



nyhart
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City of St. Petersburg Employees' Retirement System

October 1, 2019
Actuarial Valuation Report

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Actuarial Certification

At the request of the plan sponsor, this report summarizes the actuarial results of the City of St. Petersburg Employees' 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.

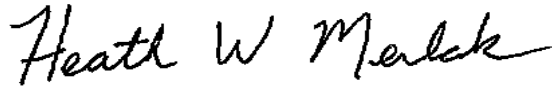
Actuarial Certification

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.

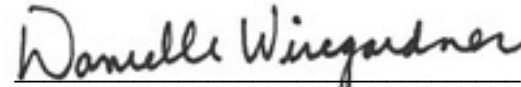
Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the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



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Enrolled Actuary No. 17-08260

March 10, 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.

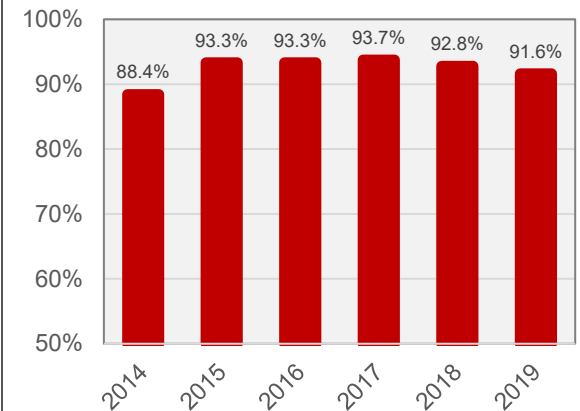
Executive Summary

Summary Results

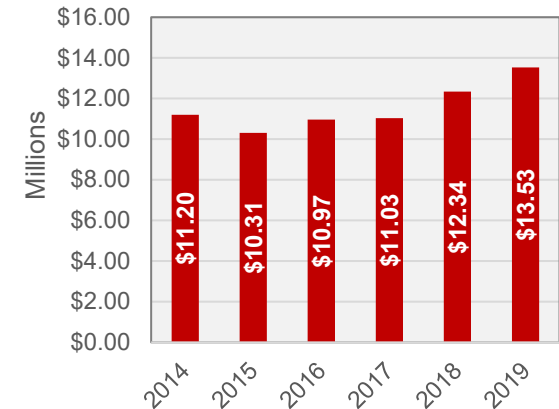
The actuarial valuation's primary purpose is to produce a scorecard measure displaying the funding progress of the plan toward the ultimate goal of paying benefits at retirement. The accrued liability is based on an entry age level percentage of pay.

	October 1, 2018	October 1, 2019
Funded Status Measures		
Accrued Liability	\$469,324,580	\$493,104,894
Actuarial Value of Assets	<u>\$435,500,142</u>	<u>\$451,751,513</u>
Unfunded Actuarial Accrued Liability (UAAL)	\$33,824,438	\$41,353,381
Funded Percentage (AVA)	92.8%	91.6%
Funded Percentage (MVA)	94.3%	88.0%
Cost Measures		
Recommended Contribution	\$12,340,469	\$13,531,360
Recommended Contribution (as a percentage of payroll)	14.6%	14.9%
Asset Performance		
Market Value of Assets (MVA)	\$442,787,977	\$433,830,476
Actuarial Value of Assets (AVA)	\$435,500,142	\$451,751,513
Actuarial Value/Market Value	98.4%	104.1%
Market Value Rate of Return	7.9%	1.0%
Actuarial Value Rate of Return	6.7%	6.8%
Participant Information		
Active Members	1,621	1,622
Terminated Vested Members	202	285
Retirees, Beneficiaries and Disabled Members	1,265	1,299
DROP Participants	<u>108</u>	<u>113</u>
Total	3,196	3,319
Expected Payroll	\$84,448,231	\$90,973,496

History of Funded Ratio



History of Recommended Contribution



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 7.65% to 7.60% 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 0.3% to 1.2%, as limited by the ten-year average historical growth in payroll.

Executive Summary

Five Year Valuation Summary

	10/01/2015*	10/01/2016	10/01/2017	10/01/2018	10/01/2019
Funding					
Accrued Liability	\$408,393,769	\$430,370,322	\$446,925,229	\$469,324,580	\$493,104,894
Actuarial Value of Assets	\$381,121,969	\$401,682,516	\$418,966,964	\$435,500,142	\$451,751,513
Unfunded Actuarial Accrued Liability	\$27,271,800	\$28,687,806	\$27,958,265	\$33,824,438	\$41,353,381
Funded Percentage	93.3%	93.3%	93.7%	92.8%	91.6%
Total Normal Cost (NC)	\$7,969,192	\$8,836,802	\$9,000,282	\$9,720,761	\$10,418,699
NC as a Percent of Covered Payroll	10.9%	11.4%	11.1%	11.5%	11.5%
Actual Employer Contribution	\$12,778,435	\$11,198,451	\$10,310,841	\$10,965,921	\$11,034,553
Recommended Contribution	\$12,778,435	\$11,198,451	\$10,310,841	\$10,965,921	\$11,034,553
Recommended Contribution (% of Pay)	16.1%	15.3%	13.3%	13.5%	13.1%
Interest Rate	7.75%	7.75%	7.70%	7.65%	7.60%
Expense Load Assumption	\$88,866	\$76,043	\$59,025	\$44,467	\$20,766
Rate of Return					
Actuarial Value of Assets	10.6%	7.6%	7.0%	6.7%	6.8%
Market Value of Assets	-0.1%	7.1%	11.6%	7.9%	1.0%
Demographic Information					
Active Participants	1,519	1,540	1,566	1,621	1,622
Terminated Vested Participants	208	212	208	202	285
Retired Participants	869	958	983	1,013	1,052
Beneficiaries	196	196	204	212	208
Disabled Participants	42	42	39	40	39
DROP Participants	143	92	90	108	113
Total Participants	2,977	3,040	3,090	3,196	3,319
Covered Payroll	\$73,230,762	\$77,392,386	\$81,346,925	\$84,448,231	\$90,973,496
Average Covered Pay	\$48,210	\$50,255	\$51,946	\$52,096	\$56,087

*From valuation reports prepared by Buck Consultants, LLC

Executive Summary

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 Employees' 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 Employees' Retirement System falls in its life-cycle.

Duration of Liabilities: 10.8

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: 48.9%

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: 21.0%

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: 5.6%

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

Assets and Liabilities

Present Value of Future Benefits

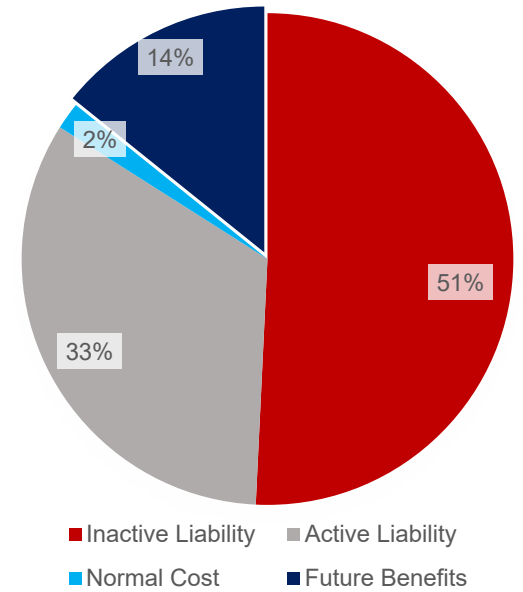
The Present Value of Future Benefits represents the discounted value of all future benefits expected to be payable to current members, considering future service and compensation not yet earned.

October 1, 2019

Present Value of Future Benefits

Active participants	
Retirement	\$254,246,216
Disability	5,984,052
Death	2,152,683
Termination	26,670,713
Total active	\$289,053,664
Inactive participants	
Retired participants	\$223,741,426
DROP participants	35,804,544
Beneficiaries	22,255,683
Disabled	5,798,648
Terminated vested participants	10,363,465
Total inactive	\$297,963,766
Total	\$587,017,430
 Present value of future payrolls	 \$831,642,894

Breakdown of Present Value of Future Benefits



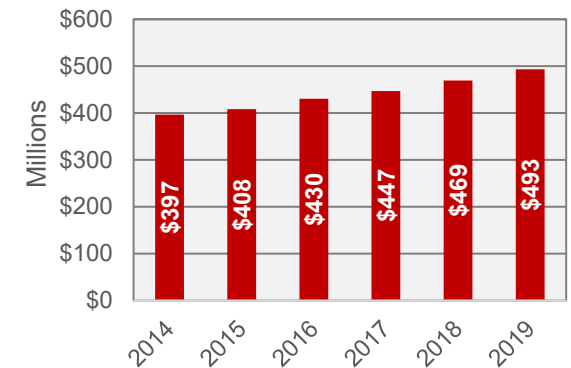
Assets and Liabilities

Actuarial Accrued Liability

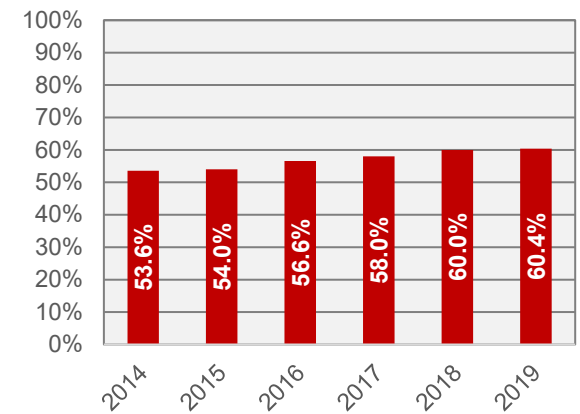
The Accrued Liability measures the present value of benefits earned as of the valuation date, using a specified set of actuarial assumptions. It is not a long-term snapshot of the liabilities.

	October 1, 2019
Active participants	
Retirement	\$182,307,614
Disability	800,153
Death	1,474,318
Termination	10,559,043
Total Active	\$195,141,128
Inactive participants	
Retired participants	\$223,741,426
DROP participants	35,804,544
Beneficiaries	22,255,683
Disabled	5,798,648
Terminated vested participants	10,363,465
Total Inactive	\$297,963,766
Total Actuarial Accrued Liability	\$493,104,894
Normal Cost	\$10,418,699
Interest Rate	7.60%

History of Liabilities



History of the Percentage of Inactive Liability



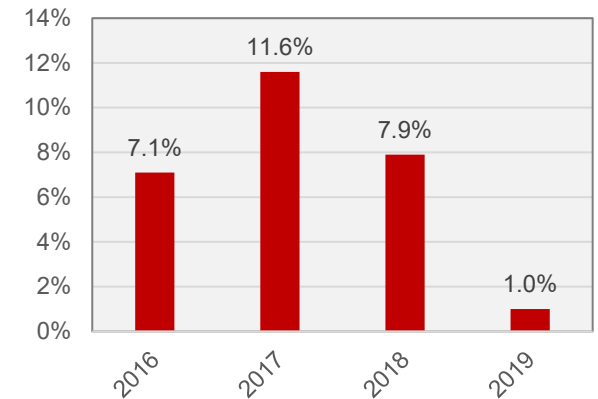
Assets and Liabilities

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
Market Value Reconciliation	
Market value of assets, beginning of prior year	\$442,787,977
Contributions	
Employer contributions	\$11,034,553
Employee contributions	1,701,022
Non-Employer contributions	0
Total	\$12,735,575
Investment income, net expenses	4,336,469
Benefit payments and refunds	(26,009,964)
Administrative expenses	(19,581)
Market value of assets, beginning of current year	\$433,830,476
Accumulated reserve	0
Adjusted market value of assets available for pension benefits	\$433,830,476
Historical Rates of Return	
Rate of return for 2019	1.0%
Rate of return for 2018	7.9%
Rate of return for 2017	11.6%
Rate of return for 2016	7.1%
Actuarial Value of Assets	
Value at beginning of current year	\$451,751,513

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)	\$442,787,977
(b) Contributions	12,735,575
(c) Benefit payments	(26,009,964)
(d) Expenses	(19,581)
(e) Expected return	<u>33,627,542</u>
(f) Expected market value of assets (10/1/2019)	\$463,121,549
2. Market value of assets (10/1/2019)	\$433,830,476
3. Actual return on market value	\$4,336,469
4. Amount subject to phase in [(3)-(1e)]	(\$29,291,073)
5. Phase in of asset gain/(loss)	
(a) Current year (75% x (\$29,291,073))	(\$21,968,305)
(b) First prior year (50% x \$780,673)	390,337
(c) Second prior year (25% x \$14,627,723)	<u>3,656,931</u>
(d) Total phase-in	(\$17,921,037)
6. Preliminary actuarial value of assets (10/1/2019) [(2)-(5d)]	\$451,751,513
7. 80% Market value of assets	\$347,064,381
8. 120% Market value of assets	\$520,596,571
9. Adjusted actuarial value of assets	\$451,751,513
10. Reserved assets	\$0
11. Final actuarial value of assets	\$451,751,513
12. Return on actuarial value of assets	6.84%

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	\$469,324,580
2. Normal cost for prior year	9,720,761
3. Benefit payments	(26,009,964)
4. Expected Interest	35,670,419
5. Change in Assumptions	(4,305,627)
6. Change in Plan Provisions	0
7. Expected actuarial liability, beginning of current year	\$484,400,169
8. Actual actuarial liability	493,104,894
9. Liability (Gain)/Loss, (8) – (7)	\$8,704,725

Asset (Gain)/Loss

10. Actuarial value of assets, beginning of prior year	\$435,500,142
11. Contributions	12,735,575
12. Benefit payments and expenses	(26,029,545)
13. Expected Investment return	33,070,022
14. Expected actuarial value of assets, beginning of current year	\$455,276,194
15. Actual actuarial value of assets, beginning of current year	451,751,513
16. Asset (Gain)/Loss, (14) – (15)	\$3,524,681

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

\$12,229,406

Funding Results

Reconciliation of Unfunded Actuarial Accrued Liability (UAAL)

	October 1, 2019
1. UAAL beginning of prior year	\$33,824,438
2. Normal Cost for prior year	9,720,761
3. Expenses	19,581
4. Employer Contributions	(11,034,553)
5. Employee Contributions	(1,701,022)
6. Non-Employer Contributions	0
7. Interest	2,600,397
8. Expected UAAL, beginning of current year	\$33,429,602
9. Changes due to:	
(a) Amendments	\$0
(b) Assumptions	
(1) Mortality Update	(\$6,934,270)
(2) Interest Rate Update from 7.65% to 7.60%	2,628,643
(c) Funding Methods	0
(d) Plan Provisions	0
(e) Total	(\$4,305,627)
10. (Gain)/Loss due to:	
(b) Assets	\$3,524,681
(c) Liabilities	8,704,725
(d) Total	\$12,229,406
11. UAAL beginning of current year [(8)+(9)+(10)]	\$41,353,381

Funding Results

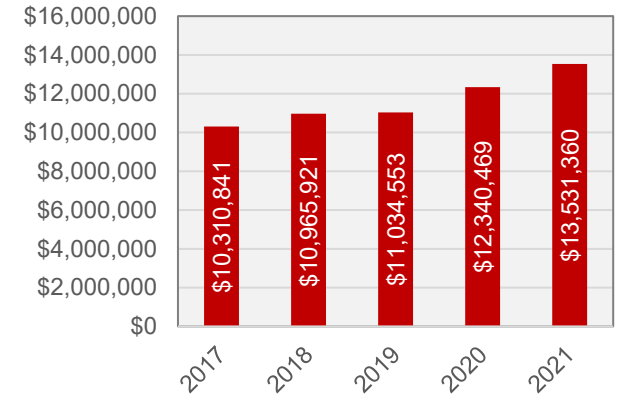
Development of Actuarial Recommended Contribution

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

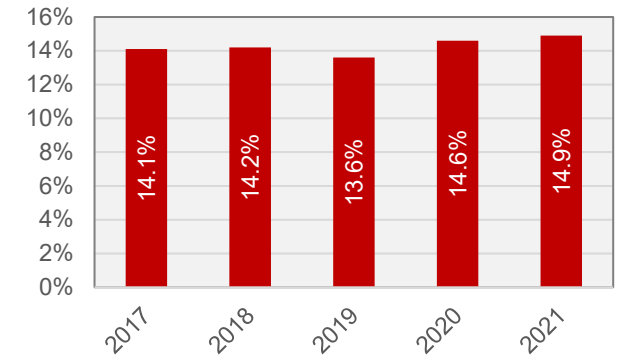
Funded Position	October 1, 2019
1. Entry age accrued Liability	\$493,104,894
2. Actuarial value of assets	451,751,513
3. Unfunded accrued liability, (1)-(2)	\$41,353,381
Employer Contributions	
1. Normal Cost	
a. Total normal cost	\$10,418,699
b. Expected participant contributions	1,968,943
c. Net normal cost	\$8,449,756
2. Administrative expenses	20,766
3. Amortization of UAAL	3,914,850
4. Applicable interest ⁽¹⁾	1,145,988
5. Total required contribution	\$13,531,360
6. Expected state contribution	0
7. Total recommended contribution	\$13,531,360
As a percentage of current payroll	14.9%

¹⁾ 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.

History of Recommended Contribution



History of Recommended Contribution (% of Payroll)



Data, Assumptions, and Plan Provisions

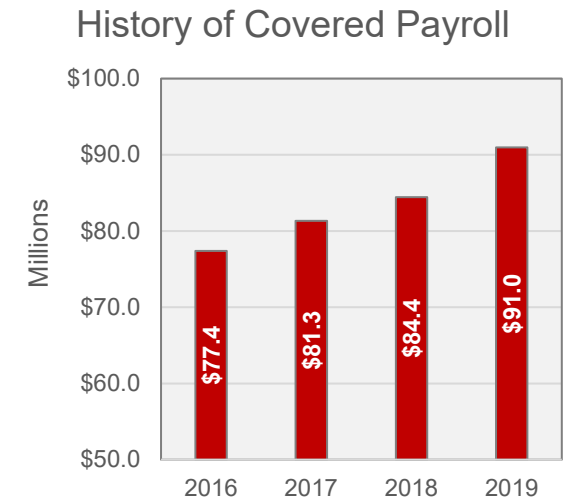
- Demographic Information
- Plan Provisions
- Assumptions and Methods

Data, Assumptions, and Plan Provisions

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
Participant Counts		
Active Participants	1,621	1,622
Retired Participants	1,013	1,052
Beneficiaries	212	208
Disabled Participants	40	39
Terminated Vested Participants	202	285
DROP Participants	108	113
Total Participants	3,196	3,319
Active Participant Demographics (Ongoing)		
Average Age	46.7	46.5
Average Service	11.4	11.1
Average Compensation	\$52,096	\$56,087
Total Covered Payroll	\$84,448,231	\$90,973,496



Demographic Information (continued)

	October 1, 2018	October 1, 2019
Retiree Statistics		
Average Age	71.9	72.1
Average Monthly Benefit	\$1,566	\$1,629
Beneficiary Statistics		
Average Age	69.9	70.4
Average Monthly Benefit	\$1,020	\$1,072
Disabled Participant Statistics		
Average Age	63.6	63.7
Average Monthly Benefit	\$1,350	\$1,395
Terminated Participant Statistics		
Average Age	53.6	49.5
Average Monthly Benefit	\$454	\$376
DROP Participant Statistics		
Average Age	60.9	61.2
Average Monthly Benefit	\$1,961	\$1,971

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
Prior Year	1,621	202	40	1,121	212	3,196
Active						
To Death	0	0	0	0	0	0
To Terminated Vested	(42)	42	0	0	0	0
To Disabled	(1)	0	1	0	0	0
To Lump Sum Cash-Out	(35)	0	0	0	0	(35)
To Retired	(68)	0	0	68	0	0
Terminated Vested						
To Active	2	(2)	0	0	0	0
To Retired	0	(9)	0	9	0	0
To Survivor	0	0	0	0	0	0
To Lump Sum Cash-Out	0	(4)	0	0	0	(4)
To Death	0	(1)	0	0	0	(1)
Disabled						
To Death	0	0	(2)	0	0	(2)
Retired						
To Death	0	0	0	(33)	0	(33)
Beneficiary						
To Death	0	0	0	0	(12)	(12)
Additions	146	57	0	0	21	224
Departures	(1)	0	0	0	(13)	(14)
Current Year	1,622	285	39	1,165	208	3,319

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	4	27	2								33	39,288
25 to 29	20	72	35	11							138	42,261
30 to 34	18	69	43	35	13						178	48,676
35 to 39	12	54	29	38	36	4					173	52,717
40 to 44	9	51	23	41	28	22	4				178	58,276
45 to 49	4	38	23	33	42	39	18	6			203	59,698
50 to 54	7	46	21	41	54	41	30	19	2		261	60,345
55 to 59	8	33	26	43	51	49	24	22	10	2	268	58,942
60 to 64	2	22	22	23	17	18	16	6	14	7	147	62,694
65 to 69		2	5	6	3	4	5	3	3	4	35	68,959
70 & up				4		2	1			1	8	49,076
Total	84	414	229	275	244	179	98	56	29	14	1,622	56,087

Data, Assumptions, and Plan Provisions

Plan Status

Prior Retirement System 1944; Supplemental Retirement System January 1, 1964.

Eligibility for Participation

Supplemental Retirement System

Membership is optional for Members of Prior Plan as of January 1, 1964. Full-time permanent employees or full-time temporary employees for more than six months hired on or after January 1, 1964 will be enrolled as Members with a participation date 90 days from date of hire. Police cadets hired on or after October 1, 2003 will not be eligible to participate. Administrative management employees may waive participation in order to participate in the 401a plan. Effective October 1, 2009, any active participant or any employees initially eligible to participate in this plan may make an irrevocable election to participate in the 401(a) plan in lieu of participation in this plan, unless such election is contrary to any collective bargaining agreement.

Accrual of Benefits

Supplemental Retirement System

Average Monthly Salary times a percentage derived as follows

Years of Credited Service During:	Percentage
Before 01/01/1964	2.0%
01/01/1964 – 09/30/1972	1.0%
10/01/1972 – 02/29/1980	1.5%
03/01/1980 – 02/28/1990	2.0%
03/01/1990 – 02/29/2000	1.5%
03/01/2000 – and later	2.0%

Benefits

Normal Retirement

Eligibility

Earlier of:

Age 60 (if membership attained on or after October 1, 1989 but before March 1, 2000, then five years of Credited Service are required, or if membership attained on or after March 1, 2000, 10 years of Credited Service are required),

Age 55 with 25 years of Credited Service, or

Age 51 with 30 years of Credited Service.

Data, Assumptions, and Plan Provisions

Death before Retirement In Line of Duty

Benefit Monthly benefit payable to surviving spouse until death or remarriage equal to 40% of Covered Salary for the first 10 years after the Member's death, and 30% of covered Salary thereafter.

Death before Retirement Not In Line of Duty

Benefit **Death while eligible for retirement**

Beneficiary will receive a benefit calculated as if the member had retired on the date of death. The benefit will be the survivor portion of the actuarially adjusted optional form of benefit elected by the beneficiary.

Death with 20 years of Credited Service (but not eligible to retire)

Unless accumulated employee contributions are withdrawn, the Beneficiary will receive a benefit at the Member's normal retirement date calculated as if the member had terminated on the date of death. The benefit will be the survivor portion of the actuarially adjusted optional form of benefit elected by the beneficiary. Effective March 1, 2000, the Pension Board may credit up to 90 days of City Service if the deceased employee had at least 19 years and 274 days of Credited Service on the date of death.

Death while not eligible to retire and with less than 20 years of Credited Service (employed on date of death)

Refund of Member's accumulated employee contributions, plus 1% of accumulated employee contributions for each year of Credited Service, plus, if employed on or before September 30, 1989, the Specified Employer Contributions deposited on the Member's behalf.

Death while not eligible to retire and with less than 20 years of Credited Service (not employed on date of death)

Refund of Member's accumulated employee contributions, plus, if employed on or before September 30, 1989 and Member had five or more years of continuous service, the Specified Employer Contributions deposited on the Member's behalf.

Termination Benefit

Eligibility A Member is eligible for a separation benefit upon voluntary termination or discharge.

Benefit Refund of Member's accumulated employee contributions, plus, if employed on or before September 30, 1989 the Specified Employer Contributions deposited on the Member's behalf, without interest. If accumulated contributions are not withdrawn from the Fund, then the vested accrued benefit is payable to the Member beginning at age 60 for life. If the Member dies prior to age 60, the beneficiary will receive the accumulated contributions with interest. The vested percentage is as follows:

Data, Assumptions, and Plan Provisions

Years of Credited Service	Vested Percentage
Less than 5	0%
5	4
6	12
7	20
8	28
9	36
10	44
11	52
12	60
13	68
14	76
15	84
16	92
17 or more	100

Disability Benefit In Line of Duty

Supplemental Retirement System

The Member's accrued pension benefit based on Average Monthly Salary at the date of disability and Credited Service projected to age 65. This benefit plus the initial Social Security benefit cannot exceed the Covered Salary at the date of disability, nor can be less than 65% of Average Monthly Salary. Finally, this benefit will be reduced by amounts payable under Worker's Compensation.

Disability Benefit Not In Line of Duty

Supplemental Retirement System

If disability occurs after Member attains seven years of Credited Service, the benefit is the greater of the Member's accrued pension benefit at the date of disability or 30% of Average Monthly Salary.

Average Monthly Salary

The average of the Member's Covered Salary during the highest five years during all years of Creditable Service. Covered Salary is base compensation (hourly rate times normal basic work schedule, plus lump sum wage or salary payments paid to the employee in lieu of pay rate increases), but excluding overtime and bonuses.

Credited Service

Length of service with the City measured from date of enrollment in the Retirement System, including vacations and other leaves of absence. Unpaid leaves of absence greater than one month are excluded.

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

Data, Assumptions, and Plan Provisions

Employee Contributions Member contributions are determined as a percentage of Covered Salary. The applicable percentages are as follows:

Period	Prior	Supplemental
Up to 09/30/1983	5.84%	3.50%
10/01/1983 – 09-30/1984	4.84%	2.50%
10/01/1984 – 09/30/1985	3.84%	1.50%
10/01/1985 – 09/30/2000	0.00%	0.00%
10/01/2000 – 09/30/2001	0.00%	1.00%
10/01/2001 – and later	0.00%	2.00%

Interest on the contributions is credited at an annual rate of 3.0%

Members who have elected the Deferred Retirement Option Program (DROP) do not contribute.

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 five years or until the Member would have earned 35 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 with the City.

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.

COLA

An adjustment factor shall be applied to the current benefit of all eligible retirees and beneficiaries each year. The adjustment shall not be greater than 2% for any retiree under the Prior System, or 1.5% for any retiree under the Supplemental System.

Payment Forms

The benefit begins at retirement and continues for the Member's life but guaranteed for the first 120 months.

Optional Forms – The following optional forms of retirement income are available based on Actuarial Equivalence: Option 1 – Life annuity with Twenty Years Certain; Option 2 – 100% Joint and Survivor Annuity; Option 3 – 50% Joint and Survivor Annuity; Option 4 – Single Life Annuity; Option 5 – 75% Joint and Survivor Annuity.

Plan Provisions Not Included

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

Data, Assumptions, and Plan Provisions

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): Retirement rates are as follows:

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
51	20.0%	56	15.0%	61	15.0%	66	30.0%
52	20.0%	57	15.0%	62	25.0%	67	30.0%
53	20.0%	58	15.0%	63	25.0%	68	30.0%
54	20.0%	59	15.0%	64	25.0%	69	30.0%
55	15.0%	60	15.0%	65	30.0%	70	100.0%

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 disability rates are as follows:

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
20	0.02%	30	0.04%	40	0.15%	50	0.25%
25	0.02%	35	0.10%	45	0.20%	55	0.25%

50% of disabilities are assumed to be service incurred and 50% 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 General Below Median Employee Female, with MP-2018 generational Improvement Scale
 Male: PUB-2010 Headcount Weighted General Below Median Employee Male, set back 1 year with MP-2018 generational Improvement Scale

Healthy Inactive Mortality
 Female: PUB-2010 Headcount Weighted General Below Median Healthy Retiree Female, with MP-2018 generational Improvement Scale
 Male: PUB-2010 Headcount Weighted General Below Median Healthy Retiree Male, set back 1 year with MP-2018 generational Improvement Scale

Disabled
 Female: PUB-2010 Headcount Weighted General Disabled Retiree Female, set forward 3 years
 Male: PUB-2010 Headcount Weighted General Disabled Retiree Male, set forward 3 years

100% of deaths among active Members 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 tables for the October 1, 2019 valuation.

Data, Assumptions, and Plan Provisions

Withdrawal (FE):

Representative withdrawal rates are as follows for participants with five years of service or more:

<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
25	6.00%	35	5.00%	45	3.00%	55	3.00%
30	5.50%	40	3.00%	50	3.00%		

For participants with fewer than five years of service:

<u>Year</u>	<u>Rates</u>
1	10.00%
2	10.00%
3	10.00%
4	8.50%
5	6.50%

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):

Salary increase assumption as follows:

<u>Age</u>	<u>Rates</u>	<u>Age</u>	<u>Rates</u>
20	8.00%	40	6.00%
25	7.50%	45	5.50%
30	7.50%	50	5.00%
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 1.2% per year, as limited by the ten-year average historical growth in payroll.

Interest Rate (CO):

7.60% per annum, net investment 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.

Data, Assumptions, and Plan Provisions

Amortization Method:	A 25-year amortization period will apply to any future changes in the unfunded actuarial accrued liability.
Other Procedures:	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).
Cost-of-Living	Cost of living increase is 2.0% for the Prior Plan and 1.5% for the Supplemental Plan.
Changes Since Prior Report:	<p>The discount rate was changed from 7.65% to 7.60% 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 0.3% to 1.2%, as limited by the ten-year average historical growth in payroll.</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	\$10,965,921	\$11,034,553
(ii) Member	1,603,955	1,701,022
(iii) Nonemployer contributing entity	0	0
(iv) Excess premium tax	<u>0</u>	<u>0</u>
(v) Total	\$12,569,876	\$12,735,575
(b) Investment income		
(i) Net increase in fair value of investments	\$24,658,695	(\$4,422,456)
(ii) Interest and dividends	10,210,854	10,367,610
(iii) Investment expense, other than from securities lending	(1,833,041)	(1,608,685)
(iv) Securities lending income	0	0
(v) Securities lending expense	<u>0</u>	<u>0</u>
(vi) Total	\$33,036,508	\$4,336,469
(c) Other	<u>0</u>	<u>0</u>
(d) Total additions [(a)+(b)+(c)]	\$45,606,384	\$17,072,044
2. Deductions		
(a) Benefit payments, including refunds of member contributions	\$24,073,567	\$26,009,964
(b) Administrative expense	17,587	19,581
(c) Other	<u>0</u>	<u>0</u>
(d) Total deductions	<u>\$24,091,154</u>	<u>\$26,029,545</u>
3. Net increase [(1d)-(2d)]	\$21,515,230	(\$8,957,501)
4. Net assets held in trust for pension benefits, beginning of year	<u>\$421,272,747</u>	<u>442,787,977</u>
5. Net assets held in trust for pension benefits, end of year [(3)+(4)]	<u>\$442,787,977</u>	<u>\$433,830,476</u>

Other Measurements

Distribution of Assets

	<u>September 30, 2018</u>	<u>September 30, 2019</u>
Cash and deposits	\$15,424,180	\$15,604,650
Securities lending cash collateral	0	0
Total cash	\$15,424,180	\$15,604,650
Receivables		
Contributions	\$0	\$0
Other	1,157,636	932,305
Total receivables	\$1,157,636	\$932,305
Investments		
Common Stock and Equities	\$308,189,738	\$295,131,515
Corporate Bonds	56,173,783	40,071,002
Government Securities	20,813,624	42,756,217
Other Assets	41,374,727	39,485,717
Total Investments	\$426,551,872	\$417,444,451
Payables		
Investment management fees	\$0	\$3,399
Due to broker for investments purchased	345,711	147,531
Other	0	0
Total liabilities	\$345,711	\$150,930
Market value of assets	\$442,787,977	\$433,830,476

Schedule of Amortizations

October 1, 2019

<u>Date Established</u>	<u>Description</u>	<u>Original Amount</u>	<u>Total Remaining Period Years</u>	<u>41,353,381 Remaining Balance</u>	<u>4,502,834 Annual Payment (Prior Assumptions)</u>	<u>3,914,850 Annual Payment (Current Assumptions)</u>
10/1/1992	Assumption Change	1,014,826	3	110,363	39,418	39,065
10/1/1992	Method Change	(1,648,065)	3	(179,230)	(64,015)	(63,442)
10/1/1994	Assumption Change	1,176,493	5	213,086	48,847	47,997
10/1/1996	Assumption Change	2,166,593	7	534,906	93,537	91,162
10/1/1998	Assumption Change	4,394,192	9	1,355,267	196,526	190,055
10/1/2000	Plan Amendment	11,227,924	11	4,083,385	515,689	495,053
10/1/2002	Assumption Change	(1,772,250)	13	(731,723)	(83,097)	(79,218)
10/1/2007	Assumption Change	4,062,949	18	2,227,537	211,236	198,227
10/1/2007	Method Change	(17,074,960)	18	(9,361,450)	(887,741)	(833,070)
10/1/2009	Assumption Change	9,794,283	20	9,217,889	831,479	775,865
10/1/2009	Method Change	49,977,457	20	47,036,276	4,242,801	3,959,018
10/1/2010	Experience Loss (Gain)	9,080,771	21	8,534,723	753,338	701,054
10/1/2010	Assumption Change	(3,625,646)	21	(3,407,627)	(300,782)	(279,907)
10/1/2011	Experience Loss (Gain)	18,398,977	22	17,233,080	1,491,307	1,384,181
10/1/2011	Assumption Change	(5,983,705)	22	(5,604,535)	(485,002)	(450,163)
10/1/2012	Experience Loss (Gain)	5,025,154	23	4,720,685	401,190	371,430
10/1/2012	Assumption Change	(6,486,597)	23	(6,093,583)	(517,867)	(479,451)
10/1/2013	Experience Loss (Gain)	(7,502,435)	24	(7,089,506)	(592,604)	(547,303)
10/1/2013	Assumption Change	(3,188,639)	24	(3,013,137)	(251,865)	(232,611)
10/1/2014	Experience Loss (Gain)	(15,865,265)	25	(15,148,294)	(1,247,133)	(1,149,072)
10/1/2014	Assumption Change	(4,052,412)	25	(3,869,278)	(318,551)	(293,504)
10/1/2015	Experience Loss (Gain)	(10,878,994)	26	(10,508,023)	(853,120)	(784,242)
10/1/2015	Assumption Change	(3,328,072)	26	(3,214,585)	(260,984)	(239,913)
10/1/2015	Method Change	(3,538,359)	26	(3,417,703)	(277,475)	(255,072)
10/1/2016	Experience Loss (Gain)	55,824	27	54,487	4,367	4,006
10/1/2016	Assumption Change	10,792,015	27	10,533,405	844,280	774,402
10/1/2016	Method Change	(8,555,724)	27	(8,350,702)	(669,331)	(613,933)
10/1/2017	Experience Loss (Gain)	3,618,203	23	3,526,520	299,703	277,471
10/1/2017	Assumption Change	(3,475,844)	23	(3,387,769)	(287,911)	(266,554)
10/1/2018	Experience Loss (Gain)	3,201,414	24	3,162,592	264,358	244,149
10/1/2018	Assumption Change	3,598,897	24	3,555,255	297,180	274,462

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>
10/1/2019	Experience Loss (Gain)	12,936,697	25	12,936,697	1,065,056	981,311
10/1/2019	Assumption Change	(4,305,627)	25	(4,305,627)	0	(326,603)

Other Measurements

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

Comparative Summary Of Principal Valuation Results

	10/1/2019 7.60% (current methods & assumptions)	10/1/2019 7.65% (prior methods & assumptions)	10/1/2018 7.65%
Participant Data			
Active members	1,622	1,622	1,621
Total annual payroll	\$90,973,496	\$90,973,496	\$84,448,231
Members in DROP	113	113	108
Total annualized benefit	\$2,673,280	\$2,673,280	2,541,495
Retired members and beneficiaries	1,260	1,260	1,225
Total annualized benefit	23,240,085	\$23,240,085	\$21,654,972
Disabled members receiving benefits	39	39	40
Total annualized benefit	\$652,819	\$652,819	\$647,950
Terminated vested members	285	285	202
Total annualized benefit	\$1,284,518	\$1,284,518	\$1,101,440
Assets			
Actuarial value of assets	\$451,751,513	\$451,751,513	\$435,500,142
Market value of assets	\$433,830,476	\$433,830,476	\$442,787,977

Other Measurements

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

Comparative Summary Of Principal Valuation Results (continued)

	10/1/2019 7.60% (current methods & assumptions)	10/1/2019 7.65% (prior methods & assumptions)	10/1/2018 7.65%
Liabilities, present value of all future expected benefit payments			
Active members			
Retirement benefits	\$254,246,216	\$253,693,432	\$240,426,026
Vesting benefits	\$26,670,713	\$27,209,348	\$25,329,612
Disability benefits	\$5,984,052	\$5,765,663	\$5,318,840
Death benefits	\$2,152,683	\$3,019,291	\$2,879,820
Return of contribution	0	0	0
Total	\$289,053,664	\$289,687,734	\$273,954,298
Terminated vested members	\$10,363,465	\$10,586,534	\$9,404,819
Retired members and beneficiaries	\$281,801,653	\$284,775,997	\$266,338,500
Disabled members	\$5,798,648	\$5,742,283	\$5,688,188
Total	\$587,017,430	\$590,792,548	\$555,385,805
Liabilities due and unpaid	\$0	\$0	\$0
Actuarial accrued liability	\$493,104,894	\$497,410,521	\$469,324,580
Unfunded actuarial accrued liability	\$41,353,381	\$45,659,008	\$33,824,438

Other Measurements

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

Comparative Summary Of Principal Valuation Results (continued)

	10/1/2019 7.60% (current methods & assumptions)	10/1/2019 7.65% (prior methods & assumptions)	10/1/2018 7.65%
Actuarial present value of accrued benefits			
Statement of actuarial present value of all accrued benefits			
Vested accrued benefits			
Members currently receiving benefits	\$287,600,301	\$290,518,280	\$272,026,688
Other members	128,471,554	129,338,059	127,161,101
Total value of all vested accrued benefits	\$416,071,855	\$419,856,339	\$399,187,789
Non-vested accrued benefits	11,056,496	11,125,846	11,346,811
Total actuarial present value of all accrued benefits	\$427,128,351	\$430,982,185	\$410,534,600
Statement of changes in total actuarial present value of all accrued benefits (ASC 960)			
Actuarial present value of accrued benefits, beginning of year	\$410,534,600	\$410,534,600	\$387,452,026
Increase (decrease) during year			
Benefits accumulated	\$14,019,101	\$14,019,101	\$15,416,880
Plan amendment	0	0	0
Changes in actuarial assumptions	(3,853,834)	0	2,815,101
Interest	30,502,051	30,502,051	28,924,160
Benefits paid	(24,073,567)	(24,073,567)	(24,073,567)
Other changes	0	0	0
Net increase (decrease)	\$16,593,751	\$20,447,585	\$23,082,574
Actuarial present value of accrued benefits, end of year	\$427,128,351	\$430,982,185	\$410,534,600

Other Measurements

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

Comparative Summary Of Principal Valuation Results (continued)

	10/1/2019 7.60% (current methods & assumptions)	10/1/2019 7.65% (prior methods & assumptions)	10/1/2018 7.65%
Pension cost			
Normal Cost	\$10,418,699	\$10,413,971	\$9,720,761
Member contributions	\$1,968,943	\$1,969,382	\$1,903,718
Expected city and state contribution	\$13,531,360	\$14,176,056	\$12,340,469
As % of payroll	14.87%	15.58%	14.61%
Member Contributions as % of payroll	2.00%	2.00%	2.00%
Past contributions	9/30/2019		9/30/2018
Required plan sponsor contribution	\$12,340,469		\$11,034,553
Required member contribution	\$1,903,718		\$1,836,836
Actual contributions made by:			
Plan's sponsor	\$11,034,553		\$10,965,921
Members	\$1,701,022		\$1,603,955
Other	\$0		\$0
Net actuarial gain (loss) (if applicable)	(\$12,229,406)		\$3,700,954
Other disclosures (where applicable)			
Present value of active member			
Future salaries at attained age	\$831,642,894	\$826,646,739	\$758,990,889
Future contributions at attained age	\$16,609,942	\$16,510,566	\$15,164,871

Other Measurements

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

Historical Salary Increases and Asset Performance

Year Ending	Payroll Growth	Expected Salary Growth	Asset Return (Market)	Asset Return (Actuarial)	Asset Return (Expected)
9/30/2019	7.7%	5.5%	0.99%	6.84%	7.65%
9/30/2018	3.8%	5.4%	7.89%	6.74%	7.70%
9/30/2017	5.1%	5.7%	11.55%	6.97%	7.75%
9/30/2016	5.4%	5.7%	7.09%	7.64%	7.75%
9/30/2015	5.7%	5.7%	(0.10%)	10.60%	7.75%
9/30/2014	(0.7%)	2.5%	10.60%	11.40%	7.75%
9/30/2013	(2.3%)	0.0%	16.10%	10.50%	7.75%
9/29/2012	(2.2%)	0.0%	17.90%	6.70%	7.75%
9/30/2011	(6.5%)	3.5%	(0.70%)	(0.30%)	7.75%
9/30/2010	(4.2%)	5.8%	7.80%	2.00%	7.75%
Averages					
3-year			6.72%	6.85%	
5-year			5.39%	7.75%	
10-year	1.2%		7.74%	6.85%	

Amortization of Unfunded Actuarial Accrued Liability

	UAAL	Amortization
10/1/2019	\$41,353,381	\$3,914,850
10/1/2020	\$40,283,862	\$3,961,832
10/1/2021	\$39,082,505	\$4,009,375
10/1/2022	\$37,738,687	\$4,082,749
10/1/2045	\$224,283	\$224,283

Other Measurements

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

	GASB 67/68 Valuation	- 200 bp ²	Funding Rate ²	+ 200 bp ²
	7.65%	5.60%	7.60%	9.60%
Total pension liability				
Service Cost	\$9,427,258	\$9,720,761	\$9,720,761	\$9,720,761
Interest	35,608,930	35,670,419	35,670,419	35,670,419
Benefit changes	0	0	0	0
Difference between expected and actual experience	(329,233)	8,704,725	8,704,725	8,704,725
Changes in assumptions	3,959,095	122,191,084	(4,305,627)	(94,160,144)
Benefit payments	(25,835,200)	(25,835,200)	(25,835,200)	(25,835,200)
Contribution refunds	(174,764)	(174,764)	(174,764)	(174,764)
Net change in pension liability	\$22,656,086	\$150,277,025	\$23,780,314	(\$66,074,203)
Total pension liability, beginning of year	\$466,031,376	\$469,324,580	\$469,324,580	\$469,324,580
Total pension liability, end of year	\$488,687,462	\$619,601,605	\$493,104,894	\$403,250,377
Plan fiduciary net position				
Contributions - Employer	\$11,034,553	\$11,034,553	\$11,034,553	\$11,034,553
Contributions - State	0	0	0	0
Contributions - Member	1,701,022	1,701,022	1,701,022	1,701,022
Net investment income	4,336,469	4,336,469	4,336,469	4,336,469
Benefit payments	(25,835,200)	(25,835,200)	(25,835,200)	(25,835,200)
Contribution refunds	(174,764)	(174,764)	(174,764)	(174,764)
Administrative expense	(19,581)	(19,581)	(19,581)	(19,581)
Other	0	0	0	0
Net change in plan fiduciary net position	(\$8,957,501)	(\$8,957,501)	(\$8,957,501)	(\$8,957,501)
Plan fiduciary net position, beginning of year	\$442,787,977	\$442,787,977	\$442,787,977	\$442,787,977
Plan fiduciary net position, end of year	\$433,830,476	\$433,830,476	\$433,830,476	\$433,830,476
Net pension liability/(asset)	\$54,856,986	\$185,771,129	\$59,274,418	(\$30,580,099)
Funded ratio	88.77%	70.02%	87.98%	107.58%
Years that Assets support expected benefit payments	22	17	21	35

Other Measurements

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

	GASB 67/68 Valuation	- 200 bp ²	Funding Rate ²	+ 200 bp ²
Estimated city contribution	7.65%	5.60%	7.60%	9.60%
Annual dollar value	\$14,176,056	\$28,296,625	\$13,531,360	\$5,201,735
Percentage of payroll	15.58%	31.10%	14.87%	5.72%

¹Does not include DROP assets and liabilities

²Based on valuation assumption with the following changes

Mortality	Update to FRS Mortality Tables – version of Pub2010 with MP-2018
Interest	7.60%

Other Measurements

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

Sustainment of Expected Benefit Payments

Mortality GASB 67/68 Valuation
Interest 7.65%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$433,830,476	\$32,144,890	\$27,783,634
2	438,191,732	32,420,244	29,335,944
3	441,276,032	32,598,325	30,877,235
4	442,997,122	32,674,994	32,341,980
5	443,330,136	32,636,574	34,043,832
6	441,922,878	32,465,586	35,730,650
7	438,657,814	32,149,579	37,494,648
8	433,312,745	31,675,039	39,243,026
9	425,744,758	31,026,382	41,099,608
10	415,671,532	30,194,400	42,734,451
11	403,131,481	29,170,754	44,447,887
12	387,854,348	27,943,341	46,011,675
13	369,786,014	26,504,099	47,530,243
14	348,759,870	24,843,804	48,909,776
15	324,693,898	22,953,569	50,219,868
16	297,427,599	20,821,581	51,448,168
17	266,801,012	18,438,739	52,511,091
18	232,728,660	15,794,995	53,502,134
19	195,021,521	12,880,319	54,303,318
20	153,598,522	9,686,168	54,976,936
21	108,307,754	6,191,290	55,779,536
22	58,719,508	2,369,343	56,537,199
23	4,551,652		57,125,558

Other Measurements

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

Sustainment of Expected Benefit Payments

Mortality Update to FRS Mortality Tables
Interest 5.60%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$433,830,476	\$23,516,240	\$28,179,078
2	429,167,638	23,216,172	29,589,308
3	422,794,502	22,817,834	31,089,828
4	414,522,508	22,316,472	32,470,458
5	404,368,522	21,701,501	34,148,567
6	391,921,456	20,957,762	35,839,590
7	377,039,628	20,074,534	37,644,375
8	359,469,787	19,041,274	39,431,182
9	339,079,879	17,846,909	41,333,160
10	315,593,628	16,479,846	43,209,883
11	288,863,591	14,933,779	44,990,760
12	258,806,610	13,203,987	46,678,059
13	225,332,538	11,285,548	48,267,232
14	188,350,854	9,172,633	49,785,832
15	147,737,655	6,859,470	51,191,541
16	103,405,584	4,341,002	52,490,379
17	55,256,207	1,612,350	53,659,382
18	3,209,175		54,737,943

Other Measurements

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

Sustainment of Expected Benefit Payments

Mortality Update to FRS Mortality Tables
Interest 7.60%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$433,830,476	\$31,919,918	\$28,179,078
2	437,571,316	32,151,615	29,589,308
3	440,133,623	32,290,374	31,089,828
4	441,334,169	32,330,112	32,470,458
5	441,193,823	32,256,846	34,148,567
6	439,302,102	32,049,993	35,839,590
7	435,512,505	31,694,657	37,644,375
8	429,562,787	31,175,823	39,431,182
9	421,307,428	30,477,464	41,333,160
10	410,451,732	29,582,422	43,209,883
11	396,824,271	28,480,300	44,990,760
12	380,313,811	27,162,562	46,678,059
13	360,798,314	25,620,101	48,267,232
14	338,151,183	23,842,269	49,785,832
15	312,207,620	21,818,120	51,191,541
16	282,834,199	19,537,288	52,490,379
17	249,881,108	16,989,244	53,659,382
18	213,210,970	14,162,079	54,737,943
19	172,635,106	11,044,065	55,656,023
20	128,023,148	7,626,076	56,392,670
21	79,256,554	3,888,047	57,244,252
22	25,900,349		58,073,537

Other Measurements

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035¹

Sustainment of Expected Benefit Payments

Mortality Update to FRS Mortality Tables
 Interest 9.60%

<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	\$433,830,476	\$40,326,122	\$28,179,078	30	\$293,658,333	\$25,253,503	\$62,637,204
2	445,977,520	41,426,098	29,589,308	31	256,274,632	21,652,952	62,887,016
3	457,814,310	42,492,055	31,089,828	32	215,040,568	17,705,158	62,659,389
4	469,216,537	43,521,917	32,470,458	33	170,086,337	13,405,965	62,309,429
5	480,267,996	44,504,153	34,148,567	34	121,182,873	8,736,940	61,761,280
6	490,623,582	45,418,980	35,839,590	35	68,158,533	3,682,527	60,995,333
7	500,202,972	46,253,957	37,644,375	36	10,845,727		60,022,188
8	508,812,554	46,996,675	39,431,182				
9	516,378,047	47,633,760	41,333,160				
10	522,678,647	48,150,599	43,209,883				
11	527,619,363	48,541,384	44,990,760				
12	531,169,987	48,803,109	46,678,059				
13	533,295,037	48,932,581	48,267,232				
14	533,960,386	48,925,232	49,785,832				
15	533,099,786	48,776,687	51,191,541				
16	530,684,932	48,483,945	52,490,379				
17	526,678,498	48,044,501	53,659,382				
18	521,063,617	47,454,888	54,737,943				
19	513,780,562	46,712,656	55,656,023				
20	504,837,195	45,819,544	56,392,670				
21	494,264,069	44,764,585	57,244,252				
22	481,784,402	43,527,643	58,073,537				
23	467,238,508	42,100,683	58,724,997				
24	450,614,194	40,470,311	59,459,287				
25	431,625,218	38,611,408	60,226,056				
26	410,010,570	36,505,188	60,891,580				
27	385,624,178	34,133,331	61,547,521				
28	358,209,988	31,476,139	62,089,733				
29	327,596,394	28,519,961	62,458,022				