

AUSTIN FIREFIGHTERS'  
RELIEF AND RETIREMENT FUND

ACTUARIAL VALUATION  
AS OF DECEMBER 31, 2015



August 10, 2016

Mr. William E. Stefka  
Austin Firefighters'  
Relief and Retirement Fund  
4101 Parkstone Heights Drive, Suite 270  
Austin, TX 78746

Re: Austin Firefighters' Relief and Retirement Fund

Dear Mr. Stefka:

We are pleased to present to the Board this report of the annual actuarial valuation of the Austin Firefighters' Relief and Retirement Fund (AFRRF). The valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to develop the appropriate funding requirements for the applicable plan year(s). Please note that this valuation may not be applicable for any other purposes.

The valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects laws and regulations issued to date pursuant to the provisions of the Texas Local Fire Fighters' Retirement Act (TLFFRA) and Vernon's Texas Civil Statutes, as well as applicable federal laws and regulations. In our opinion, the assumptions used in this valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations.

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

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


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

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

Respectfully submitted,

Foster & Foster Inc.

By:

  
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Bradley R. Heinrichs, FSA, EA, MAAA  
Enrolled Actuary #14-6901

BRH/lke

Enclosures

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SUMMARY OF REPORT

The regular annual actuarial valuation of the Austin Firefighters’ Relief and Retirement Fund, performed as of December 31, 2015, has been completed and the results are presented in this Report.

The pension costs, compared with those developed in the December 31, 2014 actuarial valuation, are as follows:

Valuation Date	<u>12/31/2015</u>	<u>12/31/2014</u>
Normal Cost % of Total Annual Payroll	29.47%	29.36%
Expected Member Contributions * % of Total Annual Payroll	18.33%	17.83%
City Normal Cost Rate % of Total Annual Payroll	11.14%	11.53%
Funding Period To Amortize UAAL * (expressed in number of years)	12.29	10.57

\* A detailed list of the currently scheduled contribution rates for the City and Members can be found on page 10.

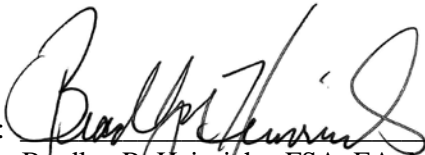
During the past year, the plan has realized net unfavorable actuarial experience. The primary components of actuarial loss were attributable to a 6.31% investment return (Actuarial Asset basis) which fell short of the 7.70% assumption, in addition to unfavorable retirement and inactive mortality experience. These components were partially offset by favorable experience as a result of lower than expected individual increases in pensionable earnings.

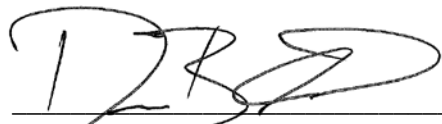
As a result of these actuarial losses, it can be seen above that the funding period required to amortize the Unfunded Actuarial Accrued Liability has increased slightly from 10.57 years to 12.29 years since the previous valuation.

The balance of this Report presents additional details of the actuarial valuation and the general operation of the Fund. The undersigned would be pleased to meet with the Board of Trustees in order to discuss the Report and answer any pending questions concerning its contents.

Respectfully submitted,

FOSTER & FOSTER INC.

By:   
Bradley R. Heinrichs, FSA, EA, MAAA

By:   
Drew D. Ballard, EA, MAAA

## CHANGES SINCE PRIOR VALUATION

### Fund Changes

There have been no changes in benefit provisions since the prior valuation.

### Actuarial Assumption/Method Changes

There have been no changes to the assumptions or method since the prior valuation.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	<u>12/31/2015</u>	<u>12/31/2014</u>
A. Participant Data		
Actives	1,050	1,025
Service Retirees + DROP	570	538
Beneficiaries	74	80
QDRO	44	42
Disability Retirees	16	16
Terminated Vested	6	5
	<hr/>	<hr/>
Total	1,760	1,706
Covered Payroll	85,942,585	82,537,554
Payroll Under Assumed Ret. Age	85,719,980	82,450,505
Annual Rate of Payments to:		
Service Retirees	32,653,975	29,703,998
Beneficiaries	2,690,548	2,735,388
QDRO	837,997	725,743
Disability Retirees	619,221	601,637
Terminated Vested	211,375	183,774
B. Assets		
Actuarial Value	828,920,231	789,433,224
Market Value	785,211,061	789,433,224
C. Liabilities *		
Present Value of Benefits		
Active Members		
Retirement + Vested Benefits	685,965,621	666,850,404
Death Benefits	8,388,094	8,230,947
Disability Benefits	23,237,495	22,501,079
Service Retirees + DROP	416,621,896	372,391,877
Beneficiaries	20,931,589	21,407,109
QDRO	9,351,105	8,075,587
Disability Retirees	5,398,122	5,339,638
Terminated Vested	2,080,755	1,829,177
	<hr/>	<hr/>
Total	1,171,974,677	1,106,625,818

\* Liabilities shown represent present value of future payments.



	<u>12/31/2015</u>	<u>12/31/2014</u>
C. Liabilities - (Continued)		
Present Value of Future Salaries	885,669,007	845,931,737
Normal Cost (Entry Age Normal)		
Retirement + Vested Benefits	22,581,239	21,645,112
Death Benefits	551,700	532,853
Disability Benefits	1,189,478	1,131,577
Total Normal Cost	<u>24,322,417</u>	<u>23,309,542</u>
Present Value of Future Normal Costs	250,099,098	238,479,443
Actuarial Accrued Liability		
Retirement + Vested Benefits	453,442,537	445,126,946
Death Benefits	3,032,102	3,068,445
Disability Benefits	11,017,473	10,907,596
Inactives	454,383,467	409,043,388
Total Actuarial Accrued Liability	<u>921,875,579</u>	<u>868,146,375</u>
Unfunded Actuarial Accrued Liability (UAAL)	92,955,348	78,713,151
GASB 25 Funded Ratio (AVA/AL)	89.9%	90.9%
D. Actuarial Present Value of Accrued Benefits		
Inactives	454,383,467	409,043,388
Actives	351,278,235	341,598,642
Total Present Value Accrued Benefits	<u>805,661,702</u>	<u>750,642,030</u>

Valuation Date	<u>12/31/2015</u>	<u>12/31/2014</u>
E. Pension Cost		
Normal Cost		
% of Payroll under Assumed Ret. Age*	29.47	29.36
Expected Member Contributions ***		
% of Payroll under Assumed Ret. Age*	18.33	17.83
City Normal Cost Rate		
% of Payroll under Assumed Ret. Age*	11.14	11.53
Funding Period to Amortize UAAL **	12.29 years	10.57 years

F. PRB Preferred 20-Year Funding Cost

Normal Cost		
% of Payroll under Assumed Ret. Age*	29.47	29.36
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 20 years		
% of Covered Payroll	7.98	7.04
Total 20-Year Funding Cost		
% of Covered Payroll	37.45	36.40

\* Contributions developed as of 12/31/2015 are expressed as a percentage of projected payroll under assumed retirement age at 12/31/2015 of \$85,719,980

\*\* The City is currently scheduled to make annual contributions to the Fund of 22.05% of pensionable payroll.

\*\*\* Active Members are currently scheduled to make regular contributions to the Fund as follows:  
    18.20% of Compensation from 10/1/2015 to 9/30/2016  
    18.70% of Compensation on and after 10/1/2016

## GAIN/LOSS ANALYSIS

### a. Total Gain/(Loss)

1. Unfunded Actuarial Accrued Liability as of December 31, 2014	78,713,151
2. Normal Cost applicable for 2015	23,309,542
3. Interest on (1) and (2)	7,855,747
4. Contributions made during 2015	34,769,308
5. Interest on (4)	1,313,797
6. Expected UAAL as of December 31, 2015: (1)+(2)+(3)-(4)-(5)	73,795,335
7. Actual UAAL as of December 31, 2015	92,955,348
Total Actuarial Gain/(Loss)	(19,160,013)

### b. Gain/(Loss) on Assets

1. Actuarial Value of Assets as of December 31, 2014	789,433,224
2. Contributions Less Benefit Payments	(9,987,539)
3. Expected Investment Earnings	60,401,838
4. Expected AVA as of December 31, 2015: (1)+(2)+(3)	839,847,523
5. Actual Actuarial Value of Assets as of December 31, 2015	828,920,231
Gain/(Loss) on Assets	(10,927,292)

### c. Gain/(Loss) on Liabilities

1. Expected Actuarial Accrued Liability: a(6)+b(4)	913,642,858
2. Actual Actuarial Accrued Liability	921,875,579
Gain/(Loss) on Liabilities	(8,232,721)

ACTUARIAL ASSUMPTIONS AND METHODS  
(Effective December 31, 2015)

<u>Mortality Rates – Healthy Lives</u>	RP2000 (Fully Generational using Scale AA) set back two years for males and females -- Sex Distinct.  The assumed rates of mortality sufficiently accommodate expected mortality improvements.
<u>Mortality Rates – Disabled Lives</u>	RP2000 Disability Mortality Table
<u>Retirement Elections</u>	See tables below. These assumptions were approved in conjunction with an actuarial experience study dated June 15, 2015.
<u>Termination Rates</u>	See tables below. These assumptions were approved in conjunction with an actuarial experience study dated June 15, 2015.
<u>Disability Rates</u>	See tables below. These assumptions were reviewed in conjunction with an actuarial experience study dated June 15, 2015.
<u>Interest Rate</u>	7.70% per year, compounded annually, net of all expenses. This is supported by the target asset allocation of the trust and the expected long-term return by asset class.
<u>Salary Increases</u>	See tables below. These assumptions were approved in conjunction with an actuarial experience study dated June 15, 2015.
<u>General Wage Inflation</u>	3.00% per year. This assumption was approved in conjunction with an actuarial experience study dated June 15, 2015.
<u>Inflation</u>	3.50% per year. This is reasonable based upon long-term historical experience.
<u>Payroll Growth</u>	3.50% per year for amortization of the Unfunded Actuarial Accrued Liability. This is reasonable based upon long-term historical experience.
<u>Asset Valuation Method</u>	All assets are valued at market value with an adjustment to uniformly spread investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a five-year period.

Marital Status

100% of actives are assumed to be married at time of benefit commencement. Females are assumed to be 4 years younger than Males. Additionally, 50% are assumed to have dependent children. The age of the youngest child is assumed to be one year.

These assumptions were approved in conjunction with an actuarial experience study dated June 15, 2015.

Funding Method

Entry Age Normal Actuarial Cost Method.

Termination Rates

<u>Years of Service</u>	<u>Termination Probability</u>
0-4	1.0%
5-13	0.5
14+	0

Retirement Rates

<u>Number of Years After First Eligibility for Early Retirement</u>	<u>Probability of Retirement</u>
0	2.0%
1	2.0
2	2.0
3	2.0
4	2.0
5	5.0
6	7.5
7	7.5
8	10.0
9	16.7
10	16.7
11	16.7
12	20.0
13	20.0
14	30.0
15	40.0
16	50.0
17	75.0
18	100.0

Retro-DROP Elections

Number of Years After First Eligibility for <u>Early Retirement</u>	<u>No-DROP Elected</u>	<u>Duration 1 Election</u>	<u>Duration 2 Election</u>
0	90%	0.5 years (10%)	n/a
1	50%	1 year (50%)	n/a
2	50%	1 year (25%)	2 years (25%)
3	50%	1 year (25%)	2 years (25%)
4	20%	1 year (60%)	3 years (20%)
5	20%	2 years (40%)	4 years (40%)
6	20%	2 years (60%)	5 years (20%)
7	20%	2 years (50%)	5 years (30%)
8	20%	3 years (60%)	6 years (20%)
9	10%	3 years (50%)	6 years (40%)
10	10%	3 years (50%)	6 years (40%)
11	10%	3 years (60%)	6 years (30%)
12	10%	3 years (75%)	6 years (15%)
13	10%	3 years (40%)	6 years (50%)
14	10%	3 years (40%)	6 years (50%)
15	10%	3 years (20%)	6 years (70%)
16	10%	3 years (20%)	6 years (70%)
17	10%	3 years (20%)	6 years (70%)
18	10%	3 years (20%)	6 years (70%)

Disability Rates

<u>Age</u>	<u>Probability of Disablement</u>
20	0.014%
25	0.019
30	0.031
35	0.052
40	0.092
45	0.209
50	0.379
55	0.490
60	0.911

% Increase in Salary\*

<u>Years of Service</u>	<u>Increase</u>
0	6.00%
1	8.50
2	7.50
3	4.00
4	1.00
5	5.00
10	1.50
15	1.50
20	5.50
21+	1.00

\* Expected increase in salary in addition to general wage inflation assumption.

## VALUATION NOTES

Payroll under Assumed Retirement Age is the projected rate of pay as of the valuation date of all active participants who are not subject to a 100% probability of retirement in the first year following the valuation date, discounted to take into account the probability of remaining an active participant.

Covered Payroll is equal to the Payroll under Assumed Retirement Age, with an addition for the projected rate of pay for the active participants who are subject to a 100% probability of retirement in the first year following the valuation date, discounted to take into account interest for middle of year timing.

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

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

Individual Entry Age Normal Actuarial Cost Method (Level Percent of Compensation) is the method used to determine required contributions under the Fund. The use of this method involves the systematic funding of the Normal Cost (described above) and the Unfunded Accrued (Past Service) Liability. The actuarial accrued liability for active participants is the difference between the present value of future benefits and the present value of future Normal Costs. The actuarial accrued liability for inactive participants is the present value of future benefits.

Unfunded Actuarial Accrued Liability (UAAL) is the difference between the actuarial accrued liability (described above) and the actuarial value of assets.

## STATEMENT BY ENROLLED ACTUARY

This actuarial valuation was prepared and completed by me or under my direct supervision, and I acknowledge responsibility for the results. To the best of my knowledge, the results are complete and accurate, and in my opinion, the techniques and assumptions used are reasonable and meet the requirements and intent of the Texas Local Fire Fighters' Retirement Act (TLFFRA), Vernon's Texas Civil Statutes, and adhere to the Actuarial Standards of Practice. 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.



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Bradley R. Heinrichs, FSA, EA, MAAA  
Enrolled Actuary #14-6901



STATEMENT OF FIDUCIARY NET POSITION  
DECEMBER 31, 2015

<u>ASSETS</u>	COST VALUE	MARKET VALUE
Cash and Cash Equivalents:		
Property, Furniture & Equipment	253,273.37	253,273.37
Checking Account - Expenses	140,022.58	140,022.58
Checking Account - Benefits	1,747,900.79	1,747,900.79
Cash	6,750,175.90	6,750,175.90
 Total Cash and Equivalents	 8,891,372.64	 8,891,372.64
Receivables:		
From Broker for Investments Sold	348,030.39	348,030.39
Investment Income	133,379.89	133,379.89
 Total Receivable	 481,410.28	 481,410.28
Investments:		
State Street Securities	676,519,082.33	776,648,937.16
 Total Investments	 676,519,082.33	 776,648,937.16
 Total Assets	 685,891,865.25	 786,021,720.08
 <u>LIABILITIES</u>		
Payables:		
Accounts Payable	365,364.33	365,364.33
To Broker for Investments Purchased	445,294.28	445,294.28
 Total Liabilities	 810,658.61	 810,658.61
 NET POSITION RESTRICTED FOR PENSIONS	 685,081,206.64	 785,211,061.47

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION  
FOR THE YEAR ENDED DECEMBER 31, 2015  
Market Value Basis

ADDITIONS

Contributions:		
Member		15,546,978.85
City		19,222,329.56
Total Contributions		34,769,308.41
Investment Income:		
Miscellaneous Income	67,661.04	
Net Realized Gain (Loss)	13,839,192.04	
Unrealized Gain (Loss)	(12,709,148.49)	
Net Increase in Fair Value of Investments		1,197,704.59
Interest & Dividends		7,356,456.29
Less Investment Expense <sup>1</sup>		(2,226,097.69)
Net Investment Income		6,328,063.19
Total Additions		41,097,371.60
<u>DEDUCTIONS</u>		
Distributions to Members:		
Benefit Payments		35,981,370.46
Lump Sum DROP Distributions		8,509,190.34
Refunds of Member Contributions		266,286.21
Total Distributions		44,756,847.01
Administrative Expense		562,687.29
Total Deductions		45,319,534.30
Net Increase in Net Position		(4,222,162.70)
NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		789,433,224.17
End of the Year		785,211,061.47

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

ACTUARIAL ASSET VALUATION  
December 31, 2015

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

Plan Year Ending	Gain/(Loss)	<u>Gains/(Losses) Not Yet Recognized</u>				
		Amounts Not Yet Recognized by Valuation Year				
		2016	2017	2018	2019	2020
12/31/2011	N/A	0	0	0	0	0
12/31/2012	N/A	0	0	0	0	0
12/31/2013	N/A	0	0	0	0	0
12/31/2014	N/A	0	0	0	0	0
12/31/2015	(54,636,462)	(43,709,170)	(32,781,877)	(21,854,585)	(10,927,292)	0
<b>Total</b>		<b>(43,709,170)</b>	<b>(32,781,877)</b>	<b>(21,854,585)</b>	<b>(10,927,292)</b>	<b>0</b>

<u>Development of Investment Gain/(Loss)</u>	
Market Value of Assets, 12/31/2014	789,433,224
Contributions Less Benefit Payments	(9,987,539)
Expected Investment Earnings*	60,401,838
Actual Net Investment Earnings	5,765,376
Actuarial Investment Gain/(Loss)	<u>(54,636,462)</u>

\*Expected Investment Earnings =  $0.077 * [789,433,224 + 0.5 * (9,987,539)]$

<u>Development of Actuarial Value of Assets</u>	
(1) Market Value of Assets, 12/31/2015	785,211,061
(2) Gains/(Losses) Not Yet Recognized	(43,709,170)
(3) Actuarial Value of Assets, 12/31/2015, (1) - (2)	<u>828,920,231</u>
(A) 12/31/2014 Actuarial Assets:	789,433,224
(I) Net Investment Income:	
1. Interest and Dividends	7,424,117
2. Realized Gains (Losses)	13,839,192
3. Change in Actuarial Value	31,000,022
4. Investment & Administrative Expenses	(2,788,785)
Total	<u>49,474,546</u>
(B) 12/31/2015 Actuarial Assets:	828,920,231
Actuarial Assets Rate of Return = $2I/(A+B-I)$ :	6.31%
Market Value of Assets Rate of Return:	0.73%
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	(10,927,292)
12/31/2015 Limited Actuarial Assets:	828,920,231

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS  
 DECEMBER 31, 2015  
 Actuarial Asset Basis

REVENUES

Contributions:		
Member	15,546,978.85	
City	19,222,329.56	
<b>Total Contributions</b>		<b>34,769,308.41</b>
Earnings from Investments:		
Interest & Dividends	7,356,456.29	
Miscellaneous Income	67,661.04	
Net Realized Gain (Loss)	13,839,192.04	
Change in Actuarial Value	31,000,021.51	
<b>Total Earnings and Investment Gains</b>		<b>52,263,330.88</b>

EXPENDITURES

Distributions to Members:		
Benefit Payments	35,981,370.46	
Lump Sum DROP Distributions	8,509,190.34	
Refunds of Member Contributions	266,286.21	
<b>Total Distributions</b>		<b>44,756,847.01</b>
Expenses:		
Investment related <sup>1</sup>	2,226,097.69	
Administrative	562,687.29	
<b>Total Expenses</b>		<b>2,788,784.98</b>
<b>Change in Net Assets for the Year</b>		<b>39,487,007.30</b>
<b>Net Assets Beginning of the Year</b>		<b>789,433,224.17</b>
<b>Net Assets End of the Year<sup>2</sup></b>		<b>828,920,231.47</b>

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

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

## STATISTICAL DATA

	<u>12/31/2013</u>	<u>12/31/2014</u>	<u>12/31/2015</u>
Actives	1,074	1,025	1,050
Average Current Age	42.2	42.7	42.6
Average Age at Employment	28.2	28.2	28.4
Average Past Service	14.0	14.5	14.2
Average Annual Salary	\$84,512	\$84,895	\$86,181

## AGE AND SERVICE DISTRIBUTION

### PAST SERVICE

AGE	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+	Total
15 - 19	0	0	0	0	0	0	0	0	0	0	0	0
20 - 24	1	0	1	0	0	0	0	0	0	0	0	2
25 - 29	20	0	27	3	0	1	0	0	0	0	0	51
30 - 34	33	0	46	23	0	35	4	0	0	0	0	141
35 - 39	8	0	21	44	0	66	65	17	0	0	0	221
40 - 44	0	0	1	11	0	33	62	59	21	0	0	187
45 - 49	0	0	0	1	0	7	43	66	79	12	0	208
50 - 54	0	0	0	0	0	0	3	21	61	63	12	160
55 - 59	0	0	0	0	0	0	0	2	1	52	15	70
60 - 64	0	0	0	0	0	0	0	0	0	1	9	10
65+	0	0	0	0	0	0	0	0	0	0	0	0
Total	62	0	96	82	0	142	177	165	162	128	36	1,050

AUSTIN FIREFIGHTERS'  
RELIEF AND RETIREMENT FUND  
SUMMARY OF BENEFIT PROVISIONS

Service Total years and completed months during which a Member makes contributions to the Fund.

Average Monthly Compensation Average Salary for the highest 36 months of service.

Member Contributions 18.20% of Salary (as of 12/31/2015). See schedule of rates on Page 10.

City Contributions 22.05% or payroll.

Normal Retirement

Date Earlier of age 50 and 10 years of Service, or 25 years of Service, regardless of age.

Benefit 3.30% of Average Monthly Compensation times Service (\$1,200 minimum). Effective July 1, 2012, the minimum benefit was increased to \$2,000 per month for all retirees and surviving spouses currently receiving normal or disability retirement benefits which commenced prior to January 1, 1994.

Form of Benefit Married: Life Annuity with 75% continued to Surviving Spouse

Single: Life Annuity with 75% continued to designated beneficiary.

Early Retirement

Date Earlier of age 45 and 10 years of Service, or 20 years of Service, regardless of age.

Benefit Same for Normal Retirement as shown above. Members who retire under Early Retirement are not eligible to receive any COLA adjustments until the date they would have met Normal Retirement eligibility requirements.

Vesting

Schedule	100% after 10 years of Service.
Benefit Amount	Member will receive his (her) accrued benefit payable at age 50 or the date they would have completed 25 years of Service had they remained employed.  Non-vested members receive a refund of member contributions accumulated with 5.0% interest.

Disability

Eligibility	Disability preventing the Member from performing the duties of a firefighter during the two and one-half years after becoming disabled or any employment after the two and one-half years after becoming disabled.
Benefit	Accrued benefit at date of disability, but not less than 66% of Average Monthly Compensation.
Form of Benefit	<u>Married:</u> Life Annuity with 75% continued to Surviving Spouse  <u>Single:</u> Life Annuity

Death Benefits

Surviving Spouse of Member:	75% of Member's accrued benefit at date of death, but not less than 49.5% of Average Monthly Compensation.
Dependent Children of Member: (with Surviving Spouse)	Each child is entitled to 15% of the payment paid to the surviving spouse as shown directly above.
Dependent Children of Member: (with no Surviving Spouse)	75% of the payment that would have been paid to a surviving spouse as shown above, split equally among each dependent child.

Cost of Living Adjustment

Eligibility	Normal Retirement.
Amount	Determined by the actuary if providing a COLA will not impair financial stability of the Fund.



Retroactive DROP

Eligibility

Satisfaction of Early or Normal Retirement Eligibility.

Participation Period

Upon election to retroactively enter DROP, the Retro DROP period will not exceed 84 months.

Rate of Return

5.0%, compounded annually, on monthly benefits that would have been deposited into a DROP account and Member contributions deposited into the fund between the effective DROP entry date and the actual date of termination.

STATEMENT OF FIDUCIARY NET POSITION  
DECEMBER 31, 2015

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Property, Furniture & Equipment	253,273
Checking Account - Expenses	140,023
Checking Account - Benefits	1,747,901
Cash	6,750,176
 Total Cash and Equivalents	 8,891,373
 Receivables:	
From Broker for Investments Sold	348,030
Investment Income	133,380
 Total Receivable	 481,410
 Investments:	
State Street Securities	776,648,937
 Total Investments	 776,648,937
 Total Assets	 786,021,720
 <u>LIABILITIES</u>	
Payables:	
Accounts Payable	365,365
To Broker for Investments Purchased	445,294
 Total Liabilities	 810,659
 NET POSITION RESTRICTED FOR PENSIONS	 785,211,061

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION  
FOR THE YEAR ENDED DECEMBER 31, 2015  
Market Value Basis

ADDITIONS

## Contributions:

Member	15,546,979	
City	19,222,329	
<b>Total Contributions</b>		<b>34,769,308</b>
<b>Investment Income:</b>		
Miscellaneous Income	67,661	
Net Realized Gain (Loss)	13,839,192	
Unrealized Gain (Loss)	(12,709,148)	
Net Increase in Fair Value of Investments	1,197,705	
Interest & Dividends	7,356,456	
Less Investment Expense <sup>1</sup>	(2,226,098)	
<b>Net Investment Income</b>		<b>6,328,063</b>
<b>Total Additions</b>		<b>41,097,371</b>

DEDUCTIONS

## Distributions to Members:

Benefit Payments	35,981,371	
Lump Sum DROP Distributions	8,509,190	
Refunds of Member Contributions	266,286	
<b>Total Distributions</b>		<b>44,756,847</b>
Administrative Expense		562,687
<b>Total Deductions</b>		<b>45,319,534</b>
<b>Net Increase in Net Position</b>		<b>(4,222,163)</b>
<b>NET POSITION RESTRICTED FOR PENSIONS</b>		
Beginning of the Year		789,433,224
End of the Year		785,211,061

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

**NOTES TO THE FINANCIAL STATEMENTS**  
(For the Year Ended December 31, 2015)

Plan Description

*Plan Administration*

The Plan is a single-employer defined benefit pension plan administered by the Plan's Board of Trustees comprised of:

- a. The Mayor of the municipality,
- b. The city treasurer or, if there is no treasurer, the person who by law, charter provision, or ordinance performs the duty of city treasurer,
- c. Three Members of the fund to be selected by vote of the firefighters and retirees.

*Plan Membership as of December 31, 2014:*

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	676
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	5
Active Plan Members	1,025
	1,706
	1,706

*Benefits Provided*

The Plan provides retirement, disability, termination and death benefits.

Normal Retirement:

Earlier of age 50 and 10 years of Service, or 25 years of Service, regardless of age.

Benefit: 3.30% of Average Monthly Compensation times Service (\$1,200 minimum). Effective July 1, 2012, the minimum benefit was increased to \$2,000 per month for all retirees and surviving spouses currently receiving normal or disability retirement benefits which commenced prior to January 1, 1994.

Early Retirement:

Earlier of age 45 and 10 years of Service, or 20 years of Service, regardless of age.

Benefit: Same for Normal Retirement as shown above. Members who retire under Early Retirement are not eligible to receive any COLA adjustments until the date they would have met Normal Retirement eligibility requirements.

Vesting:

Schedule: 100% after 10 years of Service.

Benefit Amount: Member will receive his (her) accrued benefit payable at age 50 or the date they would have completed 25 years of Service had they remained employed.

Non-vested members receive a refund of member contributions accumulated with 5.0% interest.

Disability:

Disability preventing the Member from performing the duties of a firefighter during the two and one-half years after becoming disabled or any employment after the two and one-half years after becoming disabled.

Accrued benefit at date of disability, but not less than 66% of Average Monthly Compensation.

Death Benefits:

Surviving Spouse of Member: 75% of Member's accrued benefit at date of death, but not less than 49.5% of Average Monthly Compensation.

Dependent Children of Member (with Surviving Spouse): Each child is entitled to 15% of the payment paid to the surviving spouse as shown directly above.

Dependent Children of Member (with no Surviving Spouse): 75% of the payment that would have been paid to a surviving spouse as shown above, split equally among each dependent child.

Cost of Living Adjustment:

Eligibility: Normal Retirement

Amount: Determined by the actuary if providing a COLA will not impair financial stability of the Fund.

*Contributions*

Member Contributions: 18.20% of Salary (as of 12/31/2015).

City Contributions: 22.05% of payroll.

## Investments

*Investment Policy:*

The following was the Board's adopted asset allocation policy as of December 31, 2015:

Asset Class	Target Allocation
Public Domestic Equity	20%
Public Foreign Equity	22%
Private Equity Fund of Funds	10%
Private Equity Directs	5%
Investment Grade Bonds	13%
TIPS	5%
High Yield/Bank Loans	5%
Emerging Market Debt	7%
Core Real Estate	5%
Non-Core Real Estate	5%
Natural Resources	3%
Total	100%

*Concentrations:*

The Plan did not hold investments in any one organization that represent 5 percent or more of the Pension Plan's Fiduciary Net Position.

*Rate of Return:*

For the year ended December 31, 2015, the annual money-weighted rate of return on Pension Plan investments, net of Pension Plan investment expense, was 0.81 percent.

The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Deferred Retirement Option Program

## Retroactive DROP

Eligibility: Satisfaction of Early or Normal Retirement Eligibility.

Participation Period: Upon election to retroactively enter DROP, the Retro DROP period will not exceed 84 months.

Rate of Return: 5.0%, compounded annually, on monthly benefits that would have been deposited into a DROP account and Member contributions deposited into the fund between the effective DROP entry date and the actual date of termination.

The DROP balance as December 31, 2015 is \$51,207,560.

NET PENSION LIABILITY OF THE SPONSOR

The components of the Net Pension Liability of the Sponsor on December 31, 2015 were as follows:

Total Pension Liability	\$ 913,618,039
Plan Fiduciary Net Position	\$ (785,211,061)
Sponsor's Net Pension Liability	<u>\$ 128,406,978</u>
Plan Fiduciary Net Position as a percentage of Total Pension Liability	85.95%

*Actuarial Assumptions:*

The Total Pension Liability was determined by an actuarial valuation as of December 31, 2014 updated to December 31, 2015 using the following actuarial assumptions:

Inflation	3.00%
Salary Increases	1.00% - 6.00%
Discount Rate	7.70%
Investment Rate of Return	7.70%

Mortality Rates Healthy Lives: RP-2000 (Fully Generational using Scale AA) set back two years for males and females - Sex distinct.

Mortality Rates Disabled Lives: RP2000 Disability Mortality Table.

The significant assumptions are based upon the most recent actuarial experience study dated June 15th, 2015 for the period 2004-2014.

The Long-Term Expected Rate of Return on Pension Plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of Pension Plan investment expenses and inflation) are developed for each major asset class.

These ranges are combined to produce the Long-Term Expected Rate of Return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of arithmetic real rates of return for each major asset class included in the Pension Plan's target asset allocation as of December 31, 2015 are summarized in the following table:

<u>Asset Class</u>	<u>Long Term Expected Real Rate of Return</u>
Public Domestic Equity	5.4%
Public Foreign Equity	7.5%
Private Equity Fund of Funds	5.7%
Private Equity Directs	7.5%
Investment Grade Bonds	0.7%
TIPS	0.4%
High Yield/Bank Loans	3.0%
Emerging Market Debt	3.5%
Core Real Estate	4.0%
Non-Core Real Estate	5.3%
Natural Resources	6.1%

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### Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.70 percent.

The projection of cash flows used to determine the Discount Rate assumed that Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate. Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the Long-Term Expected Rate of Return on Pension Plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability.

For purpose of this valuation, the expected rate of return on pension plan investments is 7.70%; the municipal bond rate is 3.57% (based on the weekly rate closest to but not later than the measurement date of the Bond Buyer 20-Bond Index as published by the Federal Reserve); and the resulting single discount rate is 7.70%.

	1% Decrease	Current Discount Rate	1% Increase
	6.70%	7.70%	8.70%
Sponsor's Net Pension Liability	\$ 224,759,685	\$ 128,406,978	\$ 47,349,701

**SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS**  
Last 10 Years

	12/31/2015	12/31/2014	12/31/2013
Total Pension Liability			
Service Cost	23,309,543	25,318,456	23,497,407
Interest	66,404,730	62,976,839	59,249,151
Changes of benefit terms	-	-	-
Differences between Expected and Actual Experience	7,192,645	-	-
Changes of assumptions	-	4,883,207	-
Benefit Payments, including Refunds of Employee Contributions	(44,756,847)	(37,992,903)	(34,943,917)
Net Change in Total Pension Liability	52,150,071	55,185,599	47,802,641
Total Pension Liability - Beginning	861,467,968	806,282,369	758,479,728
Total Pension Liability - Ending (a)	<u>\$913,618,039</u>	<u>\$861,467,968</u>	<u>\$ 806,282,369</u>
Plan Fiduciary Net Position			
Contributions - Employer	19,222,329	18,669,944	17,786,494
Contributions - Employee	15,546,979	14,659,946	14,000,514
Net Investment Income	6,328,063	42,005,227	101,289,167
Benefit Payments, including Refunds of Employee Contributions	(44,756,847)	(37,992,903)	(34,943,917)
Administrative Expense	(562,687)	(530,816)	(363,050)
Net Change in Plan Fiduciary Net Position	(4,222,163)	36,811,398	97,769,208
Plan Fiduciary Net Position - Beginning	789,433,224	752,621,826	654,852,618
Plan Fiduciary Net Position - Ending (b)	<u>\$785,211,061</u>	<u>\$789,433,224</u>	<u>\$ 752,621,826</u>
Net Pension Liability - Ending (a) - (b)	<u>\$128,406,978</u>	<u>\$ 72,034,744</u>	<u>\$ 53,660,543</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	85.95%	91.64%	93.34%
Covered Employee Payroll	\$ 87,836,040	\$ 84,670,948	\$ 83,279,101
Net Pension Liability as a percentage of Covered Employee Payroll	146.19%	85.08%	64.43%

**Notes to Schedule:***Changes of assumptions:*

For the year ending 2014, amounts reported as changes of assumptions were resulted from an actuarial experience study dated June 15, 2015, below a brief overview of the changes:

- A "fresh-start" on the actuarial asset value has been implemented. For all future valuations, the asset valuation method will utilize a new smoothing technique.
- The investment return assumption has been decreased from 7.75% to 7.70% per year compounded annually, net of all expenses.
- The general wage inflation rate has been decreased from 3.5% to 3.0% per year.
- The service-based table attributable to merit and longevity salary increases has been amended.
- The retirement rates have been amended.
- The Retro-DRIP election assumptions have been amended.
- The withdrawal rates have been amended.
- The assumed spousal age difference has been amended.



**SCHEDULE OF CONTRIBUTIONS**  
Last 10 Years

	12/31/2015	12/31/2014	12/31/2013
Actuarially Determined Contribution Contributions in relation to the Actuarially Determined Contributions	N/A	N/A	N/A
Contribution Deficiency (Excess)	N/A	N/A	N/A
Covered Employee Payroll	\$ 87,836,040	\$ 84,670,948	\$ 83,279,101
Contributions as a percentage of Covered Employee Payroll	22.05%	22.05%	21.36%

Notes to Schedule

Methods and assumptions used to determine liabilities:

Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method.
Amortization Method:	Level Percentage of Pay, Closed.
Remaining Amortization Period:	10.57 Years (as of 12/31/2014).
Mortality Rates - Healthy Lives	RP-2000 (Fully Generational using Scale AA) set back two years for males and females - Sex Distinct.
Mortality Rates - Disabled Lives	RP2000 Disability Mortality Table.
Retirement age:	See table on the following page.
Termination Rates:	See table below.
Disability Rates:	See table on the following page.
Interest Rate:	7.70% per year, compounded annually, net of all expenses.
Salary Increases:	See table on the following page.
Inflation:	3.50% per year for amortization of the Unfunded Actuarial Accrued Liability.
Marital Status:	100% of actives are assumed to be married at time of benefit commencement. Females are assumed to be 3 years younger than Males. Additionally, 50% are assumed to have dependent children. The age of the youngest child is assumed to be one year.
Asset Valuation Method:	All assets are valued at market value with an adjustment to uniformly spread investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a five-year period.

Termination Rates:	Years of Service	Termination Probability
	0-4	1.00%
	5-13	0.50%
	14+	0.00%

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Retirement Rates:	Number of Years After First	Probability of Retirement
	Eligibility for Early Retirement	
	0	2.00%
	1	2.00%
	2	2.00%
	3	2.00%
	4	2.00%
	5	5.00%
	6	7.50%
	7	7.50%
	8	10.00%
	9	16.70%
	10	16.70%
	11	16.70%
	12	20.00%
	13	20.00%
	14	30.00%
	15	40.00%
	16	50.00%
	17	75.00%
	18	100.00%

Retro-DROP Elections:	Number of	No-DROP	Duration 1	Duration 2
	Years After			
	First Eligibility	Elected	Election	Election
	for Early			
	Retirement			
	0	90%	0.5 years (10%)	n/a
	1	50%	1 year (50%)	n/a
	2	50%	1 year (25%)	2 years (25%)
	3	50%	1 year (25%)	2 years (25%)
	4	20%	1 year (60%)	3 years (20%)
	5	20%	2 years (40%)	4 years (40%)
	6	20%	2 years (60%)	5 years (20%)
	7	20%	2 years (50%)	5 years (30%)
	8	20%	3 years (60%)	6 years (20%)
	9	10%	3 years (50%)	6 years (40%)
	10	10%	3 years (50%)	6 years (40%)
	11	10%	3 years (60%)	6 years (30%)
	12	10%	3 years (75%)	6 years (15%)
	13	10%	3 years (40%)	6 years (50%)
	14	10%	3 years (40%)	6 years (50%)
	15	10%	3 years (20%)	6 years (70%)
	16	10%	3 years (20%)	6 years (70%)
	17	10%	3 years (20%)	6 years (70%)
	18	10%	3 years (20%)	6 years (70%)

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Disability Rate Table:

Age	Probability of Disablement
20	0.014%
25	0.019%
30	0.031%
35	0.052%
40	0.092%
45	0.209%
50	0.379%
55	0.490%
60	0.911%

% Increase in Salary\*:

Years of Service	Increase
0	6.00%
1	8.50%
2	7.50%
3	4.00%
4	1.00%
5	5.00%
10	1.50%
15	1.50%
20	5.50%
21+	1.00%

\* Expected increase in salary in addition to general wage inflation assumption.

SCHEDULE OF INVESTMENT RETURNS  
Last 10 Years

	<u>12/31/2015</u>	<u>12/31/2014</u>	<u>12/31/2013</u>
Annual Money-Weighted Rate of Return			
Net of Investment Expense	0.81%	5.60%	13.30%

NOTES TO THE FINANCIAL STATEMENTS  
(For the Year Ended September 30, 2016)

General Information about the Pension Plan

*Plan Description*

The Plan is a single-employer defined benefit pension plan administered by the Plan's Board of Trustees comprised of:

- a. The Mayor of the municipality,
- b. The city treasurer or, if there is no treasurer, the person who by law, charter provision, or ordinance performs the duty of city treasurer,
- c. Three Members of the fund to be selected by vote of the firefighters and retirees.

A person who begins service as a firefighter in a municipality to which this Act applies and who is not ineligible for Membership in the fund becomes a member of the fund as a condition of that person's appointment.

*Plan Membership as of December 31, 2014:*

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	676
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	5
Active Plan Members	1,025
	1,706

*Benefits Provided*

The Plan provides retirement, disability, termination and death benefits.

Normal Retirement:

Earlier of age 50 and 10 years of Service, or 25 years of Service, regardless of age.

Benefit: 3.30% of Average Monthly Compensation times Service (\$1,200 minimum). Effective July 1, 2012, the minimum benefit was increased to \$2,000 per month for all retirees and surviving spouses currently receiving normal or disability retirement benefits which commenced prior to January 1, 1994.

Early Retirement:

Earlier of age 45 and 10 years of Service, or 20 years of Service, regardless of age.

Benefit: Same for Normal Retirement as shown above. Members who retire under Early Retirement are not eligible to receive any COLA adjustments until the date they would have met Normal Retirement eligibility requirements.

Vesting:

Schedule: 100% after 10 years of Service.

Benefit Amount: Member will receive his (her) accrued benefit payable at age 50 or the date they would have completed 25 years of Service had they remained employed.

Non-vested members receive a refund of member contributions accumulated with 5.0% interest.

Disability:

Disability preventing the Member from performing the duties of a firefighter during the two and one-half years after becoming disabled or any employment after the two and one-half years after becoming disabled.

Accrued benefit at date of disability, but not less than 66% of Average Monthly Compensation.

Death Benefits:

Surviving Spouse of Member: 75% of Member's accrued benefit at date of death, but not less than 49.5% of Average Monthly Compensation.

Dependent Children of Member (with Surviving Spouse): Each child is entitled to 15% of the payment paid to the surviving spouse as shown directly above.

Dependent Children of Member (with no Surviving Spouse): 75% of the payment that would have been paid to a surviving spouse as shown above, split equally among each dependent child.

Cost of Living Adjustment:

Eligibility: Normal Retirement

Amount: Determined by the actuary if providing a COLA will not impair financial stability of the Fund.

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### Contributions

Member Contributions: 18.20% of Salary (as of 12/31/2015).

City Contributions: 22.05% of payroll.

### Net Pension Liability

The measurement date is December 31, 2015.

The measurement period for the pension expense was December 31, 2014 to December 31, 2015.

The reporting period is October 1, 2015 through September 30, 2016.

The Sponsor's Net Pension Liability was measured as of December 31, 2015.

The Total Pension Liability used to calculate the Net Pension Liability was determined as of that date.

### Actuarial Assumptions:

The Total Pension Liability was determined by an actuarial valuation as of December 31, 2014 updated to December 31, 2015 using the following actuarial assumptions:

Inflation	3.00%
Salary Increases	1.00% - 6.00%
Discount Rate	7.70%
Investment Rate of Return	7.70%

Mortality Rates Healthy Lives: RP-2000 (Fully Generational using Scale AA) set back two years for males and females - Sex distinct.  
Mortality Rates Disabled Lives: RP2000 Disability Mortality Table.

The significant assumptions are based upon the most recent actuarial experience study dated June 15th, 2015 for the period 2004-2014.

The Long-Term Expected Rate of Return on Pension Plan investments was determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, Net of Pension Plan investment expenses and inflation) are developed for each major asset class.

These ranges are combined to produce the Long-Term Expected Rate of Return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation.

Best estimates of arithmetic real rates of return for each major asset class included in the Pension Plan's target asset allocation as of December 31, 2015 are summarized in the following table:

Asset Class	Target Allocation	Long Term Expected Real Rate of Return
Public Domestic Equity	20%	5.4%
Public Foreign Equity	22%	7.5%
Private Equity Fund of Funds	10%	5.7%
Private Equity Directs	5%	7.5%
Investment Grade Bonds	13%	0.7%
TIPS	5%	0.4%
High Yield/Bank Loans	5%	3.0%
Emerging Market Debt	7%	3.5%
Core Real Estate	5%	4.0%
Non-Core Real Estate	5%	5.3%
Natural Resources	3%	6.1%
Total	100%	

## GASB 68

### Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.70 percent.

The projection of cash flows used to determine the Discount Rate assumed that Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate. Based on those assumptions, the Pension Plan's Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the Long-Term Expected Rate of Return on Pension Plan investments was applied to all periods of projected benefit payments to determine the Total Pension Liability.

For purpose of this valuation, the expected rate of return on pension plan investments is 7.70%; the municipal bond rate is 3.57% (based on the weekly rate closest to but not later than the measurement date of the Bond Buyer 20-Bond Index as published by the Federal Reserve); and the resulting single discount rate is 7.70%.

CHANGES IN NET PENSION LIABILITY

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a)-(b)
Reporting Period Ending September 30, 2015	\$ 861,467,968	\$ 789,433,224	\$ 72,034,744
Changes for a Year:			
Service Cost	23,309,543	-	23,309,543
Interest	66,404,730	-	66,404,730
Differences between Expected and Actual Experience	7,192,645	-	7,192,645
Changes of assumptions	-	-	-
Changes of benefit terms	-	-	-
Contributions - Employer	-	19,222,329	(19,222,329)
Contributions - Employee	-	15,546,979	(15,546,979)
Contributions - Buy Back	-	-	-
Net Investment Income	-	6,328,063	(6,328,063)
Benefit Payments, including Refunds of Employee Contributions	(44,756,847)	(44,756,847)	-
Administrative Expense	-	(562,687)	562,687
Net Changes	52,150,071	(4,222,163)	56,372,234
Reporting Period Ending September 30, 2016	\$ 913,618,039	\$ 785,211,061	\$ 128,406,978

*Sensitivity of the Net Pension Liability to changes in the Discount Rate.*

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.70%	7.70%	8.70%
Sponsor's Net Pension Liability	\$ 224,759,685	\$ 128,406,978	\$ 47,349,701

*Pension Plan Fiduciary Net Position.*

Detailed information about the pension Plan's Fiduciary Net Position is available in a separately issued Plan financial report.



**PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED  
INFLOWS OF RESOURCES RELATED TO PENSIONS**

For the year ended September 30, 2016, the Sponsor will recognize a Pension Expense of \$29,751,226.

On September 30, 2016, the Sponsor reported Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between Expected and Actual Experience	6,293,565	-
Changes of assumptions	3,798,049	-
Net difference between Projected and Actual Earnings on Pension Plan investments	52,689,703	-
Employer contributions subsequent to the measurement date	TBD	-
Total	TBD	\$ -

The outcome of the Deferred Outflows of resources related to pensions resulting from Employer contributions subsequent to the measurement date will be recognized as a reduction of the Net Pension Liability in the year ended September 30, 2016.

Other amounts reported as Deferred Outflows of Resources and Deferred Inflows of Resources related to pensions will be recognized in Pension Expense as follows:

Year ended September 30:		
2017	\$	15,401,420
2018	\$	15,401,419
2019	\$	15,401,420
2020	\$	12,252,081
2021	\$	1,441,659
Thereafter	\$	2,883,318

## SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

Last 10 Fiscal Years

Reporting Period Ending	09/30/2016	09/30/2015	09/30/2014
Measurement Date	12/31/2015	12/31/2014	12/31/2013
Total Pension Liability			
Service Cost	23,309,543	25,318,456	23,497,407
Interest	66,404,730	62,976,839	59,249,151
Changes of benefit terms	-	-	-
Differences between Expected and Actual Experience	7,192,645	-	-
Changes of assumptions	-	4,883,207	-
Benefit Payments, including Refunds of Employee Contributions	(44,756,847)	(37,992,903)	(34,943,917)
Net Change in Total Pension Liability	52,150,071	55,185,599	47,802,641
Total Pension Liability - Beginning	861,467,968	806,282,369	758,479,728
Total Pension Liability - Ending (a)	<u>\$913,618,039</u>	<u>\$861,467,968</u>	<u>\$806,282,369</u>
Plan Fiduciary Net Position			
Contributions - Employer	19,222,329	18,669,944	17,786,494
Contributions - Employee	15,546,979	14,659,946	14,000,514
Net Investment Income	6,328,063	42,005,227	101,289,167
Benefit Payments, including Refunds of Employee Contributions	(44,756,847)	(37,992,903)	(34,943,917)
Administrative Expense	(562,687)	(530,816)	(363,050)
Net Change in Plan Fiduciary Net Position	(4,222,163)	36,811,398	97,769,208
Plan Fiduciary Net Position - Beginning	789,433,224	752,621,826	654,852,618
Plan Fiduciary Net Position - Ending (b)	<u>\$785,211,061</u>	<u>\$789,433,224</u>	<u>\$752,621,826</u>
Net Pension Liability - Ending (a) - (b)	<u>\$128,406,978</u>	<u>\$ 72,034,744</u>	<u>\$ 53,660,543</u>
Plan Fiduciary Net Position as a percentage of the Total Pension Liability	85.95%	91.64%	93.34%
Covered Employee Payroll	\$ 87,836,040	\$ 84,670,948	\$ 83,279,101
Net Pension Liability as a percentage of Covered Employee Payroll	146.19%	85.08%	64.43%

**Notes to Schedule:***Changes of assumptions:*

For the Reporting Period Ending year 09/30/2015, amounts reported as changes of assumptions were resulted from an actuarial experience study dated June 15, 2015, below a brief overview of the changes:

- A "fresh-start" on the actuarial asset value has been implemented. For all future valuations, the asset valuation method will utilize a new smoothing technique.
- The investment return assumption has been decreased from 7.75% to 7.70% per year compounded annually, net of all expenses.
- The general wage inflation rate has been decreased from 3.5% to 3.0% per year.
- The service-based table attributable to merit and longevity salary increases has been amended.
- The retirement rates have been amended.
- The Retro-DROP election assumptions have been amended.
- The withdrawal rates have been amended.
- The assumed spousal age difference has been amended.

**SCHEDULE OF CONTRIBUTIONS**  
Last 10 Fiscal Years

	<u>09/30/2016</u>	<u>09/30/2015</u>
Actuarially Determined Contribution	N/A	N/A
Contributions in relation to the		
Actuarially Determined Contributions	N/A	N/A
Contribution Deficiency (Excess)	N/A	N/A
Covered Employee Payroll	TBD by City	TBD by City
Contributions as a percentage of		
Covered Employee Payroll	22.05%	22.05%

Notes to Schedule

Methods and assumptions used to determine liabilities:

Actuarial Cost Method:	Entry Age Normal Actuarial Cost Method.
Amortization Method:	Level Percentage of Pay, Closed.
Remaining Amortization Period:	10.57 Years (as of 12/31/2014).
Mortality Rates - Healthy Lives	RP-2000 (Fully Generational using Scale AA) set back two years for males and females - Sex Distinct.
Mortality Rates - Disabled Lives	RP2000 Disability Mortality Table.
Retirement age:	See table on the following page.
Termination Rates:	See table below.
Disability Rates:	See table on the following page.
Interest Rate:	7.70% per year, compounded annually, net of all expenses.
Salary Increases:	See table on the following page.
Inflation:	3.50% per year for amortization of the Unfunded Actuarial Accrued Liability.
Marital Status:	100% of actives are assumed to be married at time of benefit commencement. Females are assumed to be 3 years younger than Males. Additionally, 50% are assumed to have dependent children. The age of the youngest child is assumed to be one year.
Asset Valuation Method:	All assets are valued at market value with an adjustment to uniformly spread investment gains and losses (as measured by actual market value investment return against expected market value investment return) over a five-year period.

Termination Rates:	<u>Years of Service</u>	<u>Termination Probability</u>
	0-4	1.00%
	5-13	0.50%
	14+	0.00%

**GASB 68**

Retirement Rates:

Number of Years After First Eligibility for Early Retirement	Probability of Retirement
0	2.00%
1	2.00%
2	2.00%
3	2.00%
4	2.00%
5	5.00%
6	7.50%
7	7.50%
8	10.00%
9	16.70%
10	16.70%
11	16.70%
12	20.00%
13	20.00%
14	30.00%
15	40.00%
16	50.00%
17	75.00%
18	100.00%

Retro-DROP Elections:

Years After First Eligibility for Early	No-DROP Elected	Duration 1 Election	Duration 2 Election
0	90%	0.5 years (10%)	n/a
1	50%	1 year (50%)	n/a
2	50%	1 year (25%)	2 years (25%)
3	50%	1 year (25%)	2 years (25%)
4	20%	1 year (60%)	3 years (20%)
5	20%	2 years (40%)	4 years (40%)
6	20%	2 years (60%)	5 years (20%)
7	20%	2 years (50%)	5 years (30%)
8	20%	3 years (60%)	6 years (20%)
9	10%	3 years (50%)	6 years (40%)
10	10%	3 years (50%)	6 years (40%)
11	10%	3 years (60%)	6 years (30%)
12	10%	3 years (75%)	6 years (15%)
13	10%	3 years (40%)	6 years (50%)
14	10%	3 years (40%)	6 years (50%)
15	10%	3 years (20%)	6 years (70%)
16	10%	3 years (20%)	6 years (70%)
17	10%	3 years (20%)	6 years (70%)
18	10%	3 years (20%)	6 years (70%)

## GASB 68

Disability Rate Table:

Age	Probability of Disablement
20	0.014%
25	0.019%
30	0.031%
35	0.052%
40	0.092%
45	0.209%
50	0.379%
55	0.490%
60	0.911%

% Increase in Salary\*:

Years of Service	Increase
0	6.00%
1	8.50%
2	7.50%
3	4.00%
4	1.00%
5	5.00%
10	1.50%
15	1.50%
20	5.50%
21+	1.00%

\* Expected increase in salary in addition to general wage inflation assumption.

**COMPONENTS OF PENSION EXPENSE**  
CITY'S FISCAL YEAR SEPTEMBER 30, 2016

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning balance	\$ 72,034,744	\$ -	\$ 31,007,032	\$ -
Employer Contributions made after 12/31/2015	-	-	TBD*	-
Total Pension Liability Factors:				
Service Cost	23,309,543	-	-	23,309,543
Interest	66,404,730	-	-	66,404,730
Changes in benefit terms	-	-	-	-
Differences between Expected and Actual Experience with regard to economic or demographic assumptions	7,192,645	-	7,192,645	-
Current year amortization of experience difference	-	-	(899,080)	899,080
Change in assumptions about future economic or demographic factors or other inputs	-	-	-	-
Current year amortization of change in assumptions	-	-	(542,579)	542,579
Benefit Payments	(44,756,847)	-	-	(44,756,847)
Net change	<u>52,150,071</u>	<u>-</u>	<u>5,750,986</u>	<u>46,399,085</u>
Plan Fiduciary Net Position:				
Contributions - Employer	19,222,329	-	(14,069,052)	-
Contributions - Employee	15,546,979	-	-	(15,546,979)
Net Investment Income	60,380,175	-	-	(60,380,175)
Difference between projected and actual earnings on Pension Plan investments	(54,052,112)	-	54,052,112	-
Current year amortization	-	-	(13,959,761)	13,959,761
Benefit Payments	(44,756,847)	-	-	44,756,847
Administrative Expenses	(562,687)	-	-	562,687
Net change	<u>(4,222,163)</u>	<u>-</u>	<u>26,023,299</u>	<u>(16,647,859)</u>
Ending Balance	<u>\$ 128,406,978</u>	<u>\$ -</u>	<u>TBD</u>	<u>\$ 29,751,226</u>

\* Employer Contributions subsequent to the measurement date made after December 31, 2015 but made on or before September 30, 2016 needs to be added.

AMORTIZATION SCHEDULE - INVESTMENT

Increase (Decrease) in Pension Expense Arising from the Recognition of the of Differences Between Projected and Actual Earnings on Pension Plan Investments

Plan Year Ending	Differences Between Projected and Actual Earnings	Recognition Period (Years)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
2014	\$ 15,746,691	5	\$3,149,339	\$ 3,149,338	\$ 3,149,338	\$ 3,149,338	\$ 3,149,338	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 54,052,112	5	\$ -	\$ 10,810,423	\$ 10,810,423	\$ 10,810,422	\$ 10,810,422	\$ 10,810,422	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ -	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ -	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ -	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ -	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2020	\$ -	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2021	\$ -	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	\$ -	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	\$ -	5	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$3,149,339	\$ 13,959,761	\$ 13,959,761	\$ 13,959,760	\$ 13,959,760	\$ 10,810,422	\$ -	\$ -	\$ -	\$ -	\$ -

AMORTIZATION SCHEDULE - CHANGES OF ASSUMPTIONS

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions

Plan Year Ending	Changes of Assumptions	Recognition Period (Years)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
2014	\$ 4,883,207	9	\$ 542,579	\$ 542,579	\$ 542,579	\$ 542,579	\$ 542,579	\$ 542,578	\$ 542,578	\$ 542,578	\$ 542,578	\$ -	\$ -
2015	\$ -	8	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2020	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2021	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 542,579	\$ 542,579	\$ 542,579	\$ 542,579	\$ 542,579	\$ 542,578	\$ 542,578	\$ 542,578	\$ 542,578	\$ -	\$ -



AMORTIZATION SCHEDULE - EXPERIENCE

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Plan Year Ending	Differences Between Expected and Actual Experience	Recognition Period (Years)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
2014	\$ -	9	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 7,192,645	8	\$ -	\$ 899,080	\$ 899,080	\$ 899,080	\$ 899,081	\$ 899,081	\$ 899,081	\$ 899,081	\$ 899,081	\$ -
2016	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2018	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2019	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2020	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2021	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2022	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2023	\$ -	1	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ -	\$ 899,080	\$ 899,080	\$ 899,080	\$ 899,081	\$ 899,081	\$ 899,081	\$ 899,081	\$ 899,081	\$ -