year's market value of assets). Resulting value constrained to be within corridor from 80% to 120% of market value. Finally, the Actuarial Value of Assets is adjusted to exclude the value of DROP accounts and any State Contribution reserve.

## Data, Assumptions, and Plan Provisions

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<b>Amortization Method:</b>	Effective October 1, 2019, a 25-year amortization period will apply to any future changes in the unfunded actuarial accrued liability.
<b>Other Procedures:</b>	Benefits projected to assumed retirement age for active participants have been limited so as not to exceed maximum benefits imposed by Code Section 415(b) and/or maximum compensation limits of Code Section 401(a)(17).
<b>Cost-of-Living</b>	4.0% per year thereafter assumed for the Prior Plan and 2.0% for the Supplemental Plan.
<b>State Contributions</b>	It is assumed future State tax revenue paid to the plan will not increase from the current level.
<b>Changes Since Prior Report:</b>	<p>The discount rate was changed from 7.90% to 7.85% to better reflect recent experience and anticipated future returns. The change in interest assumptions results in an increase in accrued liability and normal cost.</p> <p>The mortality assumption was updated to match a recent change to the Florida Retirement System (FRS) mortality tables. The 2018 FRS mortality tables were based on the RP-2000 mortality tables, with future mortality improvements reflected using mortality improvement Scale BB. The 2019 FRS mortality tables were based on the Pub-2010 Mortality Tables for public sector retirement plans. The tables were developed from data collected for 2008-2013. The table is then adjusted with the Mortality Improvement Scale MP-2018. This change decreased the Plan accrued liability and the normal cost.</p> <p>The aggregate payroll growth rate (used to determine the amortization of unfunded liability bases) increased from 2.0% to 2.6%, as limited by the ten-year average historical growth in payroll.</p> <p>The amortization method has been lowered from a 30-year closed amortization to a 25-year closed amortization for future amortizations. This change results in an increase in the recommended contribution.</p>

FE indicates an assumption representing an estimate of future experience

MD indicates an assumption representing observations of estimates inherent in market data

CO indicates an assumption representing a combination of an estimate of future experience and observations of market data

## Other Measurements

The actuarial report also shows the necessary items required for plan reporting and any state requirements.

- ✓ Statement of changes in plan net assets
- ✓ Distribution of assets
- ✓ Schedule of amortizations
- ✓ Florida State requirements
  - Comparative Summary of Principal Valuation Results
  - Comparison of Payroll Growth, salary increases and investment results
  - Requirements under Florida Statute 112.664 and F.A.C. 60T – 1.0035
  - Reserve account for benefit improvements under F.L. 99-1 and SB 172



## Other Measurements

### Statement of Changes in Plan Net Assets

	<u>September 30, 2018</u>	<u>September 30, 2019</u>
1. Additions		
(a) Contributions:		
(i) Employer	\$7,315,889	\$8,843,831
(ii) Member	2,569,417	2,810,696
(iii) Nonemployer contributing entity	2,141,303	2,185,507
(iv) Excess premium tax	<u>0</u>	<u>0</u>
(v) Total	\$12,026,609	\$13,840,034
(b) Investment income		
(i) Net increase in fair value of investments	\$31,053,993	\$2,340,726
(ii) Interest and dividends	9,962,455	12,082,017
(iii) Investment expense, other than from securities lending	(1,621,981)	(1,659,672)
(iv) Securities lending income	0	0
(v) Securities lending expense	<u>0</u>	<u>0</u>
(vi) Total	\$39,394,467	\$12,763,071
(c) Other	<u>0</u>	<u>0</u>
(d) Total additions [(a)+(b)+(c)]	\$51,421,076	\$26,603,105
2. Deductions		
(a) Benefit payments, including refunds of member contributions	\$28,723,936	\$29,185,726
(b) Administrative expense	25,113	26,420
(c) Other	<u>0</u>	<u>0</u>
(d) Total deductions	<u>\$28,749,049</u>	<u>\$29,212,146</u>
3. Net increase [(1d)-(2d)]	\$22,672,027	(\$2,609,041)
4. Net assets held in trust for pension benefits, beginning of year	<u>407,447,329</u>	<u>430,119,356</u>
5. Net assets held in trust for pension benefits, end of year [(3)+(4)]	<u>\$430,119,356</u>	<u>\$427,510,315</u>

## Other Measurements

### Distribution of Assets

	<u>September 30, 2018</u>	<u>September 30, 2019</u>
Cash and deposits	\$10,554,016	\$9,797,374
Securities lending cash collateral	0	0
Total cash	\$10,554,016	\$9,797,374
Receivables		
Contributions	\$0	\$0
Other	674,139	631,937
Total receivables	\$674,139	\$631,937
Investments		
Common Stock and Equities	\$359,811,045	\$357,947,767
Corporate Bonds	28,599,914	31,980,146
Government Securities	31,799,080	27,269,318
Total investments	\$420,210,039	\$417,197,231
Payables		
Investment management fees	\$0	\$0
Due to broker for investments purchased	1,318,810	87,809
Other	28	28,418
Total liabilities	\$1,318,838	\$116,227
Market value of assets	\$430,119,356	\$427,510,315

Schedule of Amortizations

October 1, 2019

<u>Date Established</u>	<u>Description</u>	<u>Original Amount</u>	<u>Total Remaining Period Years</u>	<u>32,402,442 Remaining Balance</u>	<u>943,373 Annual Payment (Prior Assumptions)</u>	<u>0 Annual Payment (Current Assumptions)</u>
10/1/1990	Experience Loss (Gain)	1,330,892	1	200,297	200,297	200,297
10/1/1990	Method Change	2,480,016	1	373,237	373,237	373,237
10/1/1991	Experience Loss (Gain)	(2,090,876)	2	(585,611)	(300,178)	(300,110)
10/1/1991	Assumption Change	3,674,357	2	1,029,112	527,512	527,392
10/1/1992	Experience Loss (Gain)	(10,537,047)	3	(4,119,525)	(1,442,889)	(1,442,242)
10/1/1993	Experience Loss (Gain)	(4,740,169)	4	(2,299,447)	(618,994)	(618,581)
10/1/1994	Experience Loss (Gain)	(7,251,188)	5	(4,091,650)	(902,767)	(901,972)
10/1/1994	Plan Amendment	2,688,714	5	1,517,170	334,743	334,448
10/1/1994	Assumption Change	1,730,821	5	976,655	215,486	215,296
10/1/1995	Experience Loss (Gain)	(7,192,780)	6	(4,617,137)	(869,563)	(868,615)
10/1/1996	Experience Loss (Gain)	(8,977,982)	7	(6,355,258)	(1,050,646)	(1,049,283)
10/1/1997	Experience Loss (Gain)	(23,174,320)	8	(17,599,826)	(2,606,691)	(2,602,783)
10/1/1997	Assumption Change	(2,019,887)	8	(1,534,011)	(227,201)	(226,860)
10/1/1998	Experience Loss (Gain)	(18,658,474)	9	(15,055,875)	(2,029,055)	(2,025,609)
10/1/1999	Experience Loss (Gain)	(4,026,343)	10	(3,405,431)	(422,737)	(421,937)
10/1/1999	Plan Amendment	12,527,560	10	10,595,648	1,315,303	1,312,813
10/1/2000	Experience Loss (Gain)	(3,651,244)	11	(3,262,268)	(376,706)	(375,921)
10/1/2000	Plan Amendment	791,733	11	707,389	81,685	81,515
10/1/2000	Plan Amendment	347,789	11	310,737	35,882	35,807
10/1/2001	Experience Loss (Gain)	23,470,129	12	21,920,680	2,373,754	2,368,363
10/1/2002	Experience Loss (Gain)	17,134,498	13	16,497,800	1,686,718	1,682,578
10/1/2002	Assumption Change	11,669,741	13	11,236,105	1,148,768	1,145,948
10/1/2003	Experience Loss (Gain)	6,337,947	14	6,257,613	607,502	605,901
10/1/2003	Plan Amendment	14,958,849	14	14,769,251	1,433,829	1,430,051
10/1/2003	Plan Amendment	3,411,205	14	3,367,966	326,969	326,108
10/1/2004	Experience Loss (Gain)	3,149,606	15	3,152,598	292,053	291,232
10/1/2005	Experience Loss (Gain)	2,660,756	16	2,681,435	238,046	237,335
10/1/2006	Experience Loss (Gain)	(12,731,104)	17	(12,892,596)	(1,100,889)	(1,097,419)
10/1/2007	Assumption Change	(3,061,309)	18	(3,120,335)	(257,117)	(256,265)
10/1/2007	Method Change	(2,892,364)	18	(2,948,136)	(242,928)	(242,122)
10/1/2007	Experience Loss (Gain)	(12,413,134)	18	(12,652,486)	(1,042,572)	(1,039,114)

## Other Measurements

### Schedule of Amortizations (continued)

<u>Date Established</u>	<u>Description</u>	<u>Original Amount</u>	<u>Remaining Period Years</u>	<u>Remaining Balance</u>	<u>Annual Payment (Prior Assumptions)</u>	<u>Annual Payment (Current Assumptions)</u>
10/1/2007	Plan Amendment	1,588,606	18	1,619,236	133,426	132,983
10/1/2008	Experience Loss (Gain)	(1,818,490)	19	(1,860,224)	(148,346)	(147,830)
10/1/2008	Assumption Change	(15,942,016)	19	(16,307,870)	(1,300,496)	(1,295,972)
10/1/2008	Plan Amendment	139,930	19	143,141	11,415	11,375
10/1/2009	Experience Loss (Gain)	15,880,282	20	16,261,062	1,258,228	1,253,652
10/1/2009	Assumption Change	(3,853,009)	20	(3,945,398)	(305,282)	(304,172)
10/1/2010	Plan Amendment	1,819,287	21	1,860,470	140,001	139,470
10/1/2010	Experience Loss (Gain)	17,369,338	21	17,762,544	1,336,638	1,331,571
10/1/2010	Assumption Change	(2,319,096)	21	(2,371,596)	(178,463)	(177,787)
10/1/2011	Experience Loss (Gain)	27,951,563	22	28,487,518	2,089,106	2,080,871
10/1/2011	Assumption Change	(6,003,983)	22	(6,119,107)	(448,739)	(446,970)
10/1/2012	Experience Loss (Gain)	8,457,623	23	8,574,448	613,933	611,422
10/1/2012	Assumption Change	(7,416,575)	23	(7,519,023)	(538,364)	(536,163)
10/1/2013	Assumption Change	(2,925,781)	24	(2,949,743)	(206,559)	(205,684)
10/1/2013	Experience Loss (Gain)	(2,125,527)	24	(2,142,934)	(150,061)	(149,426)
10/1/2014	Assumption Change	(2,755,076)	25	(2,769,011)	(189,932)	(189,101)
10/1/2014	Experience Loss (Gain)	(8,124,850)	25	(8,165,940)	(560,119)	(557,668)
10/1/2014	Plan Amendment	127,600	25	128,246	8,797	8,758
10/1/2015	Experience Loss (Gain)	(3,853,989)	26	(3,878,050)	(260,923)	(259,745)
10/1/2015	Method Change	(2,037,752)	26	(2,050,473)	(137,960)	(137,337)
10/1/2015	Assumption Change	725,823	26	730,354	49,140	48,918
10/1/2016	Experience Loss (Gain)	6,418,203	27	6,509,463	430,156	428,158
10/1/2016	Assumption Change	12,352,268	27	12,527,904	827,865	824,019
10/1/2016	Method Change	(3,063,459)	27	(3,107,018)	(205,317)	(204,363)
10/1/2017	Experience Loss (Gain)	7,043,363	28	7,130,623	463,344	461,131
10/1/2017	Assumption Change	2,510,700	28	2,541,806	165,165	164,376
10/1/2018	Experience Loss (Gain)	(1,529,477)	29	(1,539,572)	(98,479)	(97,996)
10/1/2018	Assumption Change	2,966,432	29	2,986,011	191,000	190,063
10/1/2019	Experience Loss (Gain)	3,693,551	25	3,693,551	253,348	252,240
10/1/2019	Assumption Change	(14,882,077)	25	(14,882,077)	0	(1,016,327)

**Other Measurements**

**Information to Comply with Florida 60T-1.003(4)(i)**

**Comparative Summary Of Principal Valuation Results**

	10/1/2019 7.85% (current methods & assumptions)	10/1/2019 7.90% (prior methods & assumptions)	10/1/2018 7.90%
<b>Participant Data</b>			
Active members	502	502	488
Total annual payroll	\$43,001,170	\$43,001,170	\$38,453,500
Members in DROP	52	52	61
Total annualized benefit	\$3,064,470	\$3,064,470	\$3,518,424
Retired members and beneficiaries	569	569	562
Total annualized benefit	\$24,082,249	\$24,082,249	\$23,347,452
Disabled members receiving benefits	66	66	65
Total annualized benefit	\$2,349,906	\$2,349,906	\$2,231,506
Terminated vested members	49	49	43
Total annualized benefit	\$599,787	\$599,787	\$610,965
<b>Assets</b>			
Actuarial value of assets	\$433,886,739	\$433,886,739	\$415,516,145
Market value of assets	\$427,510,315	\$427,510,315	\$430,119,356

## Other Measurements

### Information to Comply with Florida 60T-1.003(4)(i)

#### Comparative Summary Of Principal Valuation Results (continued)

	10/1/2019 7.85% (current methods & assumptions)	10/1/2019 7.90% (prior methods & assumptions)	10/1/2018 7.90%
Liabilities, present value of all future expected benefit payments			
Active members			
Retirement benefits	\$155,505,478	\$156,533,893	\$136,568,423
Vesting benefits	\$22,510,819	\$22,753,994	\$20,426,801
Disability benefits	\$20,123,750	\$19,526,164	\$17,612,106
Death benefits	\$1,876,726	\$2,515,640	\$2,253,488
Return of contribution	0	0	0
Total	\$200,016,773	\$201,329,691	\$176,860,818
Terminated vested members	\$4,290,087	\$4,356,624	\$4,944,919
Retired members and beneficiaries	\$313,400,254	\$326,323,782	\$323,793,875
Disabled members	\$24,641,614	\$24,905,451	\$23,880,150
Total	\$542,348,728	\$556,915,548	\$529,479,762
Liabilities due and unpaid	\$0	\$0	\$0
Actuarial accrued liability	\$466,289,181	\$481,171,258	\$460,565,642
Unfunded actuarial accrued liability	\$32,402,442	\$47,284,519	\$45,049,497

## Other Measurements

### Information to Comply with Florida 60T-1.003(4)(i)

#### Comparative Summary Of Principal Valuation Results (continued)

	10/1/2019 7.85% (current methods & assumptions)	10/1/2019 7.90% (prior methods & assumptions)	10/1/2018 7.90%
<b>Actuarial present value of accrued benefits</b>			
Statement of actuarial present value of all accrued benefits			
Vested accrued benefits			
Members currently receiving benefits	\$338,041,868	\$351,229,233	\$347,674,025
Other members	76,121,182	76,945,558	69,100,492
Total value of all vested accrued benefits	\$414,163,050	\$428,174,791	\$416,774,517
Non-vested accrued benefits	10,855,070	10,838,094	10,187,618
Total actuarial present value of all accrued benefits	\$425,018,120	\$439,012,885	\$426,962,135
Statement of changes in total actuarial present value of all accrued benefits (ASC 960)			
Actuarial present value of accrued benefits, beginning of year	\$426,962,135	\$426,962,135	\$414,650,621
Increase (decrease) during year			
Benefits accumulated	\$8,637,392	\$8,637,392	\$7,627,179
Plan amendment	0	0	0
Changes in actuarial assumptions	(13,994,765)	0	1,563,490
Interest	32,599,084	32,599,084	31,844,781
Benefits paid	(29,185,726)	(29,185,726)	(28,723,936)
Other changes	0	0	0
Net increase (decrease)	(\$1,944,015)	\$12,050,750	\$12,311,514
Actuarial present value of accrued benefits, end of year	\$425,018,120	\$439,012,885	\$426,962,135

## Other Measurements

### Information to Comply with Florida 60T-1.003(4)(i)

#### Comparative Summary Of Principal Valuation Results (continued)

	10/1/2019 7.85% (current methods & assumptions)	10/1/2019 7.90% (prior methods & assumptions)	10/1/2018 7.90%
<b>Pension cost</b>			
Normal Cost	\$8,528,586	\$8,534,306	\$7,704,318
Member contributions	\$2,994,255	\$2,994,255	\$2,677,397
Expected city and state contribution	\$6,186,334	\$7,230,647	\$10,760,422
As % of payroll	14.39%	16.82%	27.98%
Member Contributions as % of payroll	7.00%	7.00%	7.00%
<b>Past contributions</b>	9/30/2019		9/30/2018
Required plan sponsor contribution	\$10,520,840		\$8,992,898
Required member contribution	\$2,583,577		\$2,431,980
Actual contributions made by:			
Plan's sponsor	\$8,843,831		\$7,315,889
Members	\$2,810,696		\$2,569,417
Other	\$2,185,507		\$2,141,303
<b>Net actuarial gain (loss) (if applicable)</b>	(\$3,693,551)		\$1,529,477
<b>Other disclosures (where applicable)</b>			
Present value of active member			
Future salaries at attained age	\$384,831,776	\$383,214,265	\$346,387,087
Future contributions at attained age	\$26,934,559	\$26,821,414	\$24,245,483



**Other Measurements**

**Information to Comply with Florida 60T-1.003(3)(f)**

**Historical Salary Increases and Asset Performance**

Year Ending	Aggregate Payroll Growth	Expected Salary Growth	Asset Return (Market)	Asset Return (Actuarial)	Asset Return (Expected)
9/30/2019	11.8%	6.10%	3.01%	8.24%	7.90%
9/30/2018	3.7%	6.10%	9.84%	7.45%	7.95%
9/30/2017	5.6%	6.00%	12.12%	7.23%	8.00%
9/30/2016	13.0%	6.00%	8.23%	7.28%	8.00%
9/30/2015	0.5%	4.00%	(0.40%)	9.90%	8.00%
9/30/2014	(0.9%)	4.00%	10.50%	10.20%	8.00%
9/30/2013	5.1%	1.90%	13.50%	9.40%	8.00%
9/29/2012	(3.4%)	2.00%	17.20%	5.90%	8.00%
9/30/2011	(3.1%)	2.00%	(1.20%)	(1.00%)	8.00%
9/30/2010	(6.3%)	6.00%	8.40%	1.60%	8.00%
<b>Averages</b>					
3-year			8.25%	7.64%	
5-year			6.46%	8.02%	
10-year	2.6%		7.97%	6.56%	
20-year					

**Amortization of Unfunded Actuarial Accrued Liability**

	UAAL	Amortization
10/1/2019	\$32,402,442	\$0
10/1/2020	\$35,040,994	\$0
10/1/2021	\$38,523,776	\$0
10/1/2022	\$42,557,029	\$597,677
10/1/2047	\$188,901	\$188,901

## Other Measurements

### Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035<sup>1</sup>

	GASB 67/68 Valuation	- 200 bp <sup>2</sup>	Funding Rate <sup>2</sup>	+ 200 bp <sup>2</sup>
	7.90%	5.85%	7.85%	9.85%
Total pension liability				
Service Cost	\$7,605,474	\$7,704,318	\$7,704,318	\$7,704,318
Interest	36,132,510	35,862,402	35,862,402	35,862,402
Benefit changes	0	0	0	0
Difference between expected and actual experience	(4,194,037)	6,224,622	6,224,622	6,224,622
Changes in assumptions	3,082,128	111,214,945	(14,882,077)	(101,621,041)
Benefit payments	(28,988,980)	(28,988,980)	(28,988,980)	(28,988,980)
Contribution refunds	(196,746)	(196,746)	(196,746)	(196,746)
Net change in pension liability	\$13,440,349	\$131,820,561	\$5,723,539	(\$81,015,425)
Total pension liability, beginning of year	\$461,484,375	\$460,565,642	\$460,565,642	\$460,565,642
Total pension liability, end of year	\$474,924,724	\$592,386,203	\$466,289,181	\$379,550,217
Plan fiduciary net position				
Contributions - Employer	\$8,843,831	\$8,843,831	\$8,843,831	\$8,843,831
Contributions - State	2,185,507	2,185,507	2,185,507	2,185,507
Contributions - Member	2,810,696	2,810,696	2,810,696	2,810,696
Net investment income	12,763,071	12,763,071	12,763,071	12,763,071
Benefit payments	(28,988,980)	(28,988,980)	(28,988,980)	(28,988,980)
Contribution refunds	(196,746)	(196,746)	(196,746)	(196,746)
Administrative expense	(26,420)	(26,420)	(26,420)	(26,420)
Other	0	0	0	0
Net change in plan fiduciary net position	(\$2,609,041)	(\$2,609,041)	(\$2,609,041)	(\$2,609,041)
Plan fiduciary net position, beginning of year	\$430,119,356	\$430,119,356	\$430,119,356	\$430,119,356
Plan fiduciary net position, end of year	\$427,510,315	\$427,510,315	\$427,510,315	\$427,510,315
Net pension liability/(asset)	\$47,414,409	\$164,875,888	\$38,778,866	(\$47,960,098)
Funded ratio	90.02%	72.17%	91.68%	112.64%
Years that Assets support expected benefit payments	23	18	23	100

**Other Measurements**

**Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035<sup>1</sup>**

	GASB 67/68 Valuation	- 200 bp <sup>2</sup>	Funding Rate <sup>2</sup>	+ 200 bp <sup>2</sup>
Estimated city contribution	7.90%	5.85%	7.85%	9.85%
Annual dollar value	\$5,553,638	\$16,788,722	\$4,509,325	\$1,466,075
Percentage of payroll	12.92%	39.04%	10.49%	3.41%

<sup>1</sup>Does not include DROP assets and liabilities

<sup>2</sup>Based on valuation assumption with the following changes

Mortality	Update to FRS Mortality Tables – version of Pub2010 with MP-2018
Interest	7.85%

## Other Measurements

### Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035<sup>1</sup>

#### Sustainment of Expected Benefit Payments

Mortality Valuation  
Interest 7.90%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$427,510,315	\$32,597,961	\$30,332,291
2	429,775,985	32,737,172	31,358,816
3	431,154,341	32,826,090	31,874,231
4	432,106,200	32,872,393	32,619,894
5	432,358,699	32,860,787	33,434,204
6	431,785,282	32,776,959	34,428,490
7	430,133,751	32,608,613	35,405,939
8	427,336,425	32,336,924	36,714,366
9	422,958,983	31,937,938	38,086,466
10	416,810,455	31,401,523	39,394,382
11	408,817,596	30,702,197	41,146,432
12	398,373,361	29,828,999	42,387,829
13	385,814,531	28,768,412	44,154,039
14	370,428,904	27,482,367	45,975,513
15	351,935,758	25,952,210	47,761,299
16	330,126,669	24,180,132	49,029,989
17	305,276,812	22,156,485	50,591,512
18	276,841,785	19,866,800	51,709,427
19	244,999,158	17,305,777	52,882,483
20	209,422,452	14,455,707	53,902,121
21	169,976,038	11,295,122	55,045,831
22	126,225,329	7,789,158	56,327,358
23	77,687,129	3,892,789	57,923,547
24	23,656,371		59,166,796

**Other Measurements**

**Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035<sup>1</sup>**

**Sustainment of Expected Benefit Payments**

Mortality Update to FRS Mortality Tables  
Interest 5.85%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$427,510,315	\$24,139,667	\$30,161,547
2	421,488,435	23,760,759	31,085,025
3	414,164,169	23,319,897	31,514,799
4	405,969,267	22,818,573	32,275,075
5	396,512,765	22,242,439	33,070,260
6	385,684,944	21,579,966	34,077,593
7	373,187,317	20,820,332	35,066,773
8	358,940,876	19,950,123	36,342,791
9	342,548,208	18,952,116	37,696,584
10	323,803,740	17,818,089	38,996,265
11	302,625,564	16,528,882	40,740,151
12	278,414,295	15,074,618	42,054,731
13	251,434,182	13,445,400	43,819,357
14	221,060,225	11,613,641	45,722,702
15	186,951,164	9,562,467	47,657,687
16	148,855,944	7,295,139	49,001,866
17	107,149,217	4,807,753	50,650,654
18	61,306,316	2,093,833	51,764,280
19	11,635,869		52,987,094

## Other Measurements

### Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035<sup>1</sup>

#### Sustainment of Expected Benefit Payments

Mortality Update to FRS Mortality Tables  
Interest 7.85%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$427,510,315	\$32,398,082	\$30,161,547
2	429,746,850	32,538,089	31,085,025
3	431,199,914	32,635,604	31,514,799
4	432,320,719	32,694,310	32,275,075
5	432,739,954	32,696,599	33,070,260
6	432,366,293	32,628,475	34,077,593
7	430,917,175	32,476,628	35,066,773
8	428,327,030	32,224,164	36,342,791
9	424,208,403	31,848,719	37,696,584
10	418,360,538	31,339,613	38,996,265
11	410,703,886	30,671,411	40,740,151
12	400,635,146	29,830,392	42,054,731
13	388,410,807	28,802,829	43,819,357
14	373,394,279	27,550,736	45,722,702
15	355,222,313	26,049,723	47,657,687
16	333,614,349	24,301,736	49,001,866
17	308,914,219	22,299,283	50,650,654
18	280,562,848	20,030,816	51,764,280
19	248,829,384	17,492,651	52,987,094
20	213,334,941	14,666,753	54,015,014
21	173,986,680	11,533,382	55,171,464
22	130,348,598	8,056,955	56,491,620
23	81,913,933	4,185,839	58,283,288
24	27,816,484		59,594,267

**Other Measurements**

**Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035<sup>1</sup>**

**Sustainment of Expected Benefit Payments**

Mortality Update to FRS Mortality Tables  
 Interest 9.85%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>	<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$427,510,315	\$40,659,191	\$30,161,547	30	\$589,351,344	\$55,134,488	\$60,644,758
2	438,007,959	41,648,796	31,085,025	31	583,841,074	54,634,351	59,758,486
3	448,571,730	42,668,658	31,514,799	32	578,716,939	54,170,882	58,900,598
4	459,725,589	43,730,749	32,275,075	33	573,987,223	53,752,613	57,910,690
5	471,181,263	44,820,890	33,070,260	34	569,829,146	53,396,005	56,809,451
6	482,931,893	45,929,880	34,077,593	35	566,415,700	53,115,087	55,659,484
7	494,784,180	47,049,758	35,066,773	36	563,871,303	52,922,709	54,448,393
8	506,767,165	48,168,713	36,342,791	37	562,345,619	52,833,213	53,184,535
9	518,593,087	49,268,458	37,696,584	38	561,994,297	52,862,126	51,863,810
10	530,164,961	50,345,782	38,996,265	39	562,992,613	53,026,790	50,484,613
11	541,514,478	51,379,839	40,740,151	40	565,534,790	53,346,174	49,050,335
12	552,154,166	52,364,626	42,054,731	41	569,830,629	53,840,754	47,564,911
13	562,464,061	53,295,283	43,819,357	42	576,106,472	54,532,619	46,032,582
14	571,939,987	54,137,124	45,722,702	43	584,606,509	55,445,617	44,457,645
15	580,354,409	54,872,884	47,657,687	44	595,594,481	56,605,507	42,844,653
16	587,569,606	55,518,935	49,001,866	45	609,355,335	58,040,151	41,197,854
17	594,086,675	56,081,570	50,650,654	46	626,197,632	59,779,740	39,521,482
18	599,517,591	56,562,957	51,764,280	47	646,455,890	61,857,012	37,819,933
19	604,316,268	56,976,817	52,987,094	48	670,492,969	64,307,515	36,097,241
20	608,305,991	57,320,369	54,015,014	49	698,703,243	67,169,890	34,357,650
21	611,611,346	57,590,328	55,171,464	50	731,515,483	70,486,157	32,605,612
22	614,030,210	57,765,096	56,491,620	51	769,396,028	74,302,019	30,845,957
23	615,303,686	57,804,365	58,283,288	52	812,852,090	78,667,193	29,083,714
24	614,824,763	57,694,142	59,594,267	53	862,435,569	83,635,792	27,324,099
25	612,924,638	57,451,706	60,743,561	54	918,747,262	89,266,736	25,572,470
26	609,632,783	57,095,285	61,412,539	55	982,441,528	95,624,203	23,834,549
27	605,315,529	56,660,884	61,602,829	56	1,054,231,182	102,778,086	22,117,027
28	600,373,584	56,171,932	61,647,954	57	1,134,892,241	110,804,461	20,427,391
29	594,897,562	55,654,073	61,200,291	58	1,225,269,311	119,786,150	18,773,368

**Other Measurements**

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**Use of State Premium Tax Contributions**

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**Reserve Account for 2018/2019**

	<u>Total</u>
1. Accumulated balance (10/1/2018)	\$1,101,241
2. State contributions	\$2,185,507
3. One-time use for benefit improvements	0
4. Amount to be used annually for funding of plan benefits	
(a) Base amount	\$(963,648)
(b) Cumulative benefit improvements	<u>(713,361)</u>
(c) Total allowable offset to City contributions	\$(1,677,009)
5. Increase in accumulated balance during fiscal year	\$508,498
6. Accumulated balance (10/1/2019)	\$1,609,739