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City of Lauderhill

Firefighters' Retirement System

Actuarial Valuation as of October 1, 2017

January 18, 2018

REPORT TO DETERMINE MINIMUM FUNDING REQUIREMENTS
FOR THE PLAN AND FISCAL YEAR
ENDING SEPTEMBER 30, 2018

FLA

FREIMAN LITTLE ACTUARIES

January 18, 2018

Board of Trustees
City of Lauderhill Firefighters' Retirement System
Lauderhill, Florida

RE: Actuarial Valuation as of October 1, 2017

Dear Board Members:

We are pleased to present the actuarial valuation as of October 1, 2017 for the City of Lauderhill Firefighters' Retirement System (the Plan). This report provides a review of the current funded status of the Plan, establishes the minimum funding requirements for the fiscal year ending September 30, 2018 and provides an analysis of experience since the last valuation. In addition to providing the summary and derivation of actuarial findings, this report describes the data, assumptions, and methods used to create these results.

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 or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law.

Statement by Enrolled Actuary:

"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."

We look forward to the presentation of these results to you in person and we are always available to answer any questions you may have.

Sincerely,

Chad M. Little, ASA, EA
Partner, Consulting Actuary
Enrollment Number 17-6619

Paula C. Freiman, ASA, EA
Partner, Consulting Actuary
Enrollment Number 17-5796

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Section 1 Board Summary

This report presents the results of the October 1, 2017 actuarial valuation of the City of Lauderhill Firefighters' Retirement System (the Plan).

Summary of Principal Valuation Results

A summary of the key valuation findings as of October 1, 2017 are compared with the results of the prior valuation below.

Minimum Funding Requirements

Fiscal Year Ending September 30,	**2017**	**2018**
Minimum Required Funding as a Dollar Amount		
Estimated Minimum Required City Contribution	$3,521,059	$3,575,356
Estimated State Contribution	195,829	197,219
Total Minimum Funding Requirement (City plus State)	$3,716,888	$3,772,575
Minimum Required Funding as a % of Payroll		
Estimated Minimum Required City Contribution	45.53%	44.10%
Estimated State Contribution	2.53%	2.43%
Total Minimum Funding Requirement (City plus State)	48.06%	46.53%

Funded Status

Valuation Date October 1,	**2016**	**2017**
Accrued Liability (AL)	$86,941,866	$91,998,042
Actuarial Value of Assets	(70,067,764)	(76,062,075)
Unfunded Accrued Liability (UAL)	$16,874,102	$15,935,967
Funded Percentage	80.59%	82.68%

Key Assumptions

Valuation Date October 1,	**2016**	**2017**
Assumed Net Rate of Investment Return	7.85%	7.85%
Salary Increase Assumption	7.00%	7.00%
Funding Method	Entry Age	Entry Age

Summary of Significant Events

Determinations of the funded status of the Plan and minimum funding requirements are based on participant data, asset information, Plan provisions, actuarial methods and assumptions, as well as contributions made to the Plan by the State of Florida. Any significant events associated with these items are discussed in the following.

In preparing our report we relied, without audit, on information (some oral and some written) supplied by the Plan Administrator. This information includes, but is not limited to, statutory provisions, employee census, and financial information. In our examination of these data, we have found them to be reasonably consistent and comparable with data used for other purposes. Since the valuation results are dependent on the integrity of the data supplied, the results can be expected to differ if the underlying data is incomplete or missing. It should be noted that if any data or other information is inaccurate or incomplete, our calculations may need to be revised.

Participant Data

While the number of active Members decreased from 83 to 82, total payroll increased 7.2%. The following provides a summary of the average actual pay increases for continuing active members, by individual, to the expected pay increases for the 12 month periods ending on the date specified.

Year Ending September 30	Actual	Assumed
2017	7.0 %	7.0 %
2016	4.6 %	7.0 %
2015	2.4 %	7.0 %
2014	3.2 %	7.0 %
2013	4.4 %	7.0 %
2012	7.2 %	7.0 %
2011	4.0 %	7.0 %
2010	0.5 %	7.0 %
2009	11.9 %	7.0 %
2008	9.4 %	7.0 %
2007	16.1 %	7.0 %
2006	7.2 %	7.0 %
2005	6.6 %	7.0 %
2004	7.7 %	7.0 %
2003	5.4 %	7.0 %
2002	4.6 %	7.0 %
2001	11.2 %	7.0 %
2000	8.2 %	7.0 %
1999	8.3 %	7.0 %
1998	9.0 %	7.0 %
20-Yr Avg	6.9 %	7.0 %
10-Yr Avg	5.4 %	7.0 %

Note that although the average individual salary increases were 5.4% over the last ten years they were 6.9% over the last 20 years.

Overall, there was a small demographic gain.

In general, should a pattern of consistent gains or losses develop, assumptions may require revision.

Assets

While the investment return on the Market Value of Assets, net of investment expenses, was 12.88% for the year, the investment return on the Actuarial Value of Assets, net of investment expenses, was 8.13%. These returns are in comparison to the 7.85% assumed rate of return, net of investment expenses, resulting in an actuarial investment gain. The following provides a summary of the actual to the expected return on investments for the 12-month periods ending on the date specified.

	Return on Market Value		Return on Actuarial Value		
Year Ending September 30	**Gross of Investment Expenses**	**Net of Investment Expenses**	**Gross of Investment Expenses**	**Net of Investment Expenses**	**Assumed Return***
2017	13.55 %	12.88 %	8.78 %	8.13 %	7.85 %
2016	10.59 %	9.88 %	8.34 %	7.66 %	8.00 %
2015	(0.05)%	(0.80)%	10.65 %	9.80 %	8.00 %
2014	9.57 %	8.83 %	12.22 %	11.38 %	8.00 %
2013	16.30 %	15.49 %	12.42 %	11.55 %	8.00 %
2012	20.69 %	19.82 %	6.66 %	5.86 %	8.00 %
2011	(0.95)%	(1.65)%	(1.69)%	(2.38)%	8.00 %
2010	10.25 %	9.61 %	2.62 %	2.05 %	8.00 %
2009	(3.67)%	(4.24)%	0.66 %	0.11 %	8.00 %
2008	(12.91)%	(13.49)%	6.11 %	5.38 %	8.00 %
2007	17.71 %	16.99 %	12.88 %	12.10 %	8.00 %
Geometric Average:					
10-Year	5.87 %	5.17 %	6.58 %	5.86 %	
11-Year	6.89 %	6.19 %	7.14 %	6.41 %	

Note that the return on the Market Value of Assets for the years ending in 2007 through 2013 have been revised from those shown in the prior actuarial valuations to include DROP balances in the Market Value of Assets.

*The board of trustees made a decision to revise the assumption used for valuation purposes from 8.0%, gross of investment expenses, as used in the October 1, 2015 actuarial valuation to 7.85%, net of investment expenses, for the October 1, 2016 actuarial valuation of the Plan.

Investment returns less than the assumed rate of return result in increased annual minimum required contributions.

Plan Provisions

Ordinance No. 170-01-103 was adopted February 13, 2017. This ordinance revised (1) the annual funding to the "Supplemental Retirement Benefit Account" from annual premium tax revenues in excess of $167,361 to 50% of annual premium tax revenues, and (2) the Supplemental Benefit to be payable over only the life of the member for individuals who retire on or after October 1, 2016 and who were not eligible to retire until on or after October 1, 2016. This ordinance also established mutual consent between the City and the union that 50% of the annual premium tax revenues are used to fund the Supplemental Benefit (as stated above) and 50% of annual premium tax revenues will be used by the City to reduce it's pension contributions or the unfunded liabilities of the Plan and that the accumulated unused premium tax contributions as of September 30, 2016 are to be used to pay for the Supplemental Benefit. An actuarial impact statement was provided dated February 21, 2017.

Methods and Assumptions

Note that the board of trustees has sole authority to determine the methods and actuarial assumptions used for the valuation.

The only change for the October 1, 2017 actuarial valuation was to the mortality assumption. For the October 1, 2016 actuarial valuation, the mortality table was that used for special risk employees in the valuation of the Florida Retirement System (FRS) as of July 1, 2015, as required by state statute. For the October 1, 2017 actuarial valuation, the mortality table has been revised to that used for special risk employees in the valuation of FRS as of July 1, 2016 and 2017, as required by state statute. While healthy post-retirement mortality and disabled mortality rates were unchanged, healthy pre-retirement was revised. The mortality rates as of October 1, 2017 are as follows:

Healthy mortality (Pre-retirement):

Males: 10% RP-00 Combined Healthy White Collar +
90% RP-00 Combined Healthy Blue Collar

Females: 100% RP-00 Combined Healthy White Collar

Both male and female rates fully generational using Scale BB

Healthy mortality (Post-retirement):

Males: 10% RP-00 Annuitant White Collar +
90% RP-00 Annuitant Blue Collar

Females: 100% RP-00 Annuitant White Collar

Both male and female rates fully generational using Scale BB

Disabled mortality:

Males: 60% RP-00 Disabled Retiree Set Back 4 Years +
40% RP-00 Annuitant White Collar

Females: 60% RP-00 Disabled Retiree Set Forward 2 Yrs +
40% RP-00 Annuitant White Collar

No mortality improvement is assumed for disabled lives.

State Contributions

The Estimated Minimum Required City Contribution shown on page 1 assumes that the premium tax money received from the State for fiscal 2018 will be in the same amount received for fiscal 2017. One-half of the fiscal 2018 premium is shown as applying toward the actuarially determined contribution. Should the amount received for fiscal 2018 be less than expected, the City will need to contribute any potential shortfall to the Plan.

Section 2 Results Derivation

In this section, the assets and liabilities of the Plan are shown in detail. Assets and liabilities are then compared to determine the funded status and minimum funding requirements. Finally, analysis is performed to explain movement in results from the prior valuation.

While asset information is based on the fair market value of assets, along with any techniques used to smooth out market fluctuations, liabilities are determined through a combination of the benefit provisions, participant census data which contains information for the members who will receive those benefits, and the methods and assumptions used with regard to how benefits will be paid to members. A summary of participant data, an outline of the benefit provisions, and a description of the methods and assumptions used in this valuation are described in Section 4.

Financial Information

Over the life of the Plan, the majority of assets are typically generated from investment return. In this section, we describe how the assets of the Plan are invested, show how the actuarial value of assets is derived, and review the investment results since the prior valuation.

Investment Allocation

Valuation Date October 1,	**2016**		**2017**	
Equities	$41,836,456	60 %	$49,949,771	63 %
Fixed Income	12,732,358	18 %	13,041,267	17 %
Real Estate Fund	11,297,030	16 %	12,141,834	15 %
Cash & Cash Equivalents	2,684,172	4 %	2,178,381	3 %
Receivables	1,046,702	2 %	1,479,446	2 %
Fair Market Value of Assets	$69,596,718	100 %	$78,790,699	100 %

Reconciliation of Market Value of Assets

Year ending September 30,			2016	2017
1.	Market value at beginning of year		$63,881,885	$69,596,718
2.	Contributions			
	a.	City	$3,822,621	$3,521,811
	b.	State	391,657	394,437
	c.	Employee contributions	986,417	1,065,791
	d.	Total contributions	$5,200,695	$4,982,039
3.	Investment earnings			
	a.	Realized gains and losses	$1,819,756	$1,859,023
	b.	Unrealized gains and losses	4,027,826	6,615,723
	c.	Interest and dividends	862,747	940,420
	d.	Investment expense	(423,980)	(434,554)
	e.	Net investment income	$6,286,349	$8,980,612
4.	Deductions			
	a.	Benefits paid	$(5,500,238)	$(4,512,657)
	b.	Refunds of contributions	(52,793)	(35,787)
	c.	Administrative expenses	(219,180)	(220,226)
	d.	Total deductions	$(5,772,211)	$(4,768,670)
5.	Net increase		$5,714,833	$9,193,981
6.	Market value of assets end of year		$69,596,718	$78,790,699

Development of Historical Gain or Loss on Market Value of Assets

Year ending September 30,			2015	2016
1.	Market value of assets BOY		$62,842,972	$63,881,885
2.	Expected interest on beginning value		5,027,438	5,110,551
3.	Contributions			
	a.	City	$4,064,434	$3,822,621
	b.	State	485,663	391,657
	c.	Employee contributions	972,711	986,417
	d.	Total Contributions	$5,522,808	$5,200,695
4.	Pension benefits		$(3,799,605)	$(5,553,031)
5.	Expenses			
	a.	Investment expenses	$(478,123)	$(423,980)
	b.	Administrative expenses	(176,928)	(219,180)
	c.	Total expenses	$(655,051)	$(643,160)
6.	Interest on items (3), (4) and (5)		23,300	(55,486)
7.	Expected assets at end of year		$68,961,862	$67,941,454
8.	Market value of assets EOY		$63,881,885	$69,596,718
9.	Gain (Loss) = (8) - (7)		$(5,079,977)	$1,655,264

Year ending September 30,			2017
1.	Market value of assets BOY		$69,596,718
2.	Contributions		
	a.	City	$3,521,811
	b.	State	394,437
	c.	Employee contributions	1,065,791
	d.	Total Contributions	$4,982,039
3.	Pension benefits + administrative expense		(4,768,670)
4.	Net assumed return		5,456,235
5.	Expected assets at end of year		$75,266,322
6.	Market value of assets EOY		$78,790,699
7.	Gain (Loss) = (6) - (5)		$3,524,377

Development of Actuarial Value of Assets

1.	Market Value of Assets as of 9/30/2017				$78,790,699
2.	Phase-In Gains (Losses) Over Four Year Period				
			Original Gain (Loss)	Percent Unrecognized	Unrecognized Gain (Loss)
	a.	Year Ending 9/30/2017	$3,524,377	75 %	$2,643,283
	b.	Year Ending 9/30/2016	1,655,264	50 %	827,632
	c.	Year Ending 9/30/2015	(5,079,977)	25 %	(1,269,994)
	d.	Total			$2,200,921
3.	Preliminary Actuarial Value of Assets as of 9/30/2017 = 1. - 2.d.				$76,589,778
4.	Corridor Around Market Value				
	a.	Minimum = 80% of Market Value of Assets			$63,032,559
	b.	Maximum = 120% of Market Value of Assets			$94,548,839
	c.	Corridor Adjustment to Preliminary Actuarial Value			$0
5.	Cumulative Balance of State Monies Available for Benefit Improvement				$527,703
6.	Actuarial Value of Assets as of 9/30/2017 = 3. + 4.c. - 5.				$76,062,075

Historical Asset Values

	Market Value of Assets		
Year Ending September 30	Including DROP	Reported by Auditor	Actuarial Value of Assets
2017	$78,790,699	$78,790,699	$76,062,075
2016	69,596,718	69,596,718	70,067,764
2015	63,881,885	63,881,885	65,524,026
2014	62,842,972	62,842,972	58,163,473
2013	56,334,474	55,236,797	49,705,303
2012	47,216,351	46,265,563	43,060,519
2011	39,163,277	37,433,460	39,620,622
2010	38,762,351	37,462,362	39,963,208
2009	35,818,770	33,196,711	38,262,703
2008	35,819,095	33,760,557	37,424,773
2007	39,411,245	37,685,174	34,195,441

Note: Beginning with the year ending 9/30/2014 DROP balances are included in the Market Value of Assets reported by the auditor. Prior to that year asset values excluded the DROP balances.

Historical Rates of Investment Return

	Return on Market Value		Return on Actuarial Value		
Year Ending September 30	Gross of Investment Expenses	Net of Investment Expenses	Gross of Investment Expenses	Net of Investment Expenses	Assumed Return*
2017	13.55 %	12.88 %	8.78 %	8.13 %	7.85 %
2016	10.59 %	9.88 %	8.34 %	7.66 %	8.00 %
2015	(0.05)%	(0.80)%	10.65 %	9.80 %	8.00 %
2014	9.57 %	8.83 %	12.22 %	11.38 %	8.00 %
2013	16.30 %	15.49 %	12.42 %	11.55 %	8.00 %
2012	20.69 %	19.82 %	6.66 %	5.86 %	8.00 %
2011	(0.95)%	(1.65)%	(1.69)%	(2.38)%	8.00 %
2010	10.25 %	9.61 %	2.62 %	2.05 %	8.00 %
2009	(3.67)%	(4.24)%	0.66 %	0.11 %	8.00 %
2008	(12.91)%	(13.49)%	6.11 %	5.38 %	8.00 %
2007	17.71 %	16.99 %	12.88 %	12.10 %	8.00 %
Geometric Average:					
10-Year	5.87 %	5.17 %	6.58 %	5.86 %	
11-Year	6.89 %	6.19 %	7.14 %	6.41 %	

Note that the return on the Market Value of Assets for the years ending in 2007 through 2013 have been revised from those shown in the prior actuarial valuations to include DROP balances in the Market Value of Assets.

*The board of trustees made a decision to revise the assumption used for valuation purposes from 8.0%, gross of investment expenses, as used in the October 1, 2015 actuarial valuation to 7.85%, net of investment expenses, for the October 1, 2016 actuarial valuation of the Plan.

Derivation of State Contribution Funding Reserves

Year Ending September 30	State Contributions Regular	Supplemental	Total
2017	$394,437	$0	$394,437
2016	391,657	0	391,657
2015	485,663	0	485,663
2014	492,840	0	492,840
2013	472,633	0	472,633
2012	440,960	0	440,960
2011	403,937	0	403,937
2010	407,979	0	407,979
2009	459,295	0	459,295
2008	360,239	60,369	420,608
2007	378,553	5,537	384,090
2006	250,977	0	250,977
2005	244,943	0	244,943
2004	228,714	0	228,714
2003	203,319	0	203,319
2002	134,534	0	134,534
2001	118,403	0	118,403
2000	132,060	0	132,060
1999	137,229	0	137,229
1998	137,869	0	137,869
			$6,342,147

Year Ending September 30	Recognized State Funding: Actuarially Determined Annual Funding	Supplemental Benefit	Recognized State Funding	Cumulative Balance Available for Benefit Improvement
2017	$197,218	$268,422	$465,640	$527,703
2016	167,361	338,414	505,775	598,906
2015	167,361	357,454	524,815	713,024
2014	167,361	345,399	512,760	752,176
2013	167,361	358,282	525,643	772,096
2012	167,361	314,896	482,257	825,106
2011	167,361	232,272	399,633	866,403
2010	167,361	171,041	338,402	862,099
2009	167,361	93,670	261,031	792,522
2008	167,361	63,528	230,889	594,258
2007	167,361	34,741	202,102	404,539
2006	167,361	0	167,361	222,551
2005	167,361	0	167,361	138,935
2004	167,361	0	167,361	61,353
2003	203,319	0	203,319	0
2002	134,534	0	134,534	0
2001	118,403	0	118,403	0
2000	132,060	0	132,060	0
1999	137,229	0	137,229	0
1998	137,869	0	137,869	0
	$3,236,325	$2,578,119	$5,814,444	

Present Value of Benefits

Valuation as of October 1,			2016	2017
1.	Active Members			
	a.	Service Retirement	$52,973,528	$57,406,543
	b.	Deferred Benefits	1,466,241	1,455,929
	c.	Survivor Benefits	635,290	286,379
	d.	Disability Benefits	1,938,478	2,011,067
	e.	Total	$57,013,537	$61,159,918
2.	Inactive Members			
	a.	Retirement (Including DROP)	$46,391,057	$46,725,124
	b.	Terminated Vested	0	189,926
	c.	Beneficiaries	3,921,895	4,325,362
	d.	Disability Retirement	1,999,557	1,910,734
	e.	Total	$52,312,509	$53,151,146
3.	Accumulated Tier 2 Multiplier Purchase Contributions with Interest		$31,560	$50,099
4.	All Members		$109,357,606	$114,361,163

Accrued Liability

Valuation as of October 1,		2016	2017
1.	Active Members		
a.	Service Retirement	$33,777,822	$38,035,693
b.	Deferred Benefits	61,512	48,982
c.	Survivor Benefits	190,306	92,210
d.	Disability Benefits	568,157	619,912
e.	Total	$34,597,797	$38,796,797
2.	Inactive Members		
a.	Retirement (Including DROP)	$46,391,057	$46,725,124
b.	Terminated Vested	0	189,926
c.	Beneficiaries	3,921,895	4,325,362
d.	Disability Retirement	1,999,557	1,910,734
e.	Total	$52,312,509	$53,151,146
3.	Accumulated Tier 2 Multiplier Purchase Contributions with Interest	$31,560	$50,099
4.	All Members	$86,941,866	$91,998,042

Normal Cost

Valuation as of October 1,		2016	2017
1.	**Preliminary Normal Cost**		
a.	Service Retirement	$2,231,724	$2,379,118
b.	Deferred Benefits	166,521	175,457
c.	Survivor Benefits	53,482	24,532
d.	Disability Benefits	167,346	177,550
e.	Total	$2,619,073	$2,756,657
2.	**Total Normal Cost**		
a.	Preliminary Normal Cost	$2,619,073	$2,756,657
b.	Expense Load	219,180	220,226
c.	Total Normal Cost	$2,838,253	$2,976,883
d.	Total Normal Cost as a % of Pay	36.7%	36.7%
3.	**Actual Employer Normal Cost**		
a.	Preliminary Normal Cost	$2,619,073	
b.	Actual Administrative Expense	220,226	
c.	Actual Employee Contributions	(1,065,791)	
d.	Actual Employer Normal Cost	$1,773,508	
4.	**Payroll**		
a.	Payroll Expected in Funding Year	$7,515,399	$7,884,407
b.	Annualized Payroll in Funding Year	$7,733,774	$8,107,203

Unfunded Accrued Liability

Derivation of Unfunded Accrued Liability (UAL)

Unfunded Accrued Liability as of October 1,			**2017**
1.	Actuarial Accrued Liability		$91,998,042
2.	Actuarial Value of Assets		76,062,075
3.	Unfunded Accrued Liability		$15,935,967
Determination of Expected Unfunded Accrued Liability			
1.	Unfunded Accrued Liability for Prior Year		$16,874,102
2.	Employer Normal Cost (Including Administrative Expense)		1,773,508
3.	Interest for a full year on (1) and (2)		1,463,837
4.	Contributions for this Period		
	a.	State contributions toward minimum funding	$197,218
	b.	State contributions used for supplemental benefits	268,422
	c.	City	3,521,811
	d.	Total	$3,987,451
5.	Interest on Contribution for Time on Deposit		138,231
6.	Plan change - supplemental benefits		268,422
7.	Other changes in plan, methods or assumptions		224,755
8.	Expected Unfunded Accrued Liability		$16,478,942
Calculation of (Gain) or Loss			
1.	Actual Unfunded Accrued Liability		$15,935,967
2.	Expected Unfunded Accrued Liability		16,478,942
3.	Total (Gain) or Loss		$(542,975)
4.	Breakdown of (Gain) or Loss		
	a.	Portion of (Gain) / Loss Due to Investments	$(216,526)
	b.	Portion of (Gain) / Loss Due to Demographic Experience	(326,449)
	c.	Total (Gain) or Loss	$(542,975)
Determination of Actuarial Asset Gain (Loss)			
1.	Actuarial Value of Assets - Beginning of Year		$70,067,764
2.	Contributions		
	a.	City	$3,521,811
	b.	State	465,640
	c.	Employee contributions	1,065,791
	d.	Total contributions	$5,053,242
3.	Benefit Payments + Administrative Expenses		(4,768,670)
4.	Expected Return on Assets		5,493,213
5.	Expected Actuarial Value at End of Year		$75,845,549
6.	Actuarial Value of Assets - End of Year		$76,062,075
7.	Gain (Loss) for Plan Year = (6) - (5)		$216,526
8.	Actual Investment Income		$5,709,739
9.	Actual % Return		8.13 %

Amortization of Unfunded Liability

The Unfunded Accrued Liability is being amortized in a level dollar amount based on the 7.85% net assumed investment return assumption. Changes in the Unfunded Accrued Liability due to Plan changes, assumption changes, method changes, or gains and losses are all amortized over a 25-year period effective October 1, 2016. Prior to this change there was a 30-year amortization period.

Amortization Bases

	10/1	Source	Original Balance	Remaining Balance	Adjusted Remaining Balance	Years Remain	Amort Payment
1.	1997	Funding Method	$1,388,294	$535,510	$532,685	5	$123,215
2.	1998	Plan Amendment	2,280,896	1,487,957	1,480,104	11	190,840
3.	2001	(Gain)/Loss	693,992	522,538	519,780	14	57,950
4.	2002	(Gain)/Loss	2,590,283	2,024,489	2,013,804	15	216,153
5.	2003	(Gain)/Loss	351,479	284,041	282,542	16	29,314
6.	2003	Plan Amendment	1,954,593	1,579,580	1,571,243	16	163,018
7.	2004	(Gain)/Loss	754,262	607,953	604,744	17	60,858
8.	2005	(Gain)/Loss	(51,468)	(42,633)	(42,408)	18	(4,152)
9.	2005	Software Change	(370,516)	(306,914)	(305,294)	18	(29,891)
10.	2006	(Gain)/Loss	(866,092)	(735,371)	(731,490)	19	(69,864)
11.	2006	Plan Amendment	5,295,975	4,496,646	4,472,913	19	427,204
12.	2007	(Gain)/Loss	6,078	5,281	5,253	20	491
13.	2008	(Gain)/Loss	1,229,709	1,095,578	1,089,796	21	99,719
14.	2009	(Gain)/Loss	4,331,045	3,956,777	3,935,893	22	353,526
15.	2010	(Gain)/Loss	1,092,000	1,016,669	1,011,303	23	89,315
16.	2010	Method Change	(131,558)	(122,482)	(121,836)	23	(10,760)
17.	2011	Plan Amendment	(114,527)	(107,392)	(106,825)	24	(9,290)
18.	2011	(Gain)/Loss	4,025,679	3,774,905	3,754,981	24	326,555
19.	2012	(Gain)/Loss	1,168,892	1,113,279	1,107,403	25	94,960
20.	2012	Assumption Change	2,128,355	2,027,094	2,016,395	25	172,906
21.	2013	(Gain)/Loss	(2,265,872)	(2,189,343)	(2,177,788)	26	(184,355)
22.	2013	Assumption Change	89,691	86,661	86,204	26	7,297
23.	2014	(Gain)/Loss	(2,740,798)	(2,676,491)	(2,662,365)	27	(222,733)
24.	2014	Assumption Change	96,389	94,127	93,630	27	7,833
25.	2015	(Gain)/Loss	(3,292,562)	(3,231,788)	(3,214,731)	28	(266,051)
26.	2015	Assumption Change	101,056	99,191	98,667	28	8,166
27.	2016	(Gain)/Loss	(988,580)	(974,758)	(969,613)	24	(84,323)
28.	2016	Assumption Change	1,946,542	1,919,327	1,909,197	24	166,035
29.	2017	(Gain)/Loss	(542,975)	(542,975)	(542,975)	25	(46,560)
30.	2017	Assumption Change	224,755	224,755	224,755	25	19,273
				$16,022,211	$15,935,967		$1,686,649

Projected Unfunded Accrued Liability and Amortization Payments

Year Beginning October 1,	Outstanding Bases	Amortization Payment
2017	$15,935,967	$1,686,649
2018	15,367,889	1,686,651
2019	14,755,216	1,686,646
2020	14,094,452	1,686,655
2021	13,381,809	1,686,647
2022	12,613,233	1,563,439
2023	11,917,203	1,563,431
2024	11,166,543	1,563,439
2025	10,356,947	1,563,428
2026	9,483,811	1,563,437
2027	8,542,123	1,563,428
2028	7,526,522	1,372,599
2029	6,637,006	1,372,588
2030	5,677,675	1,372,593
2031	4,643,031	1,314,638
2032	3,589,672	1,098,492
2033	2,686,738	906,149
2034	1,920,365	845,296
2035	1,159,462	879,342
2036	302,110	522,000
2037	(237,151)	521,508
2038	(818,214)	421,788
2039	(1,337,342)	68,266
2040	(1,515,948)	(10,293)
2041	(1,623,849)	(409,265)
2042	(1,309,929)	(649,846)
2043	(711,901)	(472,785)
2044	(257,886)	(257,886)
2045	0	0

Actions Taken to Reduce Unfunded Actuarial Accrued Liability

The required contributions calculated each year include a payment for the amortization of the unfunded actuarial accrued liability. This payment is designed to reduce the unfunded actuarial accrued liability in an orderly fashion over the next 28 years.

Minimum Funding Requirements

Year Ending September 30,		2017	2018
1.	Total Normal Cost	$2,838,253	$2,976,883
2.	Amortization of UAL	1,723,031	1,686,649
3.	Interest	186,717	190,784
4.	Total Minimum Required Contribution	$4,748,001	$4,854,316
5.	Expected City Minimum Required Funding	$3,521,059	$3,575,356
6.	State Funding Expected	195,829	197,219
7.	Employee Contributions Expected*	1,031,113	1,081,741
8.	Total Minimum Required Contribution	$4,748,001	$4,854,316
9.	City Funding as a % of Pay	45.53 %	44.10 %
10.	State Funding Expected as a % of Pay	2.53 %	2.43 %
11.	Employee Contributions as a % of Pay	13.33 %	13.34 %
12.	Total Required Funding as a % of Pay	61.39 %	59.87 %
13.	City Plus State Funding	$3,716,888	$3,772,575
14.	City Plus State Funding as a % of Pay	48.06 %	46.53 %
15.	Payroll		
	a. Payroll Expected in Funding Year	$7,515,399	$7,884,407
	b. Annualized Payroll in Funding Year	7,733,774	8,107,203
16.	Net Assumed Return on Investments	7.85 %	7.85 %

*Employee contributions expected are those based on payroll expected in the funding year which takes into account the expected decrement of members during the year.

Reconciliations

Reconciliation of Funded Status

As of Prior Valuation		**80.59 %**
Changes in Funded Status due to:		
Normal Operation of Plan	1.76 %	
Investment Experience	0.24 %	
Demographic Experience	0.29 %	
Required Mortality Change	(0.20)%	
Total Changes	2.09 %	
As of Current Valuation		**82.68 %**

Reconciliation of City Minimum Funding Requirement

As of Prior Valuation		**$3,521,059**
Changes in Required Contribution due to:		
Expected Change	$98,210	
Change in Expense Load	1,087	
Change in Expected State $	(1,335)	
Investment Experience	(19,296)	
Demographic Experience	(63,467)	
Required Mortality Change	39,098	
Total Changes	$54,297	
As of Current Valuation		**$3,575,356**

Section 3 Accounting Information

Information Required by GASB 67/68

A supplemental report provides information under the Governmental Accounting Standards Board No. 67/68.

Statement of Accumulated Plan Benefits (FASB 35)

The following table is based on prior accounting standards and is required by the State. The present value of accrued benefits is an estimate of the liability for all benefits accrued to date.

Year Beginning October 1,	2016	2017
1. Actuarial present value of accumulated plan benefits		
a. Participants currently receiving benefits	$52,312,509	$52,961,220
b. Other participants	21,301,047	25,768,998
c. Total vested plan benefits	$73,613,556	$78,730,218
d. Total non-vested plan benefits	3,290,457	2,304,153
e. Total accumulated plan benefits	$76,904,013	$81,034,371
2. Change in present value of accumulated plan benefits		
a. Accumulated plan benefits beginning of year		$76,904,013
b. Increase (decrease) during year due to:		
i. Plan amendment		$0
ii. Change in assumptions or methods		51,468
iii. Benefits paid		(4,548,444)
iv. Other (including increase for interest due to decrease in the discount period and benefits accumulated)		8,627,334
v. Net increase (decrease)		$4,130,358
c. Accumulated plan benefits end of year		$81,034,371

Other Disclosures Required by the State of Florida

Year Beginning October 1,	2016	2017
Present value of active member:		
Future salaries (attained age)	$66,556,640	$66,712,133
Future contributions (attained age)	9,131,571	9,152,905

Required Disclosure Under F.S. 112.664(1)

As required under F.S. Section 112.664(1) we have produced the following information:

(a) Total pension liability calculated based on mortality used in one of the last two Florida Retirement System (FRS) valuations. This actuarial valuation assumes mortality as used in the July 1, 2016 and 2017 actuarial valuation for special risk members of FRS.

(b) Total pension liability calculated using an assumed interest rate that is 200 basis points lower than that assumed in the valuation of the Plan.

(c) Determination of the number of months or years for which the current market value of assets is adequate to sustain the payment of expected retirement benefits.

(d) Recommended contribution to the Plan using the most recent valuation and the contributions necessary prepared pursuant to (a) and (b) stated as a dollar amount and % of payroll.

	2% Decrease (5.85%)	Current Discount Rate (7.85%)	2% Increase (9.85%)
Total pension liability	$118,410,634	$92,525,745	$74,864,719
Plan fiduciary net position	(78,790,699)	(78,790,699)	(78,790,699)
Net pension liability	$39,619,935	$13,735,046	$(3,925,980)
Plan fiduciary net position as a percentage of the total pension liability	66.54%	85.16%	105.24%
Years of benefit payments:			
Expected for current members:	99	99	99
Paid for with current assets:	15.18	18.44	26.21
City Plus State Contribution Requirement, Plus Expected Employee Contributions			
Dollar Amount	$8,087,035	$4,854,316	$2,328,369
Percent of Payroll	99.75%	59.87%	28.71%

Note: Exhibits in Section 2 of this report entitled 'Present Value of Benefits' and 'Accrued Liability' exclude the cumulative balance of State monies available for benefit improvement. The total pension liability shown above includes the cumulative balance of State monies available for benefit improvement totaling $527,703.

Required Disclosure Under F.S. 112.664(2)(b)2.

F.S. Section 112.664(2)(b)2. - For the previous five years, beginning with 2013, a side-by-side comparison of the plan's assumed rate of return compared to the actual rate of return, as well as the percentages of cash, equity, bond and alternative investments in the plan portfolio.

Year Ending September 30,	**2017**	**2016**	**2015**	**2014**	**2013**
Assumed rate of return					
Net of Investment Expense	7.85%				
Gross of Investment Expense		8.00%	8.00%	8.00%	8.00%
Actual rate of return					
Net of Investment Expense	12.9%				
Gross of Investment Expense		10.6%	(0.1%)	9.6%	16.7%
Percentages of assets in:					
Cash	3%	4%	6%	5%	7%
Equity	63%	60%	60%	62%	67%
Bond	17%	18%	16%	16%	17%
Alternative	17%	18%	18%	17%	9%
Total	100%	100%	100%	100%	100%

Section 4 Supplementary Information

Summary of Participant Data

Member Statistics

Year Beginning October 1,	2016	2017
Active Participants		
Number	83	82
Average Age	38.0	38.9
Average Credited Service	10.4	11.0
Percent Male	92.8	91.5
Average Valuation Salary	$87,082	$92,400
Total Valuation Salary (Prior to Impute)	$7,227,826	$7,576,825
Total Valuation Salary (Imputed to Next Year)	$7,733,774	$8,107,203
Payroll Expected in Funding Year	$7,515,399	$7,884,407
Accumulated Employee Contributions With Interest	$11,380,528	$12,558,585
Multiplier Purchase Contributions With Interest	$31,560	$50,099
Terminated With Rights to Deferred Benefits		
Number	0	1
Average Age	0.0	31.3
Percent Male	0.0	100.0
Average Monthly Benefit	$0	$2,258
DROP		
Number	4	4
Average Age	53.7	55.0
Percent Male	100.0	100.0
Average Monthly Benefit	$6,087	$5,953
DROP Balances	$751,144	$623,597

Member Statistics (Continued)

Year Beginning October 1,	**2016**	**2017**
Service Retirements		
Number	60	60
Average Age	60.1	60.9
Percent Male	96.7	96.7
Average Monthly Benefit	$4,620	$4,740
Beneficiaries		
Number	5	6
Average Age	59.9	61.8
Percent Male	0.0	0.0
Average Monthly Benefit	$5,124	$4,798
Disability Retirements		
Number	6	5
Average Age	55.9	51.7
Percent Male	83.3	80.0
Average Monthly Benefit	$2,575	$2,816
Total In Payment Status		
Number	71	71
Average Age	59.7	60.3
Percent Male	88.7	87.3
Average Monthly Benefit	$4,482	$4,609

Number of Active Members by Age and Service as of October 1, 2017

	Service								
Age	<1	<5	<10	<15	<20	<25	<30	<36	Total
<25	1								1
<30	1	4	5						10
<35	1	4	4	5					14
<40	1	3	6	10	2				22
<45				10	7	1			18
<50		1	1	2	4	1			9
<55				3	1	2		1	7
<60				1					1
<65									
Total	4	12	16	31	14	4		1	82

Active Valuation Pay by Age and Service as of October 1, 2017

	Service								
Age	<1	<5	<10	<15	<20	<25	<30	<36	Total
<25	59,583								59,583
<30	56,477	72,544	87,544						78,437
<35	63,994	75,413	85,734	94,209					84,259
<40	56,477	67,897	92,581	92,015	132,692				90,963
<45				102,761	113,872	119,221			107,996
<50		69,889	90,047	96,042	94,916	90,004			91,299
<55				92,837	103,219	98,240		118,174	99,483
<60				90,047					90,047
<65									
Total	59,133	72,117	89,137	96,111	110,384	101,426		118,174	92,400

Reconciliation of DROP Accounts

Year Ending September 30,	**2016**	**2017**
DROP Balances as of Beginning of Year	1,852,418.60	751,144.06
Additions	483,393.01	276,942.88
Investment Return	72,004.95	37,663.70
Distributions	1,656,672.50	442,153.53
DROP Balances as of End of Year	751,144.06	623,597.11

Reconciliation of Plan Participants

	Active	Deferred	DROP	Retiree	Survivor	Disabled	Totals
As of October 1, 2013	**84**	**0**	**8**	**54**	**3**	**3**	**152**
Active							
To Retiree	(1)			1			0
To DROP Participant	(1)		1				0
To Disabled Retiree	(2)					2	0
To Death With Survivor	(1)				1		0
To Nonvested Term	(1)						(1)
DROP Participant							
To Retiree			(2)	2			0
New Hires	8						8
As of October 1, 2014	**86**	**0**	**7**	**57**	**4**	**5**	**159**
Active							
To DROP Participant	(1)		1				0
To Disabled Retiree	(1)					1	0
To Nonvested Term	(2)						(2)
Retiree							
To Survivor				(1)	1		0
No Survivor				(1)			(1)
New Hires	1						1
As of October 1, 2015	**83**	**0**	**8**	**55**	**5**	**6**	**157**
Active							
To DROP Participant	(1)		1				0
To Nonvested Term	(1)						(1)
DROP							
To Retiree			(5)	5	0	0	0
New Hires	2	0	0	0	0	0	2
As of October 1, 2016	**83**	**0**	**4**	**60**	**5**	**6**	**158**
Active							
To DROP Participant	(1)		1				0
To Nonvested Term	(4)						(4)
To Vested Term	(1)	1					0
DROP							
To Retiree			(1)	1			0
Retiree Death With Survivor				(1)	1		0
Disabled Death						(1)	(1)
New Hires	5						5
As of October 1, 2017	**82**	**1**	**4**	**60**	**6**	**5**	**158**

Outline of Plan Provisions

Plan Type: Single-employer Defined Benefit Pension Plan

Legal Authority: The Plan was established and is amended by local ordinance.

Effective Date: July 1, 1977. The Plan was most recently amended effective February 13, 2017 with Ordinance No. 170-01-103.

Plan Administrator: The Board of Trustees

Board Composition: Two members are elected from among the fire employees of the City, who are members of the plan, two city residents appointed by the Commission and one person is chosen by a majority of the previous four members.

Plan Year: The 12-month period from October 1st to the following September 30th.

Funding Requirements: Employer contributions are actuarially determined and subject to State statute. Employee contributions are as described below and may be amended by ordinance.

Premium Tax Revenues: State insurance premium tax revenues remitted annually to the City which are collected on casualty insurance policies in the City in accordance with Florida Statutes (F.S.) Chapter 175. Commencing October 1, 2016 the City and union mutually consent that 50% of the Premium Tax Revenues received by the City are used to reduce its pension contributions or the UAL (whichever the City prefers), and 50% used to fund the "Supplemental Retirement Benefit Account."

Member: Firefighters become Members immediately upon hire (after medical examination and the firefighter acceptance of the terms and conditions which may include a declaration of ineligibility for disability benefits, designation of a Beneficiary and authorization for Employee Contribution deductions). Employees hired prior to October 1, 2009 are part of Tier One. Employees hired on or after October 1, 2009 are part of Tier Two.

Actuarial Equivalence: Actuarial Equivalence is determined using an interest rate of 7.0% and the 1971 Group Annuity Mortality Table for males.

Credited Service: Years and completed months of service (omitting intervening years and fractional parts of years when not employed as a full-time firefighter by the City) for which Employee Contributions are not withdrawn. Credited Service may be granted for an authorized leave of absence (not more than 6 months) and military leave (not more than 5 years assuming the member returns to service within one year).

Vesting: 100% upon earning ten years of Credited Service.

Earnings: Fixed monthly remuneration paid by the City to a firefighter, excluding overtime, bonuses and any other non-regular payment.

Employee Contributions: Effective October 1, 1997, 13.72% of Earnings.

Accumulated Contributions means a member's own contributions and contributions picked up on behalf of a Member, plus interest compounded annually. All benefits payable under this system are in lieu of a refund of Accumulated Contributions. In any event, each Member is granted the payment of benefits at least equal to Accumulated Contributions with interest.

A Member who terminates non-vested is entitled to a refund of accumulated Employee Contributions with interest.

Vested Members who terminate employment prior to being eligible to receive an annuity may leave their Accumulated Contributions in the fund, and begin commencement of the Accrued Benefit as early as age 50 as defined under the Early Retirement Benefit.

Contributions may be repaid with interest within 90 days after reemployment in order to maintain prior Credited Service.

Average Monthly Earnings: Effective October 1, 2003, for Tier One Members, 1/12 of the average of annual Earnings for the three highest consecutive years of the last ten full years immediately preceding the actual retirement or termination date. The Average Monthly Earnings for Tier Two Members who retire with 25 or more years of Credited Service is computed in the same manner. The Average Monthly Earnings for Tier Two Members who retire with less than 25 years of Credited service is 1/12 of the average annual Earnings for the four highest consecutive years of the last ten full years immediately preceding the actual retirement or termination date.

Normal Retirement Date: Effective October 1, 1998, the first day of the month coincident with or next following the earliest of (i) age 55 and completion of 10 years of Credited Service, or (ii) 20 years Credited Service, regardless of age.

Normal Retirement Benefit: The Accrued Benefit.

Accrued Benefit: Effective for Members retiring on or after October 1, 2003 who are part of Tier One:

3.0% x Average Monthly Earnings x Credited Service Prior to 10/1/2003

Plus

4.0% x Average Monthly Earnings x Credited Service on or After 10/1/2003

The Tier Two Accrued Benefit is 3.0% x Average Monthly Earnings x Credited Service, limited to not more than 75% of Average Monthly Earnings. Tier Two members may increase their pension multiplier to 3.5% provided all costs associated with such an increase (or its actuarially equivalent cost) are borne solely by the Tier Two Member as determined by the Plan actuary. Tier Two members who increase their pension multiplier to 3.5% are not subject to the 75% cap. In no circumstance should a Tier Two Member's total benefit exceed 100% of Average Monthly Earnings.

This benefit is payable as a 10 year certain and continuous annuity.

Early Retirement Date: The first day of the month coincident with or next following the attainment of age 50 and the completion of 10 years of Credited Service.

Early Retirement Benefit: The Accrued Benefit reduced by 3% per year by which the commencement of benefits precedes the Normal Retirement Date.

Delayed Retirement Date: A date following the Normal Retirement Date upon which a Member actually retires.

Delayed Retirement Benefit: On the first day of any month coincident with or next following the Delayed Retirement Date, the benefit payable is computed as described under the Normal Retirement Benefit based on Average Monthly Earnings and Credited Service as of the Delayed Retirement Date.

Cost-of-Living Adjustment (COLA): Effective October 1, 2006, for Tier One Members, a 1.5% annual COLA is payable after three years of retirement (for both then current and future retirees).

Tier Two Members' monthly retirement benefits are increased annually after three years of retirement by the net investment return of the Plan. However, the Tier Two COLA is not less than 0% and not more than 1.5% annually.

Following the death of the retiree, the COLA is paid to each beneficiary.

Variable Benefit: For all firefighters employed on or after October 1, 1997, a Variable Benefit will be paid, effective October 1, 1999. Effective each October 1, a benefit increase of no more than 3% may be granted which is funded solely based on the investment return of the system and only in such amount as exceeds both (1) the investment return assumed for purpose of the actuarial valuation and (2) the total experience gains as compared to actuarial assumptions. Members who retired during the prior fiscal year are provided a prorata increase reflecting the number of payments they received divided by 12.

Supplemental Benefit: This type of benefit and the payment of such benefit shall be determined by negotiations between the City and the union.

The Supplemental Benefit will be paid only to eligible persons who retired on or after October 1, 2000. The first Supplemental Benefit is paid effective October 1, 2003, if funding is available.

The "Supplemental Retirement Benefit Account" is annually funded with 75% of the prior year's actuarial gain remaining after the application of payment of the Variable Benefit plus

- prior to October 1, 2016, with any increase in State contributions over that received for fiscal 1997 in the amount of $167,361 after all minimum benefits are paid; and
- effective October 1, 2016, 50% of annual Premium Tax Revenues.

In practice, the Supplemental Benefit payable in the year from October 1, 2016 to September 30, 2017 was based on the Supplemental Retirement Benefit Account balance on October 1, 2016 determined using the funding described in the first bullet, above. The Supplemental Benefit payable in the year from October 1, 2017 to September 30, 2018 was based on the Supplemental Retirement Benefit Account balance on October 1, 2017 determined using the funding described in the second bullet, above.

The Supplemental Benefit is re-determined each October 1 in an amount equal to the Supplemental Retirement Benefit Account divided by the total number of retirees and vested participants. Payments are made on a monthly basis. In no event will the Supplemental Benefits paid to a retiree exceed one year's payment of individual retiree health insurance provided by the City for the previous year ending September 30.

All funds not distributed to retirees remain in the Supplemental Retirement Benefit Account to be used for additional future benefits to eligible retirees and their eligible designated beneficiaries. The accumulated balance of Premium Tax Revenues received prior to 2016 are used to fund benefits payable from the Supplemental Retirement Benefit Account. Note that as Supplemental Benefits are paid, the the accumulated balance of Premium Tax Revenues is reduced.

The Supplemental Benefit is paid to the beneficiaries of eligible retirees if the retiree was retired or eligible to retire as of September 30, 2016. For all other individuals who retired on or after October 1, 2016 and who were not eligible to retire until on or after October 1, 2016, the Supplemental Benefit terminates upon death.

Participants in the DROP do not receive the Supplemental Benefit until commencement of retirement benefits after the end of the DROP.

Disability Retirement: Members become eligible for service incurred disability benefits immediately upon Plan entry. Members become eligible for non-service incurred disability benefits upon earning 2 years of Credited Service.

The benefit payable to any Member who is wholly prevented either mentally or physically from rendering useful and efficient service as a firefighter is the greater of (i) 50% of the rate of monthly Earnings in effect on the date of disability and (ii) the Accrued Benefit. Total benefits paid (including workers compensation for example) shall not exceed 100% of the employee's salary.

The Average Final Compensation used in the calculation of the Accrued Benefit is the average taken over the period of actual employment if employed fewer than five years.

This benefit is payable as a 10 year certain and continuous annuity.

Members may be required to undergo a reexamination annually to confirm continued existence of the disability condition. In the event of recovery from disability, the period of time while disabled is included as Credited Service in future retirement benefits for (i) those who are immediately reemployed as a firefighter upon recovery, and (ii) those who are not immediately reemployed as a firefighter because they were not offered a position. Members who are offered reemployment and do not accept are treated as if they terminated employment on the date of disability.

At age fifty-five (55), the firefighter shall have the option of converting the disability to a normal retirement benefit, provided eligibility requirements are met.

Death Benefits: For purposes of death benefits, the date of death is treated as being the end of the calendar month in which the member dies.

In the event of service incurred death, the benefit payable is the amount greater in value between a monthly benefit equal to 20% of the rate of monthly Earnings at the time of death or a refund of contributions with interest. The monthly benefit is payable to the Spouse until the death of the Spouse. If there is no Spouse or upon the death of the Spouse, the monthly benefit is divided equally among the Member's surviving children under the age of 18 until the youngest child reaches the age of 18. If there is no Spouse and the value of a refund of contributions with interest is greater than the value of the monthly benefit, the refund of contributions with interest is divided equally amongst surviving children under the age of 18. The Member may choose one or more persons other than their spouse and children under the age of 18 to receive the refund of contributions with interest. If there is no designated beneficiary, no Spouse and no children under the age of 18, the refund of contributions with interest is payable to the Member's estate.

In the event of service incurred death of a firefighter who had earned at least 10 years of Credited Service at the time of their death, the beneficiary may instead elect to receive the Accrued Benefit payable as a 10-year certain only annuity commencing when the Member would have reached their Normal Retirement Date, or with reduction for early commencement as defined for an early retirement benefit payable at the Early Retirement Date.

In the event of non-service incurred death of an active Member who has attained their Normal Retirement Date or the Early Retirement Date, a death benefit is payable to the Member's Spouse as if the Member retired from employment on the date of death, elected to receive a benefit in the form of a 50% joint and survivor annuity, and died the next day. Upon the death of the surviving Spouse, this monthly benefit is divided equally among the Member's surviving children under the age of 18 until the youngest child reaches the age of 18. If at the time of death there is no Spouse, the monthly benefit is payable in the form of a 10 year certain and continuous annuity where the monthly benefit is divided equally among the Member's surviving children under the age of 18 until the youngest child reaches the age of 18. However, at the election of the Spouse or children (for a Member who did not designate a beneficiary other than their Spouse or children), a firefighter who has continued employment beyond his Normal Retirement Date and has made an election as to the form of benefit desired upon retirement prior to death, the monthly benefit will be paid in the form of benefit chosen by the Member as if the Member retired on the day of death. For Members who designated a beneficiary other than their Spouse or children, the designated beneficiary is entitled to receive the Accrued Benefit payable as a 10-year certain only annuity commencing when the Member would have reached their Normal Retirement Date, or with reduction for early commencement as defined for an early retirement benefit payable at the Early Retirement Date.

In the event of non-service incurred death of an active Member who is not eligible for Normal Retirement or Early Retirement, and the Member earned less than 10 years of Credited Service at the time of death, a refund of employee contributions with interest is payable. For Members who had earned at least 10 years of Credited Service at the time of their death, the designated beneficiary is entitled to receive the Accrued Benefit payable as a 10-year certain only annuity commencing when the Member would have reached their Normal Retirement Date, or with reduction for early commencement as defined for an early retirement benefit payable at the Early Retirement Date.

<u>Optional Forms of Benefit:</u> The Accrued Benefit described above is payable in the form of a 10 year certain and continuous annuity (except as noted to be a 10-year certain only annuity under certain death benefits). Members may optionally choose an actuarially equivalent single life annuity, joint and survivor annuity (based on a fraction designated by the Member), a joint and last survivor annuity (with 50%, 66 2/3%, 75%, or 100% continuance), or joint and survivor annuity with an optional "pop-up" to the single life annuity form in the event the beneficiary predeceases the Member. Members may also choose benefits to be paid in any form approved by the board so long as actuarial equivalence with the benefit otherwise payable is maintained. The value of optional benefits shall be actuarially equivalent to the value of benefits otherwise payable, and the present value of payments to the retiring Member must be at least equal to 50% of the total present value of payments to the retiring Member and his beneficiary.

<u>Deferred Retirement Option Plan (DROP):</u> Effective October 1, 2003, Tier One Members are eligible to enter the DROP on the first day of the month following the Member's completion of 20 years of Credited Service or upon earning a pension benefit equal to 80%. The maximum participation in the DROP is 60 months. For Tier One Members who enter the DROP more than 90 days after attaining the 80% Accrued Benefit, the amount of time after the accrual of the 80% benefit until the entry into the DROP will result in a commensurate reduction in the maximum time allowed for DROP participation. Members who were in the DROP on the effective date of the adoption of this section may extend their DROP participation so that their maximum participation in the DROP is 60 months. Members with 20 years of Credited Service as of October 1, 2000 were eligible to elect within a 90 day period after the enactment of this section to enter the DROP retroactively to October 1, 2000. The maximum participation in the DROP was 36 months as of October 1, 2000.

Tier Two Members may enter the DROP on the first day of the month following completion of 25 years of Credited Service for a maximum period of 60 months. However, the DROP term for Tier Two Members is reduced one month for each month of eligibility following the completion of 25 years of Credited Service during which the Member did not participate in the DROP.

DROP participants are not eligible for death or disability benefits.

The Accrued Benefit is frozen and no further Employee Contributions are payable at DROP entry. No payment shall be made for accrued unused leave upon entering the DROP, nor shall the amount of accrued unpaid leave be used in the calculation of the amount of pension benefits.

The monthly retirement benefits, including any variable benefits that would have been payable had the Member elected to cease employment and not join the DROP, are deposited in the participant's DROP account. These payments accumulate with interest, credited quarterly, at a rate equal to the actual rate of return achieved by the trust fund net of administrative expenses. However, DROP account earnings for Tier Two Members is never less than 0% per month. At the option of the Tier One Member, the DROP account will be paid a fixed amount as determined by the board of trustees (currently 65.625% of the Plan's actuarially assumed investment return), but no higher than the actuarially assumed investment earnings. Following resignation and prior to distribution, a rate of interest, as determined by the board of trustees, shall be credited to the participant's DROP account.

Within 30 days following the end of any calendar quarter after the termination of the Member's employment as a firefighter, the balance credited to the DROP account is distributed in a single lump sum, either directly to the Member (subject to applicable tax withholding) or as a direct rollover.

Defined Contribution Plan Component: Ordinance No. 160-01-100 was adopted effective February 8, 2016 which created a defined contribution (DC) component to the Plan. This component of the Plan is not activated until a portion of Chapter 175 premium tax revenues have been assigned to fund the DC Plan.

Description of Assumptions and Methods

Assumed Rate of Investment Return: 7.85% per year, net of investment expenses.

Salary Increase – Individual: 7.0% per year.

Inflation: 3.0%

Administrative Expenses: Actual administrative expense for the prior year is added to the Normal Cost.

Percentage Married at Retirement: 80% of active Members are assumed to be married at retirement.

Spouse Ages: Where spousal information was supplied, that information was used. Otherwise, wives are assumed to be three years younger than their husbands.

Mortality: In the prior valuation, the mortality table was that used for special risk employees in the valuation of the Florida Retirement System (FRS) as of July 1, 2015, as required by state statute. The mortality table has been revised to that used for special risk employees in the valuation of FRS as of July 1, 2016 and 2017, as required by state statute. While healthy post-retirement mortality and disabled mortality rates were unchanged, healthy pre-retirement was revised. The mortality rates are as follows:

Healthy mortality (Pre-retirement):
- Males: 10% RP-00 Combined Healthy White Collar + 90% RP-00 Combined Healthy Blue Collar
- Females: 100% RP-00 Combined Healthy White Collar
- Both male and female rates fully generational using Scale BB

Healthy mortality (Post-retirement):
- Males: 10% RP-00 Annuitant White Collar + 90% RP-00 Annuitant Blue Collar
- Females: 100% RP-00 Annuitant White Collar
- Both male and female rates fully generational using Scale BB

Disabled mortality:
- Males: 60% RP-00 Disabled Retiree Set Back 4 Years + 40% RP-00 Annuitant White Collar
- Females: 60% RP-00 Disabled Retiree Set Forward 2 Yrs + 40% RP-00 Annuitant White Collar
- No mortality improvement is assumed for disabled lives.

Retirement: For the current valuation retirement is assumed at 50% of those eligible to retire or DROP with 20 through 24 years of service with 100% choosing to retire or DROP at 25 years of service or upon reaching age 55 with 10 years of service.

Termination: For the current valuation, unisex rates, as follows:

Service	Rate	Service	Rate	Service	Rate	Service	Rate
0-1	3.8%	6	3.0%	11	2.4%	16	1.3%
2	3.7%	7	2.8%	12	2.1%	17	1.1%
3	3.5%	8	2.8%	13	1.8%	18	0.9%
4	3.3%	9	2.7%	14	1.6%	19	0.9%
5	3.2%	10	2.6%	15	1.4%	20+	0.0%

Disability: Unisex rates, as follows:

Age	Rate	Age	Rate	Age	Rate	Age	Rate
15-21	0.14%	36	0.24%	46	0.59%	56	1.68%
22-25	0.15%	37	0.25%	47	0.70%	57	1.81%
26-27	0.16%	38	0.26%	48	0.79%	58	1.95%
28-29	0.17%	39	0.28%	49	0.90%	59	2.09%
30	0.18%	40	0.30%	50	1.00%	>=60	0.00%
31	0.19%	41	0.32%	51	1.10%		
32	0.20%	42	0.35%	52	1.20%		
33	0.21%	43	0.39%	53	1.31%		
34	0.22%	44	0.44%	54	1.43%		
35	0.23%	45	0.51%	55	1.55%		

On and Off Duty Disability and Death: 75% of disabilities are assumed to be in the line of duty.

Funding Method: Entry Age Normal (level percent of salary).

Actuarial Value of Assets: The market value of assets is adjusted to recognize gains and losses over a four-year period. The Actuarial Value of Assets shall not be more than 120% or less than 80% of the market value of assets.

Glossary of Actuarial Terms

Present Value of Benefits (PVB): The present value, as of the valuation date, of all benefits that will become payable by the Plan for the current group of members in the census.

Normal Cost (NC): The value of the portion of the total benefit for active members which accrues in the year following the valuation date. Under the Entry Age Normal (Level Percent of Salary) funding method, the NC is a constant fraction of salary from the member's date of entry into the Plan to the member's assumed date of termination, retirement, disability or death.

Accrued Liability (AL): This is the portion of the PVB attributable to the past at the valuation date. For active members, AL is the annual NC accumulated from date of entry to the valuation date for each member. For retired and terminated members, the PVB and the AL are equal. The AL is the estimated liability owed by the pension fund at the valuation date.

Unfunded Accrued Liability (UAL): Any excess of the Accrued Liability over the fund assets. A negative UAL indicates fund assets are greater than the Accrued Liability, otherwise known as a surplus.

Actuarial Value of Assets: The value of assets used in the actuarial valuation of the Plan which is compared to the AL to determine the UAL and minimum funding requirements. A method may be used to smooth out short term volatility in the fair market value of assets.