



City of Marathon

Firefighters' Pension Plan and Trust Plan

October 1, 2018 | Actuarial Valuation Report

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At the request of the plan sponsor, this report summarizes the City of Marathon Firefighters' Pension Plan and Trust Fund as of October 1, 2018. 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, 2019 through September 30, 2020

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 employer. 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.

The actuarial assumptions and methods were chosen by the Board. 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.

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.

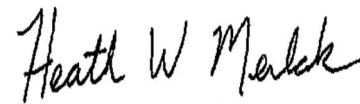
Neither Nyhart nor any of its employees have any relationship with the plan or its sponsor which could impair or appear to impair the objectivity of this report. To the extent that this report or any attachment concerns tax matters, it is not intended to be used and cannot be used by a taxpayer for the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



Lawrence Watts, Jr., FSA, CFA, EA, MAAA
Enrolled Actuary No. 17-8496



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

June 11, 2019
Date

Copies of this Report are to be furnished to the Division of Retirement within 60 days of receipt from the actuary at the following addresses:

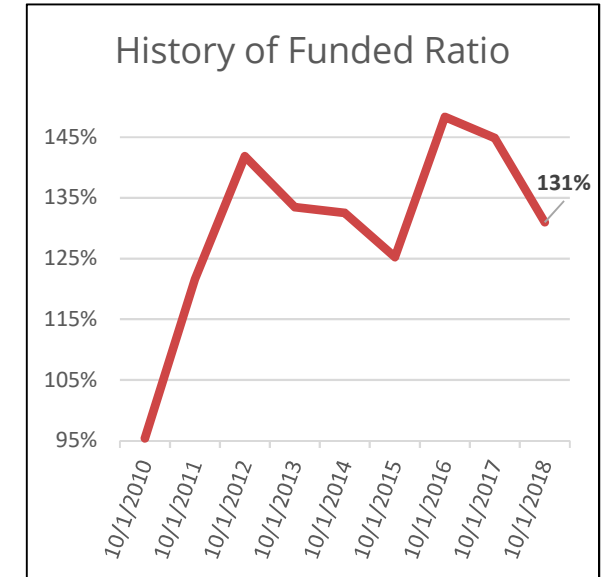
Mr. Steve Bardin
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Firefighters' Trust Funds
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Post Office Box 3010
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Florida Department of Management Services
Division of Retirement
Department of Management Services
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Tallahassee, FL 32315-9000

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 and funded percentage displayed are based on an entry age level percentage of pay for comparison purposes; however, the required contributions and funding concerns are based on the aggregate method.

	October 1, 2017	October 1, 2018
Funded Status Measures		
Accrued Liability	\$5,355,963	\$6,649,946
Actuarial Value of Assets	7,759,986	8,709,048
Unfunded Accrued Liability	(\$2,404,023)	(\$2,059,102)
Funded Percentage (AVA)	144.9%	131.0%
Funded percentage (MVA)	148.2%	133.4%
Cost Measures		
Recommended Contribution For Next Fiscal Year	\$177,313	\$271,823
Recommended Contribution (as a percentage of payroll)	9.7%	13.3%
Asset Performance		
Market Value of Assets (MVA)	\$7,940,100	\$8,874,070
Actuarial Value of Assets (AVA)	\$7,759,986	\$8,709,048
Actuarial Value/Market Value	97.7%	98.1%
Participant Information		
Active Members	27	27
Terminated Vested Members	5	5
Retirees, Beneficiaries, and Disabled Members	1	1
Inactive Due a Refund	1	1
Total	34	34
Expected Payroll	\$1,829,545	\$2,048,704
Total Payroll	\$1,759,178	\$1,969,908



Changes Since Prior Valuation and Key Notes

There have been no plan provision changes since the prior year.

A new collective bargaining agreement was ratified in January of 2018; among other things, this agreement reclassified the length of work weeks for firefighters, affecting amounts of paid overtime and plan compensation. Participant compensation is higher than expected relative to the prior valuation, in part due to this change.

The mortality assumption was updated to reflect pre-retirement mortality in order to be consistent with Chapter 112's requirement to use the Florida Retirement System's mortality tables for special risk members. For valuation purposes, 25% of pre-retirement deaths were assumed to be line-of-duty deaths. This update resulted in a slight decrease to the projected present value of future benefits.

The City should plan to make the following contributions for the fiscal year starting October 1, 2019:

On or Before	Amount ⁽¹⁾
January 1, 2020	\$68,902
April 1, 2020	\$68,902
July 1, 2020	\$68,902
September 30, 2020	\$68,902

⁽¹⁾ These amounts assume that State Premium Tax Revenues received during the fiscal year is at least \$140,288. Any shortage in State Premium Tax Revenues will need to be made up for by additional contributions from the City.

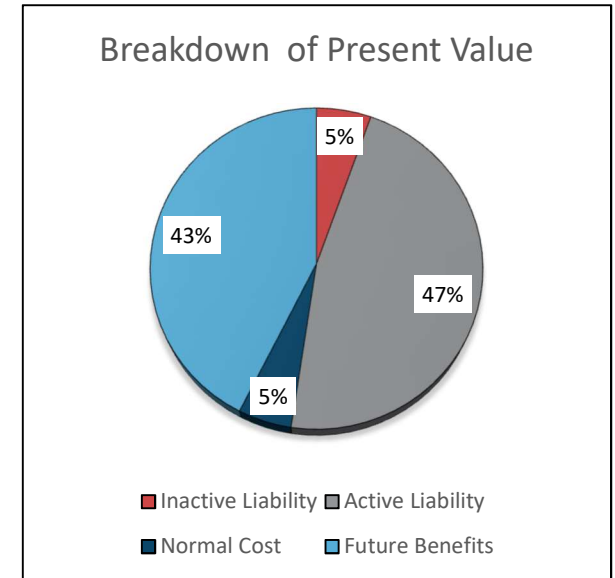
Present Value of Future Benefits

The Present Value of Future Benefits represents the current future benefits payable to the participant.

October 1, 2018

Present Value of Future Benefits

Active members	
Retirement	\$11,942,760
Disability	0
Death	60,073
Termination	0
Refund of contributions	0
Total active	\$12,002,833
Inactive members	
Retired members	\$337,700
DROP members	0
Beneficiaries	0
Disabled members	0
Terminated vested members	356,363
Total inactive	\$694,063
Total	\$12,696,896
Present value of future payrolls	\$18,686,043



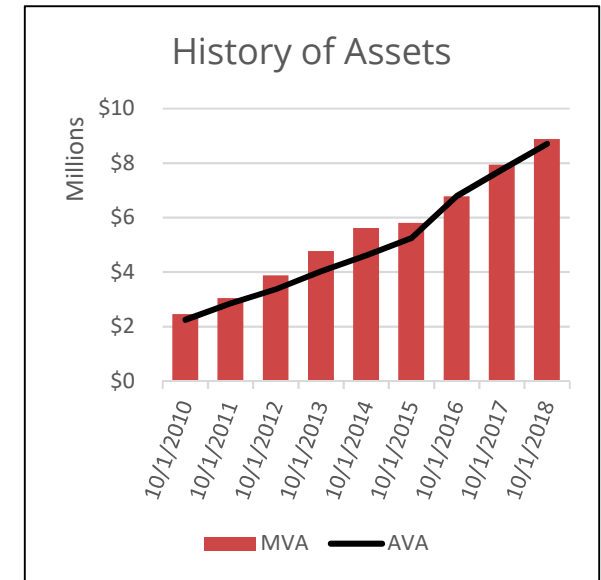
Asset Information

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, 2018

Market Value Reconciliation

Market value of assets, beginning of prior year	\$8,106,009
Employer contributions (incl. discounted accrued items)	157,911
Member contributions	89,805
Non-employer contributions	140,288
Investment income, net expenses	608,666
Benefit payments and refunds	(28,124)
Administrative expenses	(34,576)
Other expenses	0
Market value of assets, beginning of current year	\$9,039,979
Return on Market Value	7.36%
Accumulated Reserve	(\$165,909)
Prepaid Reserve	\$0
Market value of assets available	\$8,874,070
Actuarial value of assets	
Value at beginning of current year	\$8,709,048



Asset Information (continued)

Plan Assets are used to develop funded percentages and contribution requirements

October 1, 2018

1.	Expected Market Value of Assets		
	(a) Market value of assets - beginning of year		\$8,106,009
	(b) Contributions		388,004
	(c) Benefit payments		(28,124)
	(d) Expenses		(34,576)
	(e) Expected Return (7.50%)		614,762
	(f) Expected market value end of year		\$9,046,075
2.	Market value of assets, beginning of current year		\$9,039,979
3.	Amount subject to phase-in ((2)-(1)(f))		(\$6,096)
4.	Phase in of asset gain/(loss)		
	(a) Current year [80% x (\$6,096)]		(\$4,877)
	(b) First prior year [60% x \$404,736]		242,842
	(c) Second prior year [40% x \$36,857]		14,743
	(d) Third prior year [20% x (\$438,430)]		(87,686)
	(e) Total phase-in		\$165,022
5.	Preliminary actuarial value of assets, beginning of current year [(2) - (4e)]		\$8,874,957
6.	80% Market value of assets		\$7,231,984
7.	120% Market value of assets		\$10,847,974
8.	Adjusted actuarial value of assets		\$8,874,957
9.	Reserved assets		(\$165,909)
10.	Final actuarial value of assets [(8) + (9)]		\$8,709,048
11.	Return on actuarial value of assets		7.87%

Reconciliation of Gain/Loss

October 1, 2018

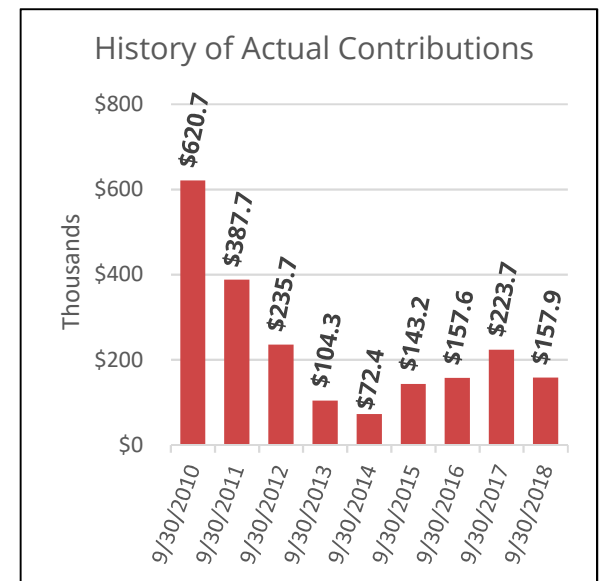
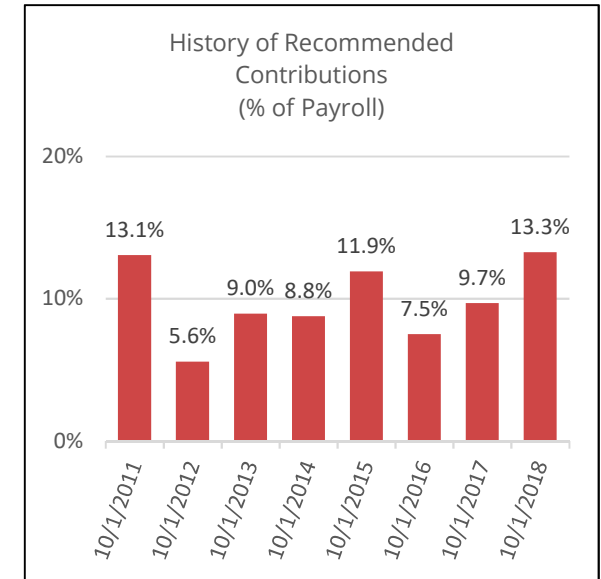
Liability (gain)/loss		
Present value of future benefits		\$11,143,946
Present value of employee contributions		(852,851)
Expected employee contribution		84,835
Benefit payments		(28,124)
Interest		777,159
Expected liability		\$11,124,965
Assumption change		(124,813)
Expected liability with assumption change		\$11,000,152
Actual liability		11,797,057
Liability (gain)/loss		\$796,905
Asset (gain)/loss		
Actuarial value of assets, beginning of prior year		\$7,759,986
Contributions		388,004
Benefit payments and expenses		(62,700)
Expected investment return		593,977
Expected actuarial value of assets, beginning of current year		\$8,679,267
Actual actuarial value of assets, beginning of current year		8,709,048
Asset (gain)/loss		(\$29,781)
Total (gain)/loss		\$767,124

Development of Recommended Contribution

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

October 1, 2018

	October 1, 2018
1. Present value of future benefits	\$12,696,896
2. Actuarial value of assets	8,709,048
3. Present value of future member contributions	899,839
4. Present value of future normal Cost [(1)-(2)-(3)]	\$3,088,009
5. Present value of future payroll	\$18,686,043
6. Normal cost actual rate [(4)/(5)]	16.53%
7. Administrative expenses	\$27,841
8. Expected payroll	\$2,048,704
9. Applicable interest	7.50%
10. Normal cost [(6)x(8)+(7)]	\$366,492
11. Interest to estimated payment date	\$27,487
12. Adjustment for quarterly contributions	\$18,132
Total recommended contribution as of end of year	
13. [(10)+(11)+(12)]	\$412,111
14. Expected State Contribution	\$140,288
15. City recommended contribution [(13)-(14)]	\$271,823
16. As a percentage of expected payroll	13.27%



Demographic Information

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

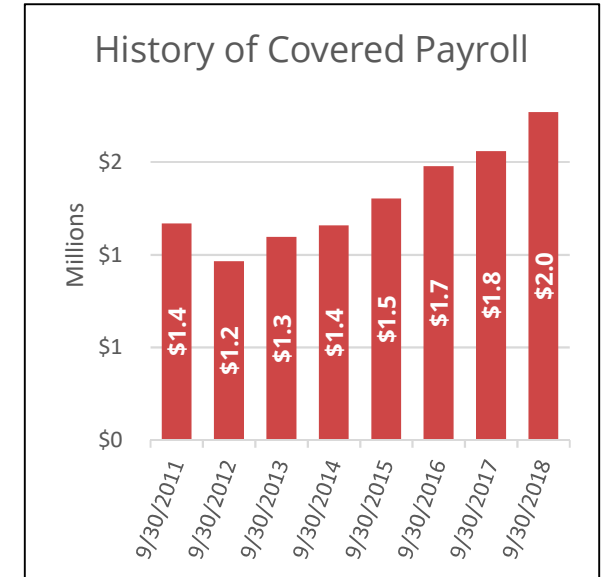
October 1, 2018

Member Counts

Active Members	27
Retired Members	1
Beneficiaries	0
Disabled Members	0
Terminated Vested Members	5
Inactive Members Due A Refund	1
Total	34

Active Participant Demographics

Average Age	37.3
Average Service	6.7
Average Compensation	\$72,960
Payroll	\$1,969,908



Demographic Information (continued)

October 1, 2018

Retired Member Statistics

Average Age	60.0
Average Monthly Benefit	\$1,967

Beneficiary Statistics

Average Age	N/A
Average Monthly Benefit	N/A

Disabled Member Statistics

Average Age	N/A
Average Monthly Benefit	N/A

Terminated Member Statistics

Average Age	39.4
Average Monthly Benefit	\$1,296

Inactive Due A Refund Statistics

Average Age	30.0
Total Refunds Due	\$1,219

Participant Reconciliation

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Totals
Prior Year	27	6	0	1	0	34
Additions	1					1
Departures	(1)					(1)
Current Year	27	61	0	1	0	34

¹ According to the data provided, one of the terminated vested participants is due an employee contribution refund.

Active Participant Schedule

Active participant information grouped based on age and service.

Age Group	Years of Service										Total
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 & Up	
Under 25		1									1
25 to 29	1	2									3
30 to 34		5	3	1							9
35 to 39		2		2							4
40 to 44		1		3	1						5
45 to 49		1		1							2
50 to 54			1	1							2
55 to 59		1									1
60 to 64											0
65 to 69											0
70 & up											0
Total	1	13	4	8	1	0	0	0	0	0	27

Plan Status

Established October 1, 2005

Eligibility for Participation

Any full time firefighter. Fire Chief may elect to participate within 10 days of employment.

Accrual of Benefits

The accrued benefit is determined as 3.50% of Average Final Compensation multiplied by Credited Service as of date of determination.

Benefits

Normal Retirement

Eligibility Attainment of age 55 and 6 Years of Credited Service, or 20 Years of Credited Service.

Benefit Unreduced Accrued Benefit payable immediately.

Early Retirement

Eligibility Attainment of Age 50 and 6 years of Credited Service.

Benefit Accrued Benefit reduced 3% for each year by which the member's early retirement date precedes normal retirement.

Late Retirement

Eligibility Participation continues after Normal Retirement Date.

Benefit Accrued retirement benefit.

Death before Retirement In Line of Duty

Eligibility Death during performance of duties.

Benefit Beneficiary receives a pension equal to 50% of the member's monthly compensation. If member is vested, beneficiary receives not less than Accrued Benefit reduced for timing of receipt.

Death before Retirement Not In Line of Duty

Eligibility	Death not during performance of duties
Benefit	Beneficiary receives the Accrued Benefit payable to the member beginning on the participant's Early or Normal Retirement Date; If not vested, beneficiary receives refund of member's accumulated contributions.

Termination Benefit

Eligibility	Fully vested after completion of 6 years of Credited Service
Benefit	Accrued Benefit payable at the participants Early or Normal Retirement Date. For termination prior to 6 years of credited service, refund of accumulated contributions.

Disability Benefit In Line of Duty

Eligibility	Immediately upon permanent disability
Benefit	Accrued retirement benefit based on Average Compensation and Credited Service at disability or 65% of Average Final Compensation if larger. Reduced by 100% Social Security disability benefit and workers' compensation benefits, not reduced below Average Final Compensation. Benefit terminates upon the earlier of death, recovery, or Normal Retirement eligibility.

Disability Benefit Not In Line of Duty

Eligibility	Completion of 8 years of Credited Service
Benefit	Accrued retirement benefit determined as of disability date offset by 100% of Social Security disability benefits and workers' compensation, but not reduced below 25% of Average Final Compensation. If permanently disabled prior to eligibility, refund of accumulated employee contributions.

Compensation

Compensation	An employee's pay, including pick-up contributions.
Average Final Compensation	Average Compensation during the highest 5 years of credited service, or career average.

Credited Service

For Vesting and Benefit Accrual
Continuous full-time service credited, from most recent date of employment, during which the required Contributions were made. Participant may purchase up to 5 additional years of governmental service, which cannot be used for eligibility or vesting, at full actuarial cost. Purchased service other than military service must be for employment as a firefighter, and the participant must not be eligible to receive benefits from another plan based on such service.

Employee Contributions

5% of Compensation

DROP

Eligibility	Retiree eligible for Normal Retirement
Benefit	Deferred Retirement Option Plan for up to 84 months with 6.5% annual interest credited.

COLA

Eligibility	Participant or Beneficiary
Benefit	1.5% adjustment on October 1

Payment Forms

Normal Form
10 years Certain and Life

Optional Forms
50%, 66 2/3%, 75%, and 100% Joint and Survivor Annuity
Lump Sum

Actuarial Equivalence

7.00%; 1994 Group Annuity Reserving Table projected to 2002 using Scale AA

Plan Provisions Not Included

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

Adjustments 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 the results.

Changes Since Prior Valuation

None

Cost Method (CO)	Aggregate Cost Method
Asset Valuation Method (CO)	<p>20% Phase-In Method: Actuarial value of assets is equal to expected market value adjusted by phase-in of the difference between the expected investment earnings and actual investment earnings at the rate of 20% per year.</p> <p>The result cannot be greater than 120% of market value or less than 80% of market value.</p>
Interest Rates (CO)	<p>7.50% net of investment expenses</p> <p>This assumption has been set by the plan sponsor in conjunction with their asset advisors. Detailed evaluation of this assumption was outside the scope of our engagement.</p>
Annual Pay Increases (FE)	<p>4.00% per annum.</p> <p>The annual pay increases reflect the employers average target increase for a career employee.</p>
Expense and/or Contingency Loading (FE)	2% of the present value of projected benefits
Mortality Rates (CO)	
Pre-Retirement:	RP2000 Generational, Females, 100% Combined Healthy White Collar Scale BB, Males, 10% Combined Healthy White Collar / 90% Combined Healthy Blue Collar, Scale BB 25% of pre-retirement deaths are assumed to be in line-of-duty.
Post-Retirement:	RP2000 Generational, Females, 100% Annuitant White Collar, Scale BB, Males, 10% Annuitant White Collar / 90% Annuitant Blue Collar, Scale BB
Disability	RP2000, Females, 60% Disabled set forward two years, 40% Annuitant White Collar, no projection scale, Males, 60% Disabled setback four years, 40% Annuitant White Collar, no projection scale
Retirement Rates (FE)	<p>100% at Normal Retirement Age (Age 55 and 6 years of credited service) or 20 years of credited service.</p> <p>As the plan is not large enough to have credible experience, retirement rates are based on professional judgement and expectation for the general population adjusted as necessary for the specific provisions of the plan.</p>

Disability Rates (FE)	None assumed Not applicable.
Withdrawal Rates (FE)	None assumed Not applicable.
Marital Status and Ages	100% of Members are assumed to be married. Female spouses assumed to be the same age as male spouses.
State Contributions	Premium tax revenues are assumed to be the same as in prior year.
Withdrawal of Employee Contributions	It is assumed that employees withdraw their contribution balances upon employment termination at the end of the current fiscal year.
DROP Participation	No distinction is made between retirement and DROP entry
Changes Since Prior Report	The mortality rate assumptions were changed in accordance with the Florida Retirement System Valuation report dated October 2016. Preretirement mortality benefits were included in this valuation and 25% of pre-retirement deaths were assumed to be line-of-duty.

FE indicates an assumption representing an estimate of future experience.

MO indicates an assumption representing an observation of estimates inherit to market data.

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

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

- ✓ Statement of Changes on Value of Assets
- ✓ Distribution of Assets
- ✓ Shortage/(Prepaid) Position Development
- ✓ Florida State Requirements
 - Comparative Summary of Principal Valuation Results
 - Comparison of payroll growth, salary increases and investment returns
 - Requirements under Florida Statute 112.664 and F.A.C. 60T-1.0035
 - Reserve amount for benefit improvements under F.L. 99-1

Statement of Changes in Plan Net Assets

	<u>September 30, 2017</u>	<u>September 30, 2018</u>
1. Additions		
(a) Contributions:		
(i) Employer	223,687	157,911
(ii) Member	107,272	89,805
(iii) Non-employer contributing entity	143,010	140,288
(iv) Total	<u>\$473,969</u>	<u>\$388,004</u>
(b) Investment income		
(i) Net increase in fair value of investments	923,539	608,666
(ii) Interest and dividends	0	0
(iii) Investment expense, other than from securities lending	0	0
(iv) Securities lending income	0	0
(v) Securities lending expense	0	0
(vi) Total	<u>\$923,540</u>	<u>\$608,666</u>
(c) Other	\$0	\$0
(d) Total additions [(a)+(b)+(c)]	<u>\$1,397,509</u>	<u>\$996,670</u>
2. Deductions		
(a) Benefit payments, including refunds of member contributions	\$38,480	\$28,124
(b) Administrative expense	31,860	34,576
(c) Other	0	0
(d) Total deductions	<u>\$70,340</u>	<u>\$62,700</u>
3. Net increase [(1d)-(2d)]	\$1,327,169	\$933,970
4. Net assets held in trust for pension benefits, beginning of year	<u>6,612,931</u>	<u>7,940,100</u>
5. Net assets held in trust for pension benefits, end of year [(3)+(4)]	\$7,940,100	\$8,874,070

Distribution of Assets

	September 30, 2017	September 30, 2018
Cash and deposits	\$32,085	\$35,948
Securities lending cash collateral	0	0
Total cash	\$32,085	\$35,948
Receivables		
Contributions	\$84,644	\$53,008
Other	0	0
Total receivables	\$84,644	\$53,008
Investments		
Core Bonds	\$1,259,354	\$1,303,111
Multi-Sector	1,852,935	1,545,759
U.S. Large Cap Equity	3,144,376	2,938,739
U.S. Small Cap Equity	882,350	1,078,437
Non-U.S. Equity	850,265	1,276,150
Real Estate	0	808,827
Total investments	\$7,989,280	\$8,951,023
Payables		
Investment management fees	\$0	\$0
Due to broker for investments purchased	0	0
Collateral payable for securities lending	0	0
Other	0	0
Total liabilities	\$0	\$0
Reserved Assets		
Accumulated Reserve	(\$165,909)	(\$165,909)
Assets available for benefits	\$7,940,100	\$8,874,070

Stabilization Fund Balance Reconciliation

(1) Payroll for FYE 9/30/2018:	\$1,857,443
(2) Target Required Contribution Percentage	12%
(3) Targeted Employer Contribution:	\$222,893
(3) Employer Contributions to Pension Fund	
Quarterly contributions throughout FYE 9/30/2018:	\$155,684
Shortage payment at and/or around 12/31/2018:	2,394
	<hr/>
	\$158,078
(4) Amount required for Stabilization Fund for FYE 9/30/2018:	\$64,815

Note: This calculation reflects figures previously communicated via e-mail in December of 2018.

Shortage/(Prepaid) Position

(1)	<u>Shortage/(Prepaid) Position 9/30/2017:</u>		\$0
(2)	<u>Costs</u>		
	Minimum Required City Contribution (2017/2018) on 10/01/2017:		\$281,865
(3)	<u>Contributions</u>		
	(a) City Contribution Received on 1/22/2018:	\$43,031	
	(b) City Contribution Received on 4/20/2018:	\$38,921	
	(c) City Contribution Received on 7/30/2018:	\$34,811	
	(d) City Contribution Received on 10/26/2018:	\$38,921	
	(e) State Contribution Received on 8/27/2018:	\$135,578	
	(f) State Contribution Received on 9/26/2018 ⁽¹⁾ :	\$4,710	
	Total Contributions, Adjusted with Interest to 10/01/2017:	\$279,678	\$279,678
(4)	<u>Shortage/(Prepaid) Position 10/01/2017 [(1)+(2)-(3)]:</u>		\$2,187
(5)	<u>Shortage/(Prepaid) Position, interest adjusted to 9/30/2018:</u>		\$2,351
(6)	<u>Shortage/(Prepaid) Position, interest adjusted to 12/31/2018 as communicated:</u>		\$2,394

¹This date was later updated to 10/25/2018 after the shortage calculation was finalized. This discrepancy will be considered when we finalize the shortage/prepaid calculation due 12/31/2019.

Other Measurements

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

Comparative Summary Of Principal Valuation Results

	10/1/2018 7.50% (assumption changes)	10/1/2018 7.50% (prior assumptions)	10/1/2017 7.50%
Participant Data			
Active members	27	27	27
Total annual payroll	\$1,969,908	\$1,969,908	\$1,759,178
Retired members and beneficiaries			
Total annualized benefit	1 \$23,597	1 \$23,597	1 \$23,249
Disabled members receiving benefits			
Total annualized benefit	0 \$0	0 \$0	0 \$0
Terminated vested members			
Total annualized benefit	6 \$77,765	6 \$77,765	6 \$77,765
Assets			
Actuarial value of assets	\$8,709,048	\$8,709,048	\$7,759,986
Market value of assets	\$8,874,070	\$8,874,070	\$7,940,100

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

Comparative Summary Of Principal Valuation Results (continued)

	10/1/2018 7.50% (assumption changes)	10/1/2018 7.50% (prior assumptions)	10/1/2017 7.50%
Liabilities, present value of all future expected benefit payments			
Active members			
Retirement benefits	\$11,942,760	\$12,134,849	\$10,477,004
Vesting benefits	0	0	0
Disability benefits	0	0	0
Death benefits	60,073	0	0
Return of contribution	0	0	0
Total	\$12,002,833	\$12,134,849	\$10,477,004
Terminated vested members	\$356,363	\$356,364	\$330,758
Retired members and beneficiaries	\$337,700	\$337,700	\$336,184
Disabled members	\$0	\$0	\$0
Total	\$12,696,896	\$12,828,913	\$11,143,946
Liabilities due and unpaid	\$0	\$0	\$0
Actuarial accrued liability	N/A	N/A	N/A
Unfunded actuarial accrued liability	N/A	N/A	N/A

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

Comparative Summary Of Principal Valuation Results (continued)

	10/1/2018 7.50% (assumption changes)	10/1/2018 7.50% (prior assumptions)	10/1/2017 7.50%
Actuarial present value of accrued benefits			
Statement of actuarial present value of all accrued benefits			
Vested accrued benefits			
Inactive members and beneficiaries	\$694,063	\$694,065	\$666,942
Active members	2,121,055	2,098,946	1,571,855
Total value of all vested accrued benefits	\$2,815,118	\$2,793,011	\$2,238,797
Non-vested accrued benefits	1,595,335	1,618,312	1,335,734
Total actuarial present value of all accrued benefits	\$4,410,453	\$4,411,323	\$3,574,531
Statement of changes in total actuarial present value of all accrued benefits (ASC 960)			
Actuarial present value of accrued benefits, beginning of year	\$3,574,531	\$3,574,531	\$2,855,283
Increase (decrease) during year			
Benefits accumulated	\$597,862	(\$677,363)	\$544,999
Plan amendment	0	0	0
Changes in actuarial assumptions	(870)	0	0
Interest	267,054	267,054	212,729
Benefits paid	(28,124)	(28,124)	(38,480)
Other changes	0	0	0
Net increase (decrease)	\$835,922	(\$438,433)	\$719,248
Actuarial present value of accrued benefits, end of year	\$4,410,453	\$3,136,098	\$3,574,531

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

Comparative Summary Of Principal Valuation Results (continued)

	10/1/2018 7.50%	10/1/2018 7.50%	10/1/2017 7.50%
	(assumption changes)	(prior assumptions)	
Pension cost			
Normal Cost	\$514,546	\$527,336	\$411,800
Member contributions	\$102,435	\$102,435	\$91,477
Expected plan sponsor contribution	\$271,823	\$284,613	\$177,313
As % of payroll	13.27%	13.89%	9.69%
Member Contributions as % of payroll	5.00%	5.00%	5.00%
Past contributions			
Required plan sponsor contribution	9/30/2018 \$130,849		9/30/2017 \$186,183
Required member contribution	\$98,495		\$78,132
Actual contributions made by:			
Plan's sponsor	\$157,911		\$223,687
Members	\$89,805		\$107,272
Other	\$140,288		\$143,010
Other disclosures			
Present value of active member			
Future salaries at attained age	\$18,686,043		\$17,685,100
Future contributions at attained age	\$899,839		\$852,851

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

Historical Salary Increases and Asset Performance¹

Year Ending	Payroll Growth	Salary Growth	Expected Salary Growth	Asset Return (Market)	Asset Return (Actuarial)	Asset Return (Expected)
9/30/2018	11.98%	12.13%	4.00%	7.36%	7.87%	7.50%
9/30/2017	4.92%	9.52%	4.00%	13.21%	8.40%	7.50%
9/30/2016	11.60%	22.94%	4.00%	8.01%	4.34%	7.50%
9/30/2015	10.61%	13.04%	4.00%	(0.18%)	6.08%	7.50%
9/30/2014	4.85%	0.88%	4.00%	8.27%	7.68%	7.50%
9/30/2013	11.27%	7.30%	4.00%	11.62%	9.38%	7.50%
9/30/2012	(14.95%)	(7.00%)	5.00%	16.33%	4.00%	7.50%
9/30/2011	0.29%	0.29%	5.00%	(0.30%)	0.64%	7.50%
9/30/2010	N/A	0.12%	5.00%	7.98%	3.04%	7.50%
9/30/2009	N/A	N/A	5.00%	5.25%	(3.70%)	7.50%
Averages						
3-year				9.50%	6.85%	
5-year				7.25%	6.86%	
10-year	5.07% ²			7.64%	4.70%	

¹ Numbers for years prior to 9/30/2011 are from Southern Actuarial Services.

² This is an average of the eight years listed; a 10-year average will be reported as data becomes available.

City of Marathon Firefighters' Pension Plan and Trust Fund
Actuarial Valuation as of October 1, 2018
Other Measurements

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.003

	Valuation 7.50%	- 200 bp ¹ 5.50%	Funding Rate ¹ 7.50%	October 1, 2018 + 200 bp ¹ 9.50%
Total pension liability				
Service Cost	\$579,233	\$579,233	\$579,233	\$579,233
Interest	451,266	325,662	444,085	562,508
Benefit changes	0	0	0	0
Difference between expected and actual experience	(102,921)	459,446	341,023	222,600
Changes in assumptions	0	2,676,567	(42,234)	(1,780,861)
Benefit payments	(28,124)	(28,124)	(28,124)	(28,124)
Contribution refunds	0	0	0	0
Net change in pension liability	\$899,454	\$4,012,784	\$1,293,983	(\$444,644)
Total pension liability, beginning of year	5,451,703	\$5,355,963	\$5,355,963	\$5,355,963
Total pension liability, end of year	\$6,351,157	\$9,368,747	\$6,649,946	\$4,911,319
Plan fiduciary net position				
Contributions - Employer	\$158,078	\$157,911	\$157,911	\$157,911
Contributions - State	140,288	140,288	140,288	140,288
Contributions - Member	89,805	89,805	89,805	89,805
Net investment income	608,666	608,666	608,666	608,666
Benefit payments	(28,124)	(28,124)	(28,124)	(28,124)
Contribution refunds	0	0	0	0
Administrative expense	(34,743)	(34,576)	(34,576)	(34,576)
Other	0	0	0	0
Net change in plan fiduciary net position	\$933,970	\$933,970	\$933,970	\$933,970
Plan fiduciary net position, beginning of year	7,940,100	\$7,940,100	\$7,940,100	\$7,940,100
Plan fiduciary net position, end of year	\$8,874,070	\$8,874,070	\$8,874,070	\$8,874,070
Net pension liability/(asset)	(\$2,522,913)	\$494,677	(\$2,224,124)	(\$3,962,751)
Funded ratio	139.72%	94.72%	133.45%	180.69%
Years that Assets support expected benefit payments	27	22	27	100
Estimated city contribution				
Annual dollar value	\$284,612	\$1,011,052	\$271,824	\$0
Percentage of payroll	13.89%	49.35%	13.27%	0.00%

¹Based on valuation assumption with the following changes
-interest rate (as noted)

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035

October 1, 2018

Sustainment of Expected Benefit Payments

Mortality Valuation
Interest 7.50%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$8,874,070	\$664,610	\$25,666
2	9,513,014	712,545	25,282
3	10,200,277	763,384	44,449
4	10,919,212	817,260	45,647
5	11,690,825	874,588	60,400
6	12,505,013	927,980	268,754
7	13,164,239	973,646	371,287
8	13,766,598	1,018,603	377,281
9	14,407,920	1,063,019	477,285
10	14,993,654	1,095,655	784,016
11	15,305,293	1,118,272	804,536
12	15,619,029	1,138,041	906,678
13	15,850,392	1,154,950	918,717
14	16,086,625	1,169,517	1,004,279
15	16,251,863	1,180,160	1,051,806
16	16,380,217	1,181,201	1,284,961
17	16,276,457	1,167,696	1,440,397
18	16,003,756	1,142,793	1,561,270
19	15,585,279	1,097,154	1,948,341
20	14,734,092	1,026,396	2,136,232
21	13,624,256	939,547	2,234,331
22	12,329,472	841,699	2,254,405
23	10,916,766	734,866	2,278,293
24	9,373,339	618,443	2,296,392
25	7,695,390	491,328	2,330,840
26	5,855,878	353,142	2,336,894
27	3,872,126	204,070	2,344,777
28	1,731,419		2,354,356

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035

October 1, 2018

Sustainment of Expected Benefit Payments

Mortality FRS Special-Risk Mortality Scale BB Generational
Interest 5.50%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$8,874,070	\$487,377	\$25,666
2	9,335,781	512,782	25,282
3	9,823,281	539,074	44,449
4	10,317,906	566,246	45,647
5	10,838,505	594,479	60,400
6	11,372,584	618,200	268,754
7	11,722,030	634,638	371,287
8	11,985,381	648,960	377,281
9	12,257,060	661,189	477,285
10	12,440,964	662,981	784,016
11	12,319,929	655,767	804,536
12	12,171,160	644,814	906,678
13	11,909,296	630,085	918,717
14	11,620,664	611,888	1,004,279
15	11,228,273	589,017	1,051,806
16	10,765,484	557,238	1,284,961
17	10,037,761	512,996	1,440,397
18	9,110,360	458,710	1,561,270
19	8,007,800	387,567	1,948,341
20	6,447,026	296,626	2,136,232
21	4,607,420	192,786	2,234,331
22	2,565,875	79,957	2,254,405
23	391,427		2,278,293

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035

October 1, 2018

Sustainment of Expected Benefit Payments

Mortality FRS Special-Risk Mortality Scale BB Generational
Interest 7.50%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$8,874,070	\$664,610	\$25,666
2	9,513,014	712,545	25,282
3	10,200,277	763,384	44,449
4	10,919,212	817,260	45,647
5	11,690,825	874,588	60,400
6	12,505,013	927,980	268,754
7	13,164,239	973,646	371,287
8	13,766,598	1,018,603	377,281
9	14,407,920	1,063,019	477,285
10	14,993,654	1,095,655	784,016
11	15,305,293	1,118,272	804,536
12	15,619,029	1,138,041	906,678
13	15,850,392	1,154,950	918,717
14	16,086,625	1,169,517	1,004,279
15	16,251,863	1,180,160	1,051,806
16	16,380,217	1,181,201	1,284,961
17	16,276,457	1,167,696	1,440,397
18	16,003,756	1,142,793	1,561,270
19	15,585,279	1,097,154	1,948,341
20	14,734,092	1,026,396	2,136,232
21	13,624,256	939,547	2,234,331
22	12,329,472	841,699	2,254,405
23	10,916,766	734,866	2,278,293
24	9,373,339	618,443	2,296,392
25	7,695,390	491,328	2,330,840
26	5,855,878	353,142	2,336,894
27	3,872,126	204,070	2,344,777
28	1,731,419		2,354,356

Information to Comply with Florida Statute 112.664 and Florida Administrative Code 60T-1.0035

October 1, 2018

Sustainment of Expected Benefit Payments

Mortality FRS Special-Risk Mortality Scale BB Generational
Interest 9.50%

<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	\$8,874,070	\$841,845	\$25,666	30	\$29,467,963	\$2,690,584	\$2,345,244
2	9,690,249	919,400	25,282	31	29,813,303	2,723,278	2,347,690
3	10,584,367	1,003,451	44,449	32	30,188,891	2,758,718	2,352,886
4	11,543,369	1,094,501	45,647	33	30,594,723	2,797,121	2,356,136
5	12,592,223	1,193,457	60,400	34	31,035,708	2,838,959	2,357,342
6	13,725,280	1,291,425	268,754	35	31,517,325	2,884,756	2,356,393
7	14,747,951	1,383,819	371,287	36	32,045,688	2,935,104	2,353,090
8	15,760,483	1,479,732	377,281	37	32,627,702	2,990,667	2,347,232
9	16,862,934	1,579,822	477,285	38	33,271,137	3,052,188	2,338,746
10	17,965,471	1,670,324	784,016	39	33,984,579	3,120,488	2,327,475
11	18,851,779	1,753,570	804,536	40	34,777,592	3,196,485	2,313,248
12	19,800,813	1,838,987	906,678	41	35,660,829	3,281,199	2,295,865
13	20,733,122	1,926,997	918,717	42	36,646,163	3,375,779	2,274,910
14	21,741,402	2,018,812	1,004,279	43	37,747,032	3,481,521	2,249,916
15	22,755,935	2,112,986	1,051,806	44	38,978,637	3,599,888	2,220,534
16	23,817,115	2,202,975	1,284,961	45	40,357,991	3,732,512	2,186,390
17	24,735,129	2,282,970	1,440,397	46	41,904,113	3,881,223	2,146,963
18	25,577,702	2,357,404	1,561,270	47	43,638,373	4,048,071	2,101,872
19	26,373,836	2,415,068	1,948,341	48	45,584,572	4,235,321	2,051,016
20	26,840,563	2,450,684	2,136,232	49	47,768,877	4,445,444	1,994,711
21	27,155,015	2,476,003	2,234,331	50	50,219,610	4,681,119	1,933,209
22	27,396,687	2,498,030	2,254,405	51	52,967,520	4,945,259	1,866,674
23	27,640,312	2,520,066	2,278,293	52	56,046,105	5,241,025	1,795,577
24	27,882,085	2,542,194	2,296,392	53	59,491,553	5,571,811	1,720,852
25	28,127,887	2,563,946	2,330,840	54	63,342,512	5,941,275	1,642,807
26	28,360,993	2,585,810	2,336,894	55	67,640,980	6,353,425	1,561,046
27	28,609,909	2,609,091	2,344,777	56	72,433,359	6,812,645	1,476,098
28	28,874,223	2,633,756	2,354,356	57	77,769,906	7,323,702	1,388,102
29	29,153,623	2,660,672	2,346,332	58	83,705,506	7,891,810	1,297,069

Reserve Amount for Benefit Improvement Under F.L. 99-1

Adjusted Base Amount at 10/1/2018

<u>Year Established</u>	<u>Description</u>	<u>Ch. 175 Fire</u>	<u>Suppl. Fire</u>	<u>Total</u>
1998	Base Year Premium Tax Distribution	\$ 0	\$ 0	\$ 0
2005	Ordinance 2005-21			195,515
	Adjusted Base Amount			<u>\$ 195,515</u>

Reserve Account for 2017/2018

	<u>Total</u>
1. Reserve Account at September 30, 2018	\$ 165,909
2. Increase in Reserve Account	
(a) Premium Tax Distribution for 2016	140,288
(b) Adjusted Base Amount	195,515
(c) Increase in Reserve Distribution	0
3. Reserve Account at September 30, 2018 [(1)+ (2c)]	\$ 165,909