



City of Marathon

Firefighters' Pension Plan and Trust Plan

October 1, 2017 | 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, 2017. 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, 2018 through September 30, 2019

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.

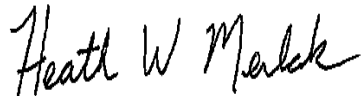
This actuarial valuation and/or cost determination was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable 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



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

June 13, 2018

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:

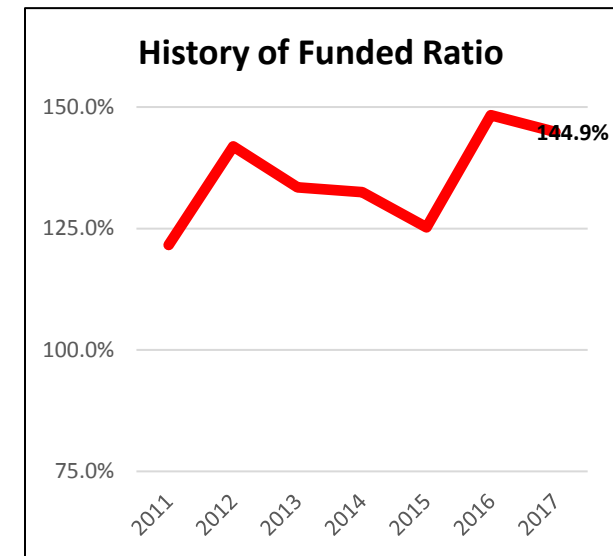
Mr. Steve Bardin
Benefits Administrator
Municipal Police Officers' &
Firefighters' Trust Funds
Division of Retirement
Post Office Box 3010
Tallahassee, FL 32315-3010

Mr. Keith Brinkman
Bureau Chief, Bureau of Local Retirement Systems
Florida Department of Management Services
Division of Retirement
Department of Management Services
P. O. Box 9000
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 is based on an entry age level percentage of pay.

	October 1, 2016	October 1, 2017
Funded Status Measures		
Accrued Liability	\$4,578,544	\$5,355,963
Actuarial Value of Assets	6,790,899	7,759,986
Unfunded Accrued Liability	(\$2,212,355)	(\$2,404,023)
Funded Percentage (AVA)	148.3%	144.9%
Funded percentage (MVA)	144.4%	148.2%
Cost Measures		
Recommended Contribution For Next Fiscal Year	\$130,853	\$177,313
Recommended Contribution (as a percentage of payroll)	7.5%	9.7%
Asset Performance		
Market Value of Assets (MVA)	\$6,612,931	\$7,940,100
Actuarial Value of Assets (AVA)	\$6,790,899	\$7,759,986
Actuarial Value/Market Value	102.7%	97.7%
Participant Information		
Active Members	25	27
Terminated Vested Members	5	5
Retirees, Beneficiaries, and Disabled Members	0	1
Inactive Due a Refund	5	1
Total	35	34
Expected Payroll	\$1,743,822	\$1,829,545
Total Payroll	\$1,676,752	\$1,759,178



Changes Since Prior Valuation and Key Notes

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

When projecting pay forward for the valuation, overtime attributable to Hurricane Irma was excluded.

The City should plan to make the following contributions for the fiscal year starting October 1, 2018:

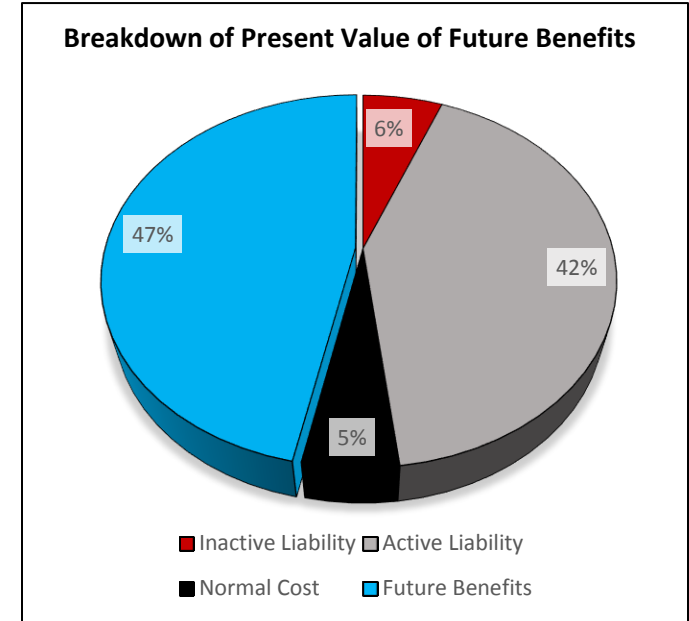
On or Before	Amount ⁽¹⁾
January 1, 2019	\$45,292
April 1, 2019	\$45,292
July 1, 2019	\$45,292
September 30, 2019	\$45,292

⁽¹⁾ These amounts assume that State Premium Tax Revenues received during the fiscal year is at least \$143,011. 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.

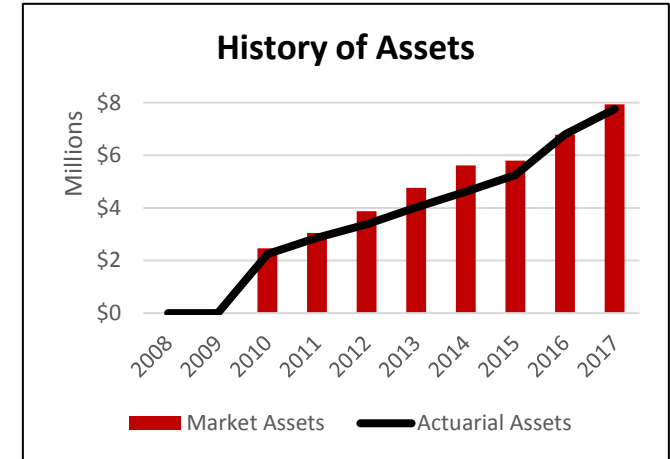
	October 1, 2017
Present Value of Future Benefits	
Active members	
Retirement	\$10,477,004
Disability	0
Death	0
Termination	0
Refund of contributions	0
Total active	\$10,477,004
Inactive members	
Retired members	\$336,184
DROP members	0
Beneficiaries	0
Disabled members	0
Terminated vested members	330,758
Total inactive	\$666,942
Total	\$11,143,946
 Present value of future payrolls	 \$17,685,100



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, 2017
Market Value Reconciliation	
Market value of assets, beginning of prior year	\$6,778,840
Employer contributions (incl. discounted accrued items)	223,687
Member contributions	107,272
Non-employer contributions	143,010
Investment income, net expenses	923,540
Benefit payments and refunds	(38,480)
Administrative expenses	(31,860)
Other expenses	0
Market value of asset, beginning of current year	\$8,106,009
Return on Market Value	13.21%
Accumulated Reserve	(\$165,909)
Prepaid Reserve	\$0
Market value of asset available	\$7,940,100
Actuarial value of assets	
Value at beginning of current year	\$7,759,986



Asset Information (continued)

Plan Assets are used to develop funded percentages and contribution requirements

October 1, 2017

1.	Expected Market Value of Assets		
	(a) Market value of assets - beginning of year		\$6,778,840
	(b) Contributions		473,969
	(c) Benefit payments		(38,480)
	(d) Expenses		(31,860)
	(e) Expected Return (7.50%)		518,804
	(f) Expected market value end of year		\$7,701,273
2.	Market value of assets, beginning of current year		\$8,106,009
3.	Amount subject to phase-in ((2)-(1)(g))		\$404,736
4.	Phase in of asset gain/(loss)		
	(a) Current year [80% x \$404,736]		\$323,789
	(b) First prior year [60% x \$36,857]		22,114
	(c) Second prior year [40% x (\$438,430)]		(175,372)
	(d) Third prior year [20% x \$47,916]		9,583
	(e) Total phase-in		\$180,114
5.	Preliminary actuarial value of assets, beginning of current year [(2) - (4e)]		\$7,925,895
6.	80% Market value of assets		\$6,484,808
7.	120% Market value of assets		\$9,727,210
8.	Adjusted actuarial value of assets		\$7,925,895
9.	Reserved assets		(\$165,909)
10.	Final actuarial value of assets [(8) + (9)]		\$7,759,986
11.	Return on actuarial value of assets		8.40%

Reconciliation of Gain/Loss

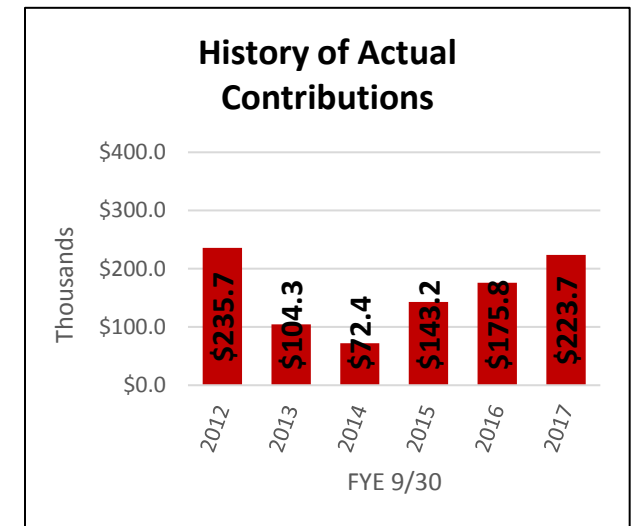
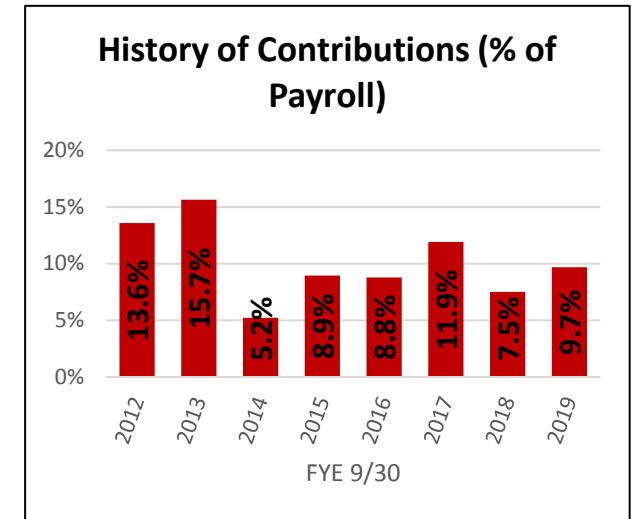
October 1, 2017

Liability (gain)/loss		
Present value of future benefits		\$9,980,632
Present value of employee contributions		(798,876)
Expected employee contribution		77,275
Benefit payments		(38,480)
Interest		693,010
Expected liability		\$9,913,561
Actual liability		\$10,291,095
Liability (gain)/loss		\$377,534
Asset (gain)/loss		
Actuarial value of assets, beginning of prior year		\$6,790,899
Contributions		473,969
Benefit payments and expenses		(70,340)
Expected investment return		524,180
Expected actuarial value of assets, beginning of current year		\$7,718,708
Actual actuarial value of assets, beginning of current year		\$7,759,986
Asset (gain)/loss		(\$41,278)
Total (gain)/loss		\$336,256

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, 2017
1. Present value of future benefits	\$11,143,946
2. Actuarial value of assets	7,759,986
3. Present value of future member contributions	852,851
4. Present value of future normal Cost $[(1)-(2)-(3)]$	\$2,531,109
5. Present value of future payroll	\$17,685,100
6. Normal cost actual rate $[(4)/(5)]$	14.31%
7. Administrative expenses	\$23,057
8. Expected payroll	\$1,829,545
9. Applicable interest	7.50%
10. Normal cost $[(6) \times (8) + (7)]$	\$284,865
11. Interest to estimated payment date	\$21,365
12. Adjustment for quarterly contributions	\$14,094
Total recommended contribution as of end of year	
13. $[(10) + (11) + (12)]$	\$320,324
14. Expected State Contribution	\$143,011
15. City recommended contribution $[(13) - (14)]$	\$177,313
16. As a percentage of expected payroll	9.69%



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.

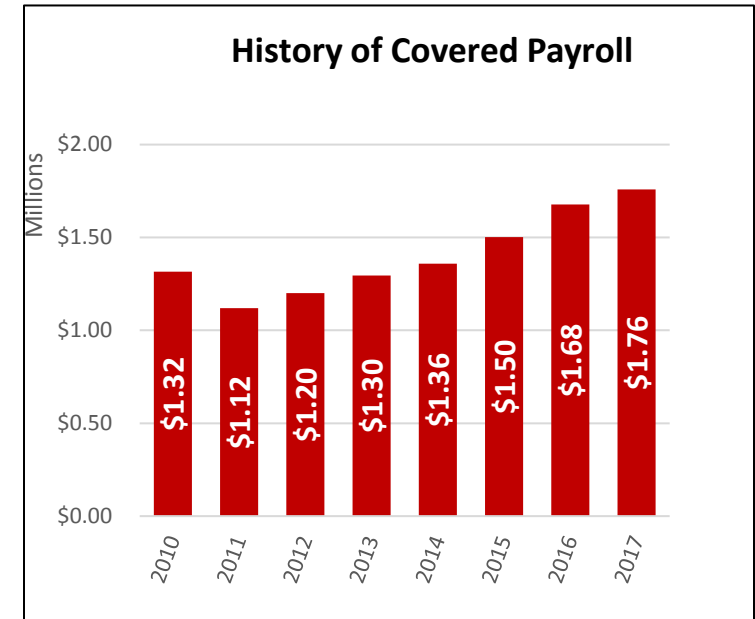
October 1, 2017

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	37.13
Average Service	5.79
Average Compensation	\$65,155
Payroll	\$1,759,178



Demographic Information (continued)

October 1, 2017

Retired Member Statistics

Average Age	59.00
Average Monthly Benefit	\$1,937

Beneficiary Statistics

Average Age	0.00
Average Monthly Benefit	\$0

Disabled Member Statistics

Average Age	0.00
Average Monthly Benefit	\$0

Terminated Member Statistics

Average Age	38.40
Average Monthly Benefit	\$1,296

Inactive Due a Refund Statistics

Average Age	29
Total Refunds Due	\$1,219

Participant Reconciliation

	Active	Terminated Vested	Disabled	Retired	Beneficiaries	Totals
Prior Year	25	10	0	0	0	35
Active						
To Refund		(4)				(4)
To Retired	(1)			1		0
Additions	3					3
Current Year	27	6 ¹	0	1	0	34

¹ 1 of the terminated vested reported 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		3									3
30 to 34	1	5	1	2							9
35 to 39	1	2		1							4
40 to 44		2		5							7
45 to 49				1							1
50 to 54			1								1
55 to 59		1									1
60 to 64											0
65 to 69											0
70 & up											0
Total	3	13	2	9	0	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 employees' pay, including pick-up contributions
Average Final Compensation	Average Compensation during the highest 5 years of credited service

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)

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.

The result cannot be greater than 120% of market value or less than 80% of market value.

Interest Rates (CO)

7.50% net of investment expenses

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.

Annual Pay Increases (FE)

4.00% per annum.

The annual pay increases reflect the employers average target increase for a career employee.

Expense and/or Contingency Loading (FE)

2% of the present value of projected benefits

Mortality Rates (CO)

Healthy
Disabled

Florida Retirement System special risk mortality projected with scale BB generationally
Florida Retirement System disabled mortality projected with scale BB generationally
No pre-retirement mortality is assumed

The mortality table is prescribed by state law.

Retirement Rates (FE)

100% at Normal Retirement Age (Age 55 and 6 years of credited service or 20 years of credited service.

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.

Disability Rates (FE)

None assumed

Not applicable.

Actuarial Assumptions

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	None

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
- ✓ 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, 2016</u>	<u>September 30, 2017</u>
1. Additions		
(a) Contributions:		
(i) Employer	\$157,589	\$223,687
(ii) Member	79,045	107,272
(iii) Nonemployer contributing entity	163,986	143,010
(iv) Total	<u>\$400,620</u>	<u>\$473,969</u>
(b) Investment income		
(i) Net increase in fair value of investments	\$490,850	\$923,540
(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>\$490,850</u>	<u>\$923,540</u>
(c) Other	\$0	\$0
(d) Total additions [(a)+(b)+(c)]	<u>\$891,470</u>	<u>\$1,397,509</u>
2. Deductions		
(a) Benefit payments, including refunds of member contributions	\$50,293	\$38,480
(b) Administrative expense	24,668	31,860
(c) Other	0	0
(d) Total deductions	<u>\$74,961</u>	<u>\$70,340</u>
3. Net increase [(1d)-(2d)]	\$816,509	\$1,327,169
4. Net assets held in trust for pension benefits, beginning of year	<u>5,796,422</u>	<u>6,612,931</u>
5. Net assets held in trust for pension benefits, end of year [(3)+(4)]	\$6,612,931	\$7,940,100

Distribution of Assets

	September 30, 2016	September 30, 2017
Cash and deposits	\$53,604	\$32,085
Securities lending cash collateral	0	0
Total cash	\$53,604	\$32,085
Receivables		
Contributions	\$78,289	\$84,644
Other	0	0
Total receivables	\$78,289	\$84,644
Investments		
Core Bonds	\$1,045,286	\$1,259,354
Multi-Sector	1,594,731	1,852,935
U.S. Large Cap Equity	2,593,114	3,144,376
U.S. Small Cap Equity	757,162	882,350
Non-U.S. Equity	656,654	850,265
Total investments	\$6,646,947	\$7,989,280
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	\$6,612,931	\$7,940,100

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

Comparative Summary Of Principal Valuation Results

	10/1/2017	10/1/2016
	7.50%	7.50%
Participant Data		
Active members	27	25
Total annual payroll	\$1,759,178	\$1,676,752
Retired members and beneficiaries	1	0
Total annualized benefit	\$23,249	\$0
Disabled members receiving benefits	0	0
Total annualized benefit	\$0	\$0
Terminated vested members	6	10
Total annualized benefit	\$77,765	\$77,765
Assets		
Actuarial value of assets	\$7,759,986	\$6,790,899
Market value of assets	\$7,940,100	\$6,612,931

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

Comparative Summary Of Principal Valuation Results (continued)

	10/1/2017 7.50%	10/1/2016 7.50%
Liabilities, present value of all future expected benefit payments		
Active members		
Retirement benefits	\$10,477,004	\$9,655,896
Vesting benefits	0	0
Disability benefits	0	0
Death benefits	0	0
Return of contribution	0	0
Total	\$10,477,004	\$9,655,896
Terminated vested members	\$330,758	\$324,736
Retired members and beneficiaries	\$336,184	\$0
Disabled members	\$0	\$0
Total	\$11,143,946	\$9,980,632
Liabilities due and unpaid	\$0	\$0
Actuarial accrued liability	N/A	N/A
Unfunded actuarial accrued liability	N/A	N/A

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

Comparative Summary Of Principal Valuation Results (continued)

	10/1/2017 7.50%	10/1/2016 7.50%
Actuarial present value of accrued benefits		
Statement of actuarial present value of all accrued benefits		
Vested accrued benefits		
Inactive members and beneficiaries	\$666,942	\$324,736
Active members	1,571,855	1,563,754
Total value of all vested accrued benefits	\$2,238,797	\$1,888,490
Non-vested accrued benefits	1,335,734	0
Total actuarial present value of all accrued benefits	\$3,574,531	\$1,888,490
Statement of changes in total actuarial present value of all accrued benefits (ASC 960)		
Actuarial present value of accrued benefits, beginning of year	\$2,855,283	\$2,456,760
Increase (decrease) during year		
Benefits accumulated	\$544,999	\$203,660
Plan amendment	0	0
Changes in actuarial assumptions	0	62,751
Interest	212,729	182,405
Benefits paid	(38,480)	(50,293)
Other changes	0	0
Net increase (decrease)	\$719,248	\$398,523
Actuarial present value of accrued benefits, end of year	\$3,574,531	\$2,855,283

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

Comparative Summary Of Principal Valuation Results (continued)

	10/1/2017 7.50%	10/1/2016 7.50%
Pension cost		
Normal Cost	\$411,800	\$382,030
Member contributions	\$91,477	\$87,191
Expected plan sponsor contribution	\$177,313	\$130,853
As % of payroll	9.69%	7.50%
Member Contributions as % of payroll	5.00%	5.00%
Past contributions		
Required plan sponsor contribution	9/30/2017 \$186,183	9/30/2016 \$123,894
Required member contribution	\$78,132	\$70,638
Actual contributions made by:		
Plan's sponsor	\$223,687	\$157,589
Members	\$107,272	\$79,045
Other	\$143,010	\$163,986
Other disclosures		
Present value of active member		
Future salaries at attained age	\$17,685,100	\$16,565,847
Future contributions at attained age	\$852,851	\$798,876

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)
9/30/2017	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%
9/30/2008	N/A	13.82%	5.00%	(11.83%)	(2.60%)	8.00%
<u>Averages</u>						
3-year				6.87%	6.26%	
5-year				8.08%	7.16%	
10-year				5.54%	3.64%	

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

City of Marathon Firefighters' Pension Plan and Trust Fund
Actuarial Valuation as of October 1, 2017
Other Measurements

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

	October 1, 2017			
	Valuation 7.50%	- 200 bp ¹ 5.50%	Funding Rate ¹ 7.50%	+ 200 bp ¹ 9.50%
Total pension liability				
Service Cost	\$579,233	\$579,233	\$579,233	\$579,233
Interest	385,416	385,416	385,416	385,416
Benefit changes	0	0	0	0
Difference between expected and actual experience	(148,750)	(148,750)	(148,750)	(148,750)
Changes in assumptions	0	2,241,219	0	(1,426,995)
Benefit payments	(38,480)	(38,480)	(38,480)	(38,480)
Contribution refunds	0	0	0	0
Net change in pension liability	\$777,419	\$3,018,638	\$777,419	(\$649,576)
Total pension liability, beginning of year	4,578,544	\$4,578,544	\$4,578,544	\$4,578,544
Total pension liability, end of year	\$5,355,963	\$7,597,182	\$5,355,963	\$3,928,968
Plan fiduciary net position				
Contributions - Employer	\$223,687	\$223,687	\$223,687	\$223,687
Contributions - State	143,010	143,010	143,010	143,010
Contributions - Member	107,272	107,272	107,272	107,272
Net investment income	923,540	923,540	923,540	923,540
Benefit payments	(38,480)	(38,480)	(38,480)	(38,480)
Contribution refunds	0	0	0	0
Administrative expense	(31,860)	(31,860)	(31,860)	(31,860)
Other	0	0	0	0
Net change in plan fiduciary net position	\$1,327,169	\$1,327,169	\$1,327,169	\$1,327,169
Plan fiduciary net position, beginning of year	6,612,931	\$6,612,931	\$6,612,931	\$6,612,931
Plan fiduciary net position, end of year	\$7,940,100	\$7,940,100	\$7,940,100	\$7,940,100
Net pension liability/(asset)	(\$2,584,137)	(\$342,918)	(\$2,584,137)	(\$4,011,132)
Funded ratio	148.25%	104.51%	148.25%	202.09%
Years that Assets support expected benefit payments	29	23	29	100
Estimated city contribution				
Annual dollar value	\$177,313	\$811,326	\$177,313	\$0
Percentage of payroll	9.69%	44.34%	9.69%	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, 2017

Sustainment of Expected Benefit Payments

Mortality
Interest

Valuation
7.50%

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$7,940,100	\$594,607	\$24,467
2	8,510,240	637,399	23,595
3	9,124,044	683,422	23,945
4	9,783,521	732,206	42,314
5	10,473,413	783,925	42,939
6	11,214,399	838,962	57,524
7	11,995,837	889,911	265,527
8	12,620,221	933,672	348,839
9	13,205,054	977,343	354,038
10	13,828,359	1,020,671	446,916
11	14,402,114	1,052,766	743,912
12	14,710,968	1,074,053	794,906
13	14,990,115	1,091,517	889,179
14	15,192,453	1,106,274	900,544
15	15,398,183	1,118,912	976,368
16	15,540,727	1,127,889	1,022,914
17	15,645,702	1,128,980	1,207,102
18	15,567,580	1,117,468	1,360,622
19	15,324,426	1,092,657	1,539,155
20	14,877,928	1,046,495	1,883,366
21	14,041,057	979,153	2,007,656
22	13,012,554	901,341	2,025,971
23	11,887,924	816,354	2,043,359
24	10,660,919	723,563	2,064,142
25	9,320,340	622,436	2,079,982
26	7,862,794	511,966	2,111,334
27	6,263,426	391,780	2,117,680
28	4,537,526	262,137	2,123,117
29	2,676,546	122,443	2,126,391

<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
30	\$672,598		\$2,115,788

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

October 1, 2017

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	\$7,940,100	\$436,042	\$24,467
2	8,351,675	458,702	23,595
3	8,786,782	482,623	23,945
4	9,245,460	507,352	42,314
5	9,710,498	532,912	42,939
6	10,200,471	559,465	57,524
7	10,702,412	581,428	265,527
8	11,018,313	596,543	348,839
9	11,266,017	610,025	354,038
10	11,522,004	621,585	446,916
11	11,696,673	623,133	743,912
12	11,575,894	615,107	794,906
13	11,396,095	602,660	889,179
14	11,109,576	586,593	900,544
15	10,795,625	567,269	976,368
16	10,386,526	543,505	1,022,914
17	9,907,117	512,140	1,207,102
18	9,212,155	469,752	1,360,622
19	8,321,285	415,910	1,539,155
20	7,198,040	344,793	1,883,366
21	5,659,467	256,799	2,007,656
22	3,908,610	160,005	2,025,971
23	2,042,644	56,905	2,043,359
24	56,190		2,064,142

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

October 1, 2017

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>	<u>Year</u>	<u>Market Value of Assets</u>	<u>Investment Return</u>	<u>Benefit Payments</u>
1	\$7,940,100	\$594,607	\$24,467	30	\$672,598		\$2,115,788
2	8,510,240	637,399	23,595				
3	9,124,044	683,422	23,945				
4	9,783,521	732,206	42,314				
5	10,473,413	783,925	42,939				
6	11,214,399	838,962	57,524				
7	11,995,837	889,911	265,527				
8	12,620,221	933,672	348,839				
9	13,205,054	977,343	354,038				
10	13,828,359	1,020,671	446,916				
11	14,402,114	1,052,766	743,912				
12	14,710,968	1,074,053	794,906				
13	14,990,115	1,091,517	889,179				
14	15,192,453	1,106,274	900,544				
15	15,398,183	1,118,912	976,368				
16	15,540,727	1,127,889	1,022,914				
17	15,645,702	1,128,980	1,207,102				
18	15,567,580	1,117,468	1,360,622				
19	15,324,426	1,092,657	1,539,155				
20	14,877,928	1,046,495	1,883,366				
21	14,041,057	979,153	2,007,656				
22	13,012,554	901,341	2,025,971				
23	11,887,924	816,354	2,043,359				
24	10,660,919	723,563	2,064,142				
25	9,320,340	622,436	2,079,982				
26	7,862,794	511,966	2,111,334				
27	6,263,426	391,780	2,117,680				
28	4,537,526	262,137	2,123,117				
29	2,676,546	122,443	2,126,391				

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

October 1, 2017

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	\$7,940,100	\$753,174	\$24,467	30	\$31,283,927	\$2,873,753	\$2,115,788
2	8,668,807	822,441	23,595	31	32,041,892	2,945,743	2,116,143
3	9,467,653	898,315	23,945	32	32,871,492	3,024,316	2,121,286
4	10,342,023	980,528	42,314	33	33,774,522	3,109,948	2,124,660
5	11,280,237	1,069,629	42,939	34	34,759,810	3,203,481	2,126,152
6	12,306,927	1,166,488	57,524	35	35,837,139	3,305,850	2,125,656
7	13,415,891	1,262,183	265,527	36	37,017,333	3,418,090	2,123,045
8	14,412,547	1,352,998	348,839	37	38,312,378	3,541,347	2,118,139
9	15,416,706	1,448,152	354,038	38	39,735,586	3,676,894	2,110,758
10	16,510,820	1,547,781	446,916	39	41,301,722	3,826,138	2,100,837
11	17,611,685	1,638,576	743,912	40	43,027,023	3,990,625	2,088,255
12	18,506,349	1,721,202	794,906	41	44,929,393	4,172,064	2,072,881
13	19,432,645	1,804,823	889,179	42	47,028,576	4,372,338	2,054,536
14	20,348,289	1,891,282	900,544	43	49,346,378	4,593,538	2,032,817
15	21,339,027	1,981,882	976,368	44	51,907,099	4,837,993	2,007,256
16	22,344,541	2,075,245	1,022,914	45	54,737,836	5,108,293	1,977,527
17	23,396,872	2,166,666	1,207,102	46	57,868,602	5,407,304	1,943,307
18	24,356,436	2,250,698	1,360,622	47	61,332,599	5,738,202	1,904,143
19	25,246,512	2,326,967	1,539,155	48	65,166,658	6,104,500	1,859,713
20	26,034,324	2,385,830	1,883,366	49	69,411,445	6,510,063	1,809,983
21	26,536,788	2,427,794	2,007,656	50	74,111,525	6,959,108	1,755,322
22	26,956,926	2,466,857	2,025,971	51	79,315,311	7,456,221	1,696,023
23	27,397,812	2,507,934	2,043,359	52	85,075,509	8,006,399	1,632,288
24	27,862,387	2,551,104	2,064,142	53	91,449,620	8,615,086	1,564,505
25	28,349,349	2,596,630	2,079,982	54	98,500,201	9,288,187	1,493,508
26	28,865,997	2,644,256	2,111,334	55	106,294,880	10,032,104	1,419,767
27	29,398,919	2,694,589	2,117,680	56	114,907,217	10,853,838	1,343,042
28	29,975,828	2,749,143	2,123,117	57	124,418,013	11,761,041	1,263,839
29	30,601,854	2,808,464	2,126,391	58	134,915,215	12,762,052	1,182,466

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

Adjusted Base Amount at 10/1/2017

<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 2016/2017

	<u>Total</u>
1. Reserve Account at September 30, 2016	\$ 165,909
2. Increase in Reserve Account	
(a) Premium Tax Distribution for 2016	143,010
(b) Adjusted Base Amount	195,515
(c) Increase in Reserve Distribution	0
3. Reserve Account at September 30, 2017 [(1)+ (2c)]	\$ 165,909