

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



**FOSTER & FOSTER**  
ACTUARIES AND CONSULTANTS

December 11, 2019

Board of Trustees  
City of Naples  
General Retirement System

Re: City of Naples General Retirement System

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Naples General Retirement System. The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to develop the appropriate funding requirements for the applicable plan year. Use of the results for other purposes may not be applicable and may produce significantly different results.

The valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects laws and regulations issued to date pursuant to the provisions of Chapter 112, Florida Statutes, as well as applicable federal laws and regulations. In our opinion, the assumptions used in the valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements.

In conducting the valuation, we have relied on personnel, plan design, and asset information supplied by the City of Naples, financial reports prepared by the custodian bank, and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

The undersigned are familiar with the immediate and long-term aspects of pension valuations, and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the actuarial opinions.


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

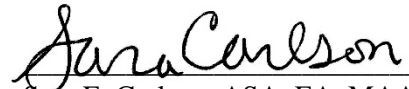
If there are any questions, concerns, or comments about any of the items contained in this report, please contact us at 239-433-5500.

Respectfully submitted,

Foster & Foster, Inc.

By:

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

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

Enclosures

## TABLE OF CONTENTS

Section	Title	Page
I	Introduction	
	a. Summary of Report	5
	b. Changes Since Prior Valuation	6
	c. Contribution Impact of Annual Changes	7
	d. Comparative Summary of Principal Valuation Results	8
II	Valuation Information	
	a. Reconciliation of Unfunded Actuarial Accrued Liabilities	14
	b. Detailed Actuarial (Gain)/Loss Analysis	16
	c. Actuarial Assumptions and Methods	17
	d. Glossary	20
	e. Discussion of Risk	22
III	Trust Fund	25
IV	Member Statistics	
	a. Statistical Data	30
	b. Age and Service Distribution	31
	c. Valuation Participant Reconciliation	32
V	Summary of Current Plan	33

## SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Naples General Retirement System, performed as of October 1, 2019, has been completed and the results are presented in this Report. The contribution amounts set forth herein are applicable to the plan/fiscal year ending September 30, 2021. Funding requirements are projected for a lump sum deposit on October 1, 2020, based on the Board's adoption of a Beginning of Year Funding Method.

The contribution requirements, compared with those set forth in the October 1, 2018 actuarial valuation report, are as follows:

Valuation Date	10/1/2019	10/1/2018
Applicable to Fiscal Year Ending	<u>9/30/2021</u>	<u>9/30/2020</u>
Minimum Required Contribution		
% of Projected Annual Payroll	15.29%	16.02%
Member Contributions (Est.)		
% of Projected Annual Payroll	3.97%	4.04%
City Required Contribution <sup>2</sup>		
% of Projected Annual Payroll	11.32%	11.98%

<sup>1</sup> Please note that the City has access to a prepaid contribution of \$112,026.45 that is available to offset a portion of the above stated requirements for the fiscal year ending September 30, 2020.

Plan experience was favorable overall on the basis of the plan's actuarial assumptions. Sources of actuarial gain included inactive mortality experience and fewer retirements than expected. These gains were offset in part by a loss associated with an investment return of 7.27% (Actuarial Asset Basis) which fell short of the 7.40% assumption.

## CHANGES SINCE PRIOR VALUATION

### Plan Changes

There have been no changes in benefits since the prior valuation.

### Actuarial Assumption/Method Changes

In conjunction with this valuation of the plan, the net-of-fees investment return assumption has been lowered from 7.40% to 7.30%.

## CONTRIBUTION IMPACT OF ANNUAL CHANGES

(1) Contribution Determined as of October 1, 2018	11.98%
(2) Summary of Contribution Impact by component:	
Change in Normal Cost Rate	-0.41%
Change in Administrative Expense Percentage	-0.04%
Payroll Change Effect on UAAL Amortization	-0.08%
Investment Return (Actuarial Asset Basis)	0.06%
Salary Increases	-0.10%
Active Decrements	-0.22%
Inactive Mortality	-0.86%
Assumption Change	0.48%
Other	<u>0.51%</u>
Total Change in Contribution	-0.66%
(3) Contribution Determined as of October 1, 2019	11.32%

## COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	New Assump <u>10/1/2019</u>	Old Assump <u>10/1/2019</u>	<u>10/1/2018</u>
A. Participant Data			
Actives	316	316	310
Service Retirees	224	224	232
DROP Retirees	0	0	0
Beneficiaries	22	22	19
Disability Retirees	1	1	1
Terminated Vested	<u>96</u>	<u>96</u>	<u>88</u>
Total	659	659	650
 Total Annual Payroll	 17,146,340	 17,146,340	 16,959,524
Annual Rate of Payments to:			
Service Retirees	3,984,793	3,984,793	3,988,650
DROP Retirees	0	0	0
Beneficiaries	207,522	207,522	187,538
Disability Retirees	10,171	10,171	10,171
Terminated Vested	287,721	287,721	345,981
B. Assets			
Actuarial Value (AVA) <sup>1</sup>	59,688,433	59,688,433	57,679,493
Market Value (MVA) <sup>1</sup>	59,976,396	59,976,396	59,892,801
C. Liabilities			
Present Value of Benefits			
Actives			
Retirement Benefits	30,891,822	30,409,284	29,694,507
Disability Benefits	588,988	579,970	609,052
Death Benefits	446,059	442,965	440,299
Vested Benefits	1,990,232	1,935,177	1,919,669
Refund of Contributions	2,131,095	2,115,974	1,784,232
Service Retirees	39,211,942	38,912,702	39,263,414
DROP Retirees <sup>1</sup>	0	0	0
Beneficiaries	1,944,437	1,930,639	1,693,125
Disability Retirees	70,698	70,312	71,815
Terminated Vested	<u>2,075,085</u>	<u>2,047,484</u>	<u>2,431,979</u>
Total	79,350,358	78,444,507	77,908,092



C. Liabilities - (Continued)	New Assump <u>10/1/2019</u>	Old Assump <u>10/1/2019</u>	<u>10/1/2018</u>
Present Value of Future Salaries	124,087,646	123,390,548	122,222,193
Present Value of Future Member Contributions	4,926,280	4,898,605	4,934,704
Normal Cost (Retirement)	915,252	894,669	960,722
Normal Cost (Disability)	23,299	22,847	26,197
Normal Cost (Death)	24,686	24,484	25,210
Normal Cost (Vesting)	123,998	120,240	131,102
Normal Cost (Refunds)	<u>218,402</u>	<u>217,533</u>	<u>191,805</u>
Total Normal Cost	1,305,637	1,279,773	1,335,036
Present Value of Future Normal Costs	8,451,983	8,228,494	8,378,218
Accrued Liability (Retirement)	24,973,416	24,663,656	23,673,600
Accrued Liability (Disability)	447,715	442,469	456,193
Accrued Liability (Death)	282,699	281,888	273,697
Accrued Liability (Vesting)	1,136,039	1,112,028	1,086,818
Accrued Liability (Refunds)	756,344	754,835	579,233
Accrued Liability (Inactives) <sup>1</sup>	<u>43,302,162</u>	<u>42,961,137</u>	<u>43,460,333</u>
Total Actuarial Accrued Liability (EAN AL)	70,898,375	70,216,013	69,529,874
Unfunded Actuarial Accrued Liability (UAAL)	11,209,942	10,527,580	11,850,381
Funded Ratio (AVA / EAN AL)	84.2%	85.0%	83.0%

D. Actuarial Present Value of Accrued Benefits	New Assump <u>10/1/2019</u>	Old Assump <u>10/1/2019</u>	<u>10/1/2018</u>
Vested Accrued Benefits			
Inactives <sup>1</sup>	43,302,162	42,961,137	43,460,333
Actives	12,166,332	11,925,183	12,059,779
Member Contributions	<u>8,649,342</u>	<u>8,649,342</u>	<u>8,126,511</u>
Total	64,117,836	63,535,662	63,646,623
Non-vested Accrued Benefits	<u>1,516,105</u>	<u>1,490,898</u>	<u>1,129,340</u>
Total Present Value			
Accrued Benefits (PVAB)	65,633,941	65,026,560	64,775,963
Funded Ratio (MVA / PVAB)	91.4%	92.2%	92.5%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:			
Plan Amendments	0	0	
Assumption Changes	607,381	0	
Plan Experience	0	373,883	
Benefits Paid	0	(4,741,280)	
Interest	0	4,617,994	
Other	<u>0</u>	<u>0</u>	
Total	607,381	250,597	

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

#### E. Pension Cost

Normal Cost (with interest)			
% of Total Annual Payroll <sup>2</sup>	7.61	7.46	7.87
Administrative Expenses (with interest)			
% of Total Annual Payroll <sup>2</sup>	0.86	0.86	0.90
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 20 years (as of 10/1/2019, with interest)			
% of Total Annual Payroll <sup>2</sup>	6.82	6.49	7.25
Minimum Required Contribution			
% of Total Annual Payroll <sup>2</sup>	15.29	14.81	16.02
Expected Member Contributions			
% of Total Annual Payroll <sup>2</sup>	3.97	3.97	4.04
Expected City Contribution			
% of Total Annual Payroll <sup>2</sup>	11.32	10.84	11.98

#### F. Past Contributions

Plan Years Ending:	<u>9/30/2019</u>
City Requirement	2,087,382
Actual Contributions Made:	
Members (excluding buyback)	682,207
City	<u>2,087,382</u>
Total	2,769,589

#### G. Net Actuarial (Gain)/Loss (813,985)

<sup>1</sup> The asset values and liabilities include accumulated DROP Plan Balances as of 9/30/2019 and 9/30/2018.

<sup>2</sup> Contributions developed as of 10/1/2019 are expressed as a percentage of total annual payroll at 10/1/2019 of \$17,146,340.

H. Schedule Illustrating the Amortization of the Total Unfunded Actuarial Accrued Liability as of:

<u>Year</u>	<u>Projected Unfunded Actuarial Accrued Liability</u>
2019	11,209,942
2020	10,774,016
2021	10,306,272
2026	7,402,717
2030	3,837,205
2035	97,633
2039	0

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

	<u>Actual</u>	<u>Assumed</u>
Year Ended 9/30/2019	3.89%	5.24%
Year Ended 9/30/2018	3.82%	5.28%
Year Ended 9/30/2017	3.87%	5.30%
Year Ended 9/30/2016	3.30%	5.28%
Year Ended 9/30/2015	3.21%	5.27%

(ii) 5 Year Comparison of Investment Return on Market Value and Actuarial Value

	<u>Market Value</u>	<u>Actuarial Value</u>	<u>Assumed</u>
Year Ended 9/30/2019	3.66%	7.27%	7.40%
Year Ended 9/30/2018	10.34%	8.92%	7.50%
Year Ended 9/30/2017	12.00%	9.09%	7.50%
Year Ended 9/30/2016	7.93%	10.36%	7.50%
Year Ended 9/30/2015	0.79%	9.76%	7.50%

(iii) Average Annual Payroll Growth

(a) Payroll as of:	10/1/2019	\$17,146,340
	10/1/2009	16,206,593
(b) Total Increase		5.80%
(c) Number of Years		10.00
(d) Average Annual Rate		0.57%

## STATEMENT BY ENROLLED ACTUARY

This actuarial valuation was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of Part VII, Chapter 112, Florida Statutes. There is no benefit or expense to be provided by the plan and/or paid from the plan's assets for which liabilities or current costs have not been established or otherwise taken into account in the valuation. All known events or trends which may require a material increase in plan costs or required contribution rates have been taken into account in the valuation.



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

Please let us know when the report is approved by the Board and unless otherwise directed we will provide a copy of the report to the following office to comply with Chapter 112 Florida Statutes:

Mr. Keith Brinkman  
Bureau of Local  
Retirement Systems  
Post Office Box 9000  
Tallahassee, FL 32315-9000

# RECONCILIATION OF UNFUNDED ACTUARIAL ACCRUED LIABILITIES

(1)	Unfunded Actuarial Accrued Liability as of October 1, 2018	\$11,850,381
(2)	Sponsor Normal Cost developed as of October 1, 2018	649,871
(3)	Expected administrative expenses for the year ended September 30, 2019	152,500
(4)	Expected interest on (1), (2) and (3)	930,661
(5)	Sponsor contributions to the System during the year ended September 30, 2019	2,087,382
(6)	Expected interest on (5)	154,466
(7)	Expected Unfunded Actuarial Accrued Liability as of September 30, 2019 (1)+(2)+(3)+(4)-(5)-(6)	11,341,565
(8)	Change to UAAL due to Assumption Change	682,362
(9)	Change to UAAL due to Actuarial (Gain)/Loss	(813,985)
(10)	Unfunded Actuarial Accrued Liability as of October 1, 2019	11,209,942

Type of <u>Base</u>	Date <u>Established</u>	Years <u>Remaining</u>	10/1/2019 <u>Amount</u>	Amortization <u>Amount</u>
Experience Loss	10/1/2002	13	1,740,083	197,350
Experience Loss	10/1/2003	14	651,588	70,691
Experience Loss	10/1/2004	14	2,986,817	324,042
Amendment	10/1/2004	14	25,298	2,745
Experience Gain	10/1/2005	14	(1,971,028)	(213,839)
Experience Gain	10/1/2006	14	(192,988)	(20,937)
Amendment	10/1/2006	14	65,307	7,085
Experience Loss	10/1/2007	14	772,909	83,854
Method/Assump Change	10/1/2007	14	4,568,615	495,653
Experience Loss	10/1/2008	14	5,689,384	617,246
Assump Changes	10/1/2009	14	(32,298)	(3,504)
Experience Loss	10/1/2009	14	7,129,815	773,520
Experience Loss	10/1/2010	14	635,823	68,981
Benefit Change	10/1/2010	14	(9,065,367)	(983,510)
Experience Loss	10/1/2011	14	2,781,761	301,796
Benefit Change	10/1/2011	14	358,226	38,864
Experience Loss	10/1/2012	14	1,056,952	114,670
Experience Gain	10/1/2013	14	(335,755)	(36,426)
Experience Gain	10/1/2014	14	(1,078,972)	(117,059)

Type of <u>Base</u>	Date <u>Established</u>	Years <u>Remaining</u>	10/1/2019 <u>Amount</u>	Amortization <u>Amount</u>
Assump Change	10/1/2014	14	152,048	16,496
Actuarial Gain	10/1/2015	14	(2,461,680)	(267,070)
Actuarial Gain	10/1/2016	14	(1,029,446)	(111,685)
Assump Change	10/1/2016	14	2,397,954	260,156
Experience Gain	10/1/2017	14	(2,202,142)	(238,912)
Actuarial Gain	10/1/2018	9	(820,637)	(118,890)
Assump Change	10/1/2018	19	(480,702)	(44,325)
Actuarial Gain	10/1/2019	10	(813,985)	(109,511)
Assump Change	10/1/2019	20	<u>682,362</u>	<u>61,435</u>
			11,209,942	1,168,916

## DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of October 1, 2018	\$11,850,381
(2) Expected UAAL as of October 1, 2019	11,341,565
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	74,983
Salary Increases	(121,591)
Active Decrements	(278,930)
Inactive Mortality	(1,086,128)
Other	<u>597,681</u>
Increase in UAAL due to (Gain)/Loss	(813,985)
Assumption Changes	<u>682,362</u>
(4) Actual UAAL as of October 1, 2019	\$11,209,942



## ACTUARIAL ASSUMPTIONS AND METHODS

### Mortality Rate

#### *Healthy Active Lives:*

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

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

#### *Healthy Inactive Lives:*

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

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

#### *Disabled Lives:*

**Female:** 100% RP2000 Disabled Female set forward two years

**Male:** 100% RP2000 Disabled Male setback four years

The assumed rates of mortality are mandated by Chapter 2015-157, Laws of Florida. This law mandates the use of the assumption used in either of the two most recent valuations of the Florida Retirement System (FRS). The above rates are those outlined in the July 1, 2018 FRS actuarial valuation report for non-special risk lives. We feel this assumption sufficiently accommodates future mortality improvements.

### Interest Rate

7.30% (prior year 7.40%) per year compounded annually, net of investment related expenses. This is supported by the target asset allocation of the trust and the expected long-term return by asset class.

### Salary Increases

Salary Scale	
Service	Rate
1-2	6.00%
3-9	5.50%
10-19	5.00%
20+	4.00%

The above rates were incorporated with the October 1, 2014 valuation as the result of an experience study.

### Payroll Growth

None for amortization of the UAAL.

Administrative Expenses

\$146,942 annually, based on the average of actual expenses incurred in the prior two fiscal years.

Amortization Method

New UAAL amortization bases are established according to the following amortization periods:

Experience: 10 Years.

Assumption/Method Changes: 20 Years.

Benefit Changes: 30 Years.

Normal Retirement Rates

For Members hired prior to October 1, 2011:

<u>% Retiring During the Year</u>	
<u>Age</u>	<u>Rate</u>
50-54	0%
55-58	17%
59-60	25%
61-62	17%
63-64	25%
65+	100%

This assumption was covered and changed as a result of our August 4, 2017 Actuarial Experience Study.

For Members hired after September 30, 2011, 100% retirement is assumed at the earlier of 1) Age 65 with 8 years of Credited Service, and 2) the completion of 33 years of Credited Service, regardless of Age. This assumption is reasonable, based on Plan provisions and historical experience.

Early Retirement Rates

For Members hired prior to October 1, 2011:

<u>% Retiring During the Year</u>	
<u>Age</u>	<u>Rate</u>
55	4.5%
56-58	9.0%
59	13.0%

This assumption was covered and changed as a result of our August 4, 2017 Actuarial Experience Study.

For Members hired after September 3, 2011, they are assumed to retire with an immediate subsidized benefit at the rate of 5% per year. This assumption was incorporated with the October 1, 2007 valuation as the result of a prior Experience Study.

### Termination Rates

% Terminating During the Year	
Service	Rate
0-2	14.0%
3-4	9.0%
5-9	7.5%
10-19	6.0%
20+	2.5%

This assumption was covered and changed as a result of our August 4, 2017 Actuarial Experience Study.

### Disability Rates

Sample rates below:

% Becoming Disabled During the Year	
Age	Rate
20	0.05%
25	0.05%
30	0.06%
35	0.09%
40	0.12%
45	0.28%
50	0.43%

### Actuarial Asset Method

All assets are valued at market value with an adjustment made to uniformly spread actuarial investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a five-year period.

### Funding Method

Entry Age Actuarial Cost Method.

## GLOSSARY

Total Annual Payroll is the projected annual rate of pay as of the valuation date for all covered Members.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current Members, Retirees, Beneficiaries, Disability Retirees and Vested Terminations.

Normal (Current Year's) Cost is determined for each participant as the present value of future benefits, determined as of the Member's entry age, amortized as a level percentage of compensation over the anticipated number of years of participation, determined as of the entry age.

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

(a) The normal cost accrual rate equals:

- (i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by
- (ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age.

(b) In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.

(c) The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's accrued liability equals the present value, at the beneficiary's attained age, of future benefits. The unfunded accrued liability equals the total accrued liability less the actuarial value of assets.

- (d) Under this method, the entry age used for each active participant is the participant's age at the time he or she would have commenced participation if the plan had always been in existence under current terms, or the age as of which he or she first earns service credits for purposes of benefit accrual under the current terms of the plan.

Unfunded Actuarial Accrued Liability (UAAL) is the difference between the actuarial accrued liability (described above) and the actuarial value of assets. Under the Entry Age Normal Actuarial Cost Method, an actuarial gain or loss, based on actual versus expected UAAL, is determined in conjunction with each valuation of the plan.

Total Required Contribution is equal to the Normal Cost plus an amount sufficient to amortize the Unfunded Accrued Liability over no more than 30 years. The required amount is adjusted for interest according to the timing of contributions during the year.

## DISCUSSION OF RISK

ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined using various actuarial assumptions. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. It is possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current-year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss is amortized over a period of time determined by the plan's amortization method. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's contribution requirements associated with plan experience. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization payment could potentially grow to an unmanageable level.

- Investment Return: When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized. Further, it is unlikely that the plan will experience a scenario that matches the assumed return in each year as capital markets can be volatile from year to year. Therefore, contribution amounts can vary in the future.
- Salary Increases: When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.
- Payroll Growth: The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll does not increase according to the plan's payroll growth assumption, the plan's amortization payment can increase significantly as a percentage of payroll even if all assumptions other than the payroll growth assumption are realized. As a result of the experience study performed in 2017, the Unfunded Actuarial Accrued Liability is now funded as a level dollar.
- Demographic Assumptions: Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could have occurred.

### Impact of Plan Maturity on Risk

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared amongst active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on risk tolerance and the overall risk characteristics of the plan. For example, closed plans with a large amount of retired liability do not have as long of a time horizon to recover from losses (such as losses on investments due to lower than expected investment returns) as plans where the majority of the liability is attributable to active members. For this reason, less tolerance for investment risk may be warranted for highly mature closed plans with a substantial inactive liability. Similarly, mature closed plans paying substantial retirement benefits resulting in a small positive or net negative cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the plan, we have provided some relevant metrics in the table following titled “Plan Maturity Measures and Other Risk Metrics”. Highlights of this information are discussed below:

- The Support Ratio, determined as the ratio of active to inactive members, increased from 111.9% to 117.0% from October 1, 2016 to October 1, 2019, indicating that the number of active participants is growing faster than the number of inactive participants.
- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the liability associated with members who are no longer employed but are due a benefit from the plan, to the Total Accrued Liability, is 61.1%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors may result in larger increases in contribution requirements than would be needed for a less mature plan. Please note Chapter 112, Florida Statutes, requires that the plan sponsor contributes the minimum required contribution; thus, there is minimal solvency risk to the plan.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has increased from 77.0% on October 1, 2016 to 84.2% on October 1, 2019, due to net favorable experience realized by the plan during the period.
- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (contributions minus benefit payments and administrative expenses) to the Market Value of Assets, stayed approximately the same from October 1, 2016 to October 1, 2019. The current Net Cash Flow Ratio of -3.5% indicates that contributions are not currently covering the plan's benefit payments and administrative expenses.

It is important to note that the actuary has identified the risks in this section as the most significant risks based on the characteristics of the plan and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modeling, as well as the identification of additional risks, can be provided at the request of the audience addressed on page 2 of this report.

## PLAN MATURITY MEASURES AND OTHER RISK METRICS

	<u>10/1/2016</u>	<u>10/1/2017</u>	<u>10/1/2018</u>	<u>10/1/2019</u>
<u>Support Ratio</u>				
Total Actives	302	301	310	316
Total Inactives <sup>1</sup>	270	274	277	270
Actives / Inactives <sup>1</sup>	111.9%	109.9%	111.9%	117.0%
<u>Asset Volatility Ratio</u>				
Market Value of Assets (MVA)	51,937,865	56,221,282	59,892,801	59,976,396
Total Annual Payroll	16,216,214	16,199,103	16,959,524	17,146,340
MVA / Total Annual Payroll	320.3%	347.1%	353.2%	349.8%
<u>Accrued Liability (AL) Ratio</u>				
Inactive Accrued Liability	40,760,665	42,449,182	43,460,333	43,302,162
Total Accrued Liability (EAN)	67,903,045	68,455,807	69,529,874	70,898,375
Inactive AL / Total AL	60.0%	62.0%	62.5%	61.1%
<u>Funded Ratio</u>				
Actuarial Value of Assets (AVA)	52,278,036	55,002,953	57,679,493	59,688,433
Total Accrued Liability (EAN)	67,903,045	68,455,807	69,529,874	70,898,375
AVA / Total Accrued Liability (EAN)	77.0%	80.3%	83.0%	84.2%
<u>Net Cash Flow Ratio</u>				
Net Cash Flow <sup>2</sup>	(1,871,228)	(1,944,101)	(2,143,138)	(2,113,074)
Market Value of Assets (MVA)	51,937,865	56,221,282	59,892,801	59,976,396
Ratio	-3.6%	-3.5%	-3.6%	-3.5%

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

<sup>2</sup> Determined as total contributions minus benefit payments and administrative expenses.



STATEMENT OF FIDUCIARY NET POSITION  
SEPTEMBER 30, 2019

<u>ASSETS</u>	COST VALUE	MARKET VALUE
Cash and Cash Equivalents:		
Checking Account	5,445.62	5,445.62
Money Market	1,567,619.00	1,567,619.00
Cash	4.48	4.48
Total Cash and Equivalents	1,573,069.10	1,573,069.10
Receivables:		
Member Contributions in Transit	26,029.46	26,029.46
Total Receivable	26,029.46	26,029.46
Investments:		
Fixed Income	9,997,666.10	10,201,807.09
Equities	32,330,330.06	40,454,898.28
Mutual Funds:		
Fixed Income	745,626.37	741,533.68
Pooled/Common/Commingled Funds:		
Hedge	1,330,000.00	1,546,403.00
Real Estate	4,807,608.99	5,553,646.54
Total Investments	49,211,231.52	58,498,288.59
Total Assets	50,810,330.08	60,097,387.15
<u>LIABILITIES</u>		
Payables:		
Refunds of Member Contributions	8,580.29	8,580.29
Prepaid Member Contribution	384.22	384.22
Prepaid City Contribution	112,026.45	112,026.45
Total Liabilities	120,990.96	120,990.96
NET POSITION RESTRICTED FOR PENSIONS	50,689,339.12	59,976,396.19

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

ADDITIONS

Contributions:

Member	682,207.23
City	2,087,382.49

Total Contributions	2,769,589.72
---------------------	--------------

Investment Income:

Net Realized Gain (Loss)	1,867,812.20
Unrealized Gain (Loss)	(909,066.21)
Net Increase in Fair Value of Investments	958,745.99
Interest & Dividends	1,503,357.42
Less Investment Expense <sup>1</sup>	(265,433.20)

Net Investment Income	2,196,670.21
-----------------------	--------------

Total Additions	4,966,259.93
-----------------	--------------

DEDUCTIONS

Distributions to Members:

Benefit Payments	4,228,676.70
Lump Sum DROP Distributions	0.00
Refunds of Member Contributions	512,603.20

Total Distributions	4,741,279.90
---------------------	--------------

Administrative Expense	141,384.44
------------------------	------------

Total Deductions	4,882,664.34
------------------	--------------

Net Increase in Net Position	83,595.59
------------------------------	-----------

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year	59,892,800.60
-----------------------	---------------

End of the Year	59,976,396.19
-----------------	---------------

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

**ACTUARIAL ASSET VALUATION**  
September 30, 2019

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

Plan Year Ending	Gain/(Loss)	<u>Gains/Losses Not Yet Recognized</u>				
		Amounts Not Yet Recognized by Valuation Year				
		2019	2020	2021	2022	2023
09/30/2015	(3,380,710)	0	0	0	0	0
09/30/2016	277,664	55,532	0	0	0	0
09/30/2017	2,401,361	960,545	480,273	0	0	0
09/30/2018	1,671,960	1,003,176	668,784	334,392	0	0
09/30/2019	(2,164,113)	(1,731,290)	(1,298,467)	(865,644)	(432,821)	0
Total		287,963	(149,410)	(531,252)	(432,821)	0

<u>Development of Investment Gain/(Loss)</u>	
Market Value of Assets, including Prepaid Contributions, 09/30/2018	59,966,864
Contributions Less Benefit Payments & Admin Expenses	(2,074,727)
Expected Investment Earnings*	4,360,783
Actual Net Investment Earnings	2,196,670
2019 Actuarial Investment Gain/(Loss)	<u>(2,164,113)</u>

\*Expected Investment Earnings =  $0.074 * [59,966,864 + 0.5 * (2,074,727)]$

<u>Development of Actuarial Value of Assets</u>	
(1) Market Value of Assets, 09/30/2019	59,976,396
(2) Gain/(Loss) Not Yet Recognized	287,963
(3) Actuarial Value of Assets, 09/30/2019, (1) - (2)	<u>59,688,433</u>
(A) 09/30/2018 Actuarial Assets, including Prepaid Contributions:	57,753,556
(I) Net Investment Income:	
1. Interest and Dividends	1,503,357
2. Realized Gain (Loss)	1,867,812
3. Unrealized Gain (Loss)	(909,066)
4. Change in Actuarial Value	1,925,345
5. Investment Expenses	<u>(265,433)</u>
Total	<u>4,122,015</u>
(B) 09/30/2019 Actuarial Assets, including Prepaid Contributions:	59,800,844
Actuarial Assets Rate of Return = $2I/(A+B-I)$ :	7.27%
Market Value of Assets Rate of Return:	3.66%
Actuarial Gain/(Loss) due to Investment Return (actuarial Asset Basis)	(74,983)
10/01/2019 Limited Actuarial Assets (not including Prepaid):	59,688,433

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

REVENUES

Contributions:		
Member	682,207.23	
City	2,087,382.49	
Total Contributions		2,769,589.72
Earnings from Investments:		
Interest & Dividends	1,503,357.42	
Net Realized Gain (Loss)	1,867,812.20	
Unrealized Gain (Loss)	(909,066.21)	
Change in Actuarial Value	1,925,345.00	
Total Earnings and Investment Gains		4,387,448.41

EXPENDITURES

Distributions to Members:		
Benefit Payments	4,228,676.70	
Lump Sum DROP Distributions	0.00	
Refunds of Member Contributions	512,603.20	
Total Distributions		4,741,279.90
Expenses:		
Investment related <sup>1</sup>	265,433.20	
Administrative	141,384.44	
Total Expenses		406,817.64
Change in Net Assets for the Year		2,008,940.59
Net Assets Beginning of the Year		57,679,492.60
Net Assets End of the Year <sup>2</sup>		59,688,433.19

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

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

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

(1) City Required Contribution Rate	12.22%
(2) Pensionable Payroll Derived from Member Contributions	\$17,081,689.80
(3) City Required Contribution (1) x (2)	2,087,382.49
(4) Less 2018 Prepaid Contribution	(73,901.10)
(5) Less Actual City Contributions	<u>(2,125,507.84)</u>
(6) Equals City's Shortfall/(Prepaid) Contribution as of September 30, 2019	(112,026.45)

## STATISTICAL DATA

	<u>10/1/2016</u>	<u>10/1/2017</u>	<u>10/1/2018</u>	<u>10/1/2019</u>
<u>Actives - Hired before October 1, 2011</u>				
Number	170	149	136	126
Average Current Age	52.4	52.9	53.0	53.9
Average Age at Employment	38.0	37.7	36.7	36.6
Average Past Service	14.5	15.2	16.3	17.3
Average Annual Salary	\$55,939	\$56,865	\$60,100	\$59,789
<u>Actives - Hired after September 30, 2011</u>				
Number	132	152	174	190
Average Current Age	42.9	43.6	43.0	42.6
Average Age at Employment	40.6	40.8	39.9	39.1
Average Past Service	2.3	2.8	3.1	3.5
Average Annual Salary	\$50,807	\$50,831	\$50,494	\$50,594
<u>Service Retirees</u>				
Number	221	228	232	224
Average Current Age	71.1	71.4	71.9	72.0
Average Annual Benefit	\$16,292	\$16,919	\$17,192	\$17,789
<u>DROP Retirees</u>				
Number	0	0	0	0
Average Current Age	N/A	N/A	N/A	N/A
Average Annual Benefit	N/A	N/A	N/A	N/A
<u>Beneficiaries</u>				
Number	21	18	19	22
Average Current Age	71.6	73.3	74.5	76.2
Average Annual Benefit	\$9,115	\$9,969	\$9,870	\$9,433
<u>Disability Retirees</u>				
Number	1	1	1	1
Average Current Age	67.2	68.2	69.2	70.2
Average Annual Benefit	\$10,171	\$10,171	\$10,171	\$10,171
<u>Terminated Vested</u>				
Number	53	77	88	96
Average Current Age	50.5	44.4	51.3	50.3
Average Annual Benefit <sup>1</sup>	\$14,331	\$15,010	\$13,839	\$12,510

<sup>1</sup> The Average Annual Benefit excludes participants awaiting a refund of contributions.

## AGE AND SERVICE DISTRIBUTION

### PAST SERVICE

AGE	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+	Total
15 - 19	0	0	0	0	0	0	0	0	0	0	0	0
20 - 24	12	3	0	0	0	0	0	0	0	0	0	15
25 - 29	3	1	6	1	0	1	0	0	0	0	0	12
30 - 34	4	10	5	3	2	10	3	0	0	0	0	37
35 - 39	2	6	3	2	4	9	6	2	0	0	0	34
40 - 44	5	2	2	2	5	8	3	2	1	0	0	30
45 - 49	4	5	2	0	5	10	9	3	0	0	0	38
50 - 54	4	2	2	6	1	11	6	2	4	3	1	42
55 - 59	2	1	4	3	1	11	16	5	5	3	3	54
60 - 64	2	0	3	1	1	6	2	7	6	4	4	36
65+	0	1	1	0	0	5	7	0	3	0	1	18
Total	38	31	28	18	19	71	52	21	19	10	9	316

## VALUATION PARTICIPANT RECONCILIATION

### 1. Active lives

a. Number in prior valuation 10/1/2018	310
b. Terminations	
i. Vested (partial or full) with deferred annuity	(2)
ii. Vested in refund of member contributions only	(10)
iii. Refund of member contributions or full lump sum distribution received	(18)
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	(1)
d. Disabled	0
e. Retired	(5)
f. DROP	<u>0</u>
g. Continuing participants	274
h. Rehires	2
i. New entrants	<u>40</u>
j. Total active life participants in valuation	316

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

	Service Retirees, Vested Receiving <u>Benefits</u>	DROP <u>Benefits</u>	Receiving Death <u>Benefits</u>	Receiving Disability <u>Benefits</u>	Vested (Deferred Annuity)	Vested (Due Refund)	<u>Total</u>
a. Number prior valuation	232	0	19	1	25	63	340
Retired	8	0	0	0	(3)	0	5
DROP	0	0	0	0	0	0	0
Vested (Deferred Annuity)	0	0	0	0	2	0	2
Vested (Due Refund)	0	0	0	0	0	11	11
Hired/Terminated in Same Year	0	0	0	0	0	5	5
Death, With Survivor	(2)	0	2	0	0	0	0
Death, No Survivor	(14)	0	0	0	0	0	(14)
Disabled	0	0	0	0	0	0	0
Refund of Contributions	0	0	0	0	(1)	(3)	(4)
Rehires	0	0	0	0	0	(2)	(2)
Expired Annuities	0	0	(1)	0	0	0	(1)
Data Corrections	0	0	2	0	(1)	0	1
b. Number current valuation	224	0	22	1	22	74	343



SUMMARY OF CURRENT PLAN  
(Through Ordinance 12-13142)

<u>Eligibility</u>	Full-time General Employees hired prior to 3/1/95 enter the Plan on employment. Those hired after 2/28/95 enter following 6 months of service.
<u>Compensation</u>	Base pay, including holiday, vacation, longevity, and sick pay, but excluding overtime and all other pay.
<u>Final Average Compensation</u>	Average of Compensation paid during the eight (8) highest consecutive years of service. The average cannot be less than the three-year average determined as of September 30, 2011.
<u>Credited Service</u>	Years and completed months of service as a General Employee. Service for which the member received a refund of contributions shall not be counted.
<u>Normal Retirement</u>	
Date	Earlier of 1) the attainment of age 60 and the completion of 5 years of service, or 2) the date when age plus service equals 85 (Rule of 85).  For Members hired after September 30, 2011, the Normal Retirement Date is the earlier of 1) Age 65 with 8 years of Credited Service, or 2) the completion of 33 years of Credited Service, regardless of Age.
Benefit	The sum of the following:  a.) 2.5% of Final Average Compensation (using a three-year average, determined as of September 30, 2011) for each year of Credited Service as of September 30, 2011, plus  b.) 1.6% of Final Average Compensation (using an eight-year average) for Credited Service after September 30, 2011.
Form of Benefit	Life annuity, ceasing upon death (options available).

### Early Retirement

Date	The attainment of age 55 and the completion of 5 years of service. For Members hired after September 30, 2011, the Early Retirement Date is age 55 with 8 years of service.
Benefit	<p>Determined as for Normal Retirement, reduced 3% per year for each year that the Early Retirement Date precedes age 60. The reduction is prorated monthly.</p> <p>For Members hired after September 30, 2011, the reduction is 5% per year, for each year that the Early Retirement Date precedes age 65. The reduction is prorated monthly.</p>

### Termination of Employment

Members hired before  
October 1, 2011

Less Than 5 Years	Return of member contributions with interest.
5 to 10 Years, But Less Than Age 50	Return of member contributions with interest plus an amount equal to the accumulated contributions that would have existed had the member contributed at the rate contributed by the City.
10 or More Years or Upon Attaining Age 50 and 5 Years	Accrued monthly benefit payable at Normal or Early (reduced basis) Retirement Date, or return of member contributions with interest.

Members hired after  
September 30, 2011

Less Than 8 Years	Return of member contributions with interest.
8 or More Years	The accrued benefit, payable at the Normal (unreduced), or Early (reduced) Retirement Date.

### Pre-Retirement Death

Less Than 5 Years and 6 Months	Return of member contributions with interest.
More than 5 Years and 6 Months	Return of member contributions with interest plus an amount equal to the accumulated contributions that would have existed had the member contributed at the rate contributed by the City.

### Deferred Retirement Option Plan

Eligibility	Non-union members who had 30 years of service in June, 2005.
Participation	Not to exceed 84 months.
Rate of Return	Actual net rate of investment return realized by the system from the short term investment fund or money market fund in which the DROP account is invested.
Form of Distribution	Cash lump sum at termination of employment.

### Contributions

Members	5.0% of Compensation. The contribution rate is 3% for Members hired after September 30, 2011.
City	Remaining amount necessary to fund the Normal Cost and amortize the Unfunded Actuarial Accrued Liability over not more than 30 years.

### Board of Trustees

Two Council appointees, three City Manager appointees, one retiree of the Plan elected by the membership, and a seventh Member elected by the other 6 who is a City resident.