

CITY OF EVANSTON  
FIREFIGHTERS' PENSION FUND

ACTUARIAL VALUATION  
AS OF JANUARY 1, 2017

CONTRIBUTIONS APPLICABLE TO THE  
PLAN/FISCAL YEAR ENDING DECEMBER 31, 2017

July 31, 2017

Board of Trustees City of Evanston  
Firefighters' Pension Fund  
2100 Ridge Avenue  
Evanston, IL 60201

Re: Actuarial Valuation Report – City of Evanston Firefighters’ Pension Fund

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Evanston Firefighters’ Pension Fund. 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. 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 Article 4, Illinois Pension Code, 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, and asset information supplied by the Board, financial reports prepared by the custodian bank and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

The undersigned 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 Evanston, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the City of Evanston Firefighters' Pension Fund. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

If there are any questions, concerns, or comments about any of the items contained in this report, please contact us at 630-620-0200.

Respectfully submitted,

Foster & Foster, Inc.

By:   
\_\_\_\_\_  
Jason L. Franken  
Enrolled Actuary #17-6888

JLF/lke  
Enclosures

## TABLE OF CONTENTS

Section	Title	Page
I	Introduction	
	a. Summary of Report	5
	b. Changes Since Prior Valuation	7
	c. Comparative Summary of Principal Valuation Results	8
II	Valuation Information	
	a. Development of Amortization Payment	14
	b. Detailed Actuarial (Gain)/Loss Analysis	15
	c. Reconciliation of Changes in Contribution Requirement	16
	d. Statutory Minimum Required Contribution	17
	e. Projection of Benefit Payments	18
	f. Actuarial Assumptions and Methods	19
	g. Glossary	21
III	Trust Fund	22
IV	Member Statistics	
	a. Statistical Data	26
	b. Age and Service Distribution	27
	c. Valuation Participant Reconciliation	28
V	Summary of Current Plan	29

SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Evanston Firefighters’ Pension Fund, performed as of January 1, 2017, has been completed and the results are presented in this Report. The contribution amounts set forth herein are applicable to the plan/fiscal year ended December 31, 2017

The contribution requirements, compared with those set forth in the January 1, 2016 actuarial report, are as follows:

Valuation Date	1/1/2017	1/1/2016
Applicable to Fiscal Year Ending	<u>12/31/2017</u>	<u>12/31/2016</u>
Total Required Contribution	\$9,293,814	\$9,084,864
% of Projected Annual Payroll	92.6%	91.8%
Member Contributions (Est.)	948,867	936,155
% of Projected Annual Payroll	9.5%	9.5%
City Required Contribution	8,344,947	8,148,709
% of Projected Annual Payroll	83.1%	82.3%

As you can see, the Total Required Contribution increased when compared to the results determined January 1, 2016. The increase is primarily due to lower investment returns than expected, contributions less than the required actuarially determined amount and higher assumed administrative expenses. Assets earned a 5.55% investment return (Actuarial basis) which fell short of the 6.50% assumption.

These increases were offset somewhat by salary increases that were less than expected.

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:   
\_\_\_\_\_  
Jason L. Franken, FSA, EA, MAAA

Plan Changes Since Prior Valuation

No plan changes have occurred since the prior valuation.

Actuarial Assumption/Method Changes Since Prior Valuation

There were no assumption or method changes since the prior valuation.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	<u>1/1/2017</u>	<u>1/1/2016</u>
<b>A. Participant Data</b>		
Number Included		
Actives	103	105
Service Retirees	86	86
Beneficiaries	30	34
Disability Retirees	21	22
Terminated Vested	<u>3</u>	<u>4</u>
Total	243	251
Total Annual Payroll	\$10,035,610	\$9,901,165
Payroll Under Assumed Ret. Age	10,035,610	9,901,165
Annual Rate of Payments to:		
Service Retirees	6,077,693	5,756,668
Beneficiaries	1,042,429	1,140,133
Disability Retirees	1,277,542	1,266,252
Terminated Vested	46,357	0
<b>B. Assets</b>		
Actuarial Value	73,120,605	69,312,907
Market Value	70,599,997	66,741,089
<b>C. Liabilities</b>		
Present Value of Benefits		
Actives		
Retirement Benefits	64,256,740	63,574,205
Disability Benefits	8,951,770	8,867,978
Death Benefits	1,414,403	1,419,087
Vested Benefits	2,544,613	2,500,938
Service Retirees	86,717,482	82,924,925
Beneficiaries	9,321,338	9,911,362
Disability Retirees	17,414,647	17,683,487
Terminated Vested	<u>941,226</u>	<u>71,908</u>
Total	191,562,219	186,953,890

C. Liabilities - (Continued)	<u>1/1/2017</u>	<u>1/1/2016</u>
Present Value of Future Salaries	106,077,831	105,652,974
Present Value of Future Member Contributions	10,029,659	9,989,489
Normal Cost (Retirement)	2,044,603	2,043,163
Normal Cost (Disability)	517,566	512,689
Normal Cost (Death)	85,637	85,910
Normal Cost (Vesting)	<u>148,164</u>	<u>155,636</u>
Total Normal Cost	2,795,970	2,797,398
Present Value of Future Normal Costs	27,371,759	27,832,405
Accrued Liability (Retirement)	44,031,405	42,991,664
Accrued Liability (Disability)	3,793,273	3,667,214
Accrued Liability (Death)	590,846	576,027
Accrued Liability (Vesting)	1,380,243	1,294,898
Accrued Liability (Inactives)	<u>114,394,693</u>	<u>110,591,682</u>
Total Actuarial Accrued Liability	164,190,460	159,121,485
Unfunded Actuarial Accrued Liability (UAAL)	91,069,855	89,808,578
Funded Ratio (AVA / AL)	44.5%	43.6%

	<u>1/1/2017</u>	<u>1/1/2016</u>
D. Actuarial Present Value of Accrued Benefits		
Vested Accrued Benefits		
Inactives	114,394,693	110,591,682
Actives	20,585,476	20,287,422
Member Contributions	<u>9,181,673</u>	<u>8,724,300</u>
Total	144,161,842	139,603,404
Non-vested Accrued Benefits	<u>1,114,654</u>	<u>1,407,817</u>
Total Present Value Accrued Benefits	145,276,496	141,011,221
Funded Ratio (MVA / PVAB)	48.6%	47.3%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:		
Plan Amendments	0	
Assumption Changes	0	
New Accrued Benefits	3,715,564	
Benefits Paid	(8,344,812)	
Interest	8,894,523	
Other	<u>0</u>	
Total	4,265,275	

Valuation Date	1/1/2017	1/1/2016
Applicable to Fiscal Year Ending	<u>12/31/2017</u>	<u>12/31/2016</u>

E. Pension Cost

Normal Cost (with interest)	\$2,977,708	\$2,979,229
% of Total Annual Payroll <sup>1</sup>	29.7	30.1
Administrative Expenses (with interest)	90,400	47,496
% of Total Annual Payroll <sup>1</sup>	0.9	0.5
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 24 years (as of 1/1/2017, with interest)	6,225,706	6,058,139
% of Total Annual Payroll <sup>1</sup>	62.0	61.2
Total Required Contribution	9,293,814	9,084,864
% of Total Annual Payroll <sup>1</sup>	92.6	91.8
Expected Member Contributions	948,867	936,155
% of Total Annual Payroll <sup>1</sup>	9.5	9.5
Expected City Contribution	8,344,947	8,148,709
% of Total Annual Payroll <sup>1</sup>	83.1	82.3

F. Past Contributions

Plan Years Ending:	<u>12/31/2016</u>
Total Required Contribution	9,145,907
City	8,148,709
Actual Contributions Made:	
Members (excluding buyback)	997,198
City	<u>7,396,641</u>
Total	8,393,839

G. Net Actuarial (Gain)/Loss	1,032,481
------------------------------	-----------

<sup>1</sup> Contributions developed as of 1/1/2017 are expressed as a percentage of total annual payroll at 1/1/2017 of \$10,035,610.

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

<u>Year</u>	<u>Projected Unfunded Accrued Liability<sup>1</sup></u>
2017	74,650,809
2018	73,277,406
2019	71,814,732
2025	60,811,224
2030	47,869,714
2036	25,872,035
2041	0

<sup>1</sup> Target funded percentage is 90%, so not all of the Unfunded Actuarial Accrued Liability is amortized.

I. (i) 3 Year Comparison of Actual and Assumed Salary Increases

		<u>Actual</u>	<u>Assumed</u>
Year Ended	12/31/2016	4.47%	4.34%
Year Ended	12/31/2015	3.32%	4.46%
Year Ended	12/31/2014	6.92%	4.39%

(ii) 3 Year Comparison of Investment Return on Actuarial Value

		<u>Actual</u>	<u>Assumed</u>
Year Ended	12/31/2016	5.55%	6.50%
Year Ended	12/31/2015	3.87%	6.50%
Year Ended	12/31/2014	6.96%	6.50%

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 Illinois Pension Code 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.



— Jason L. Franken, FSA, EA, MAAA  
Enrolled Actuary #17-6888 —

DEVELOPMENT OF JANUARY 1, 2017 AMORTIZATION PAYMENT

(1) Unfunded Actuarial Accrued Liability as of January 1, 2016	\$89,808,578
(2) Sponsor Normal Cost developed as of January 1, 2016	1,861,243
(3) Expected administrative expenses for the year ended December 31, 2016	44,597
(4) Expected interest on (1), (2) and (3)	5,959,988
(5) Sponsor contributions to the System during the year ended December 31, 2016	7,396,641
(6) Expected interest on (5)	240,391
(7) Expected Unfunded Actuarial Accrued Liability as of December 31, 2016, (1)+(2)+(3)+(4)-(5)-(6)	90,037,374
(8) Change to UAAL due to Assumption Change	0
(9) Change to UAAL due to Actuarial (Gain)/Loss	1,032,481
(10) Unfunded Accrued Liability as of January 1, 2017	91,069,855
(11) UAAL Subject to Amortization (90% AAL less Actuarial Assets)	74,650,809

<u>Date</u> <u>Established</u>	<u>Years</u> <u>Remaining</u>	<u>1/1/2017</u> <u>Amount</u>	<u>Amortization</u> <u>Amount</u>
1/1/2017	24	74,650,809	5,845,733

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of January 1, 2016	\$89,808,578
(2) Expected UAAL as of January 1, 2017	90,037,374
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	660,620
Salary Increases	(345,317)
Active Decrements	(85,047)
Inactive Mortality	204,505
Mortality Update/Other	<u>597,720</u>
Increase in UAAL due to (Gain)/Loss	1,032,481
Assumption Changes	<u>0</u>
(4) Actual UAAL as of January 1, 2017	\$91,069,855

## RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1) Contribution Determined as of January 1, 2016	\$8,148,709
(2) Summary of Contribution Impact by component:	
Change in Normal Cost	(1,521)
Change in Assumed Administrative Expense	42,904
Investment Return (Actuarial Asset Basis)	45,161
Salary Increases	(23,607)
New Entrants	0
Active Decrements	(5,814)
Inactive Mortality	13,980
Increase due to Contributions less than Required	60,806
Increase in Amortization Payment Due to Payroll Growth Assumption	0
Change in Expected Member Contributions	(12,712)
Assumption Change	0
Mortality Update/Other	<u>77,041</u>
Total Change in Contribution	196,238
(3) Contribution Determined as of January 1, 2017	\$8,344,947

## STATUTORY MINIMUM REQUIRED CONTRIBUTION

Contribution requirements shown on this page are calculated according to statutory minimum funding requirements of the Illinois Pension Code. We do not believe this method is sufficient to fund future benefits; as such, we recommend funding according to the contributions developed in Section E of this report.

Valuation Date	1/1/2017	1/1/2016
Applicable to Fiscal Year Ending	<u>12/31/2017</u>	<u>12/31/2016</u>
Actuarial Accrued Liability (PUC)	161,765,876	N/A
Actuarial Value of Assets	<u>73,120,605</u>	<u>N/A</u>
Unfunded Actuarial Accrued Liability (UAAL)	88,645,271	N/A
UAAL Subject to Amortization	72,468,683	N/A
Normal Cost (with interest)	\$3,042,888	N/A
% of Total Annual Payroll <sup>1</sup>	30.3	N/A
Administrative Expenses (with interest)	90,400	N/A
% of Total Annual Payroll <sup>1</sup>	0.9	N/A
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 24 years (as of 1/1/2017, with interest)	4,380,597	N/A
% of Total Annual Payroll <sup>1</sup>	43.7	N/A
Total Required Contribution	7,513,885	N/A
% of Total Annual Payroll <sup>1</sup>	74.9	N/A
Expected Member Contributions	948,867	N/A
% of Total Annual Payroll <sup>1</sup>	9.5	N/A
Expected City Contribution	6,565,018	N/A
% of Total Annual Payroll <sup>1</sup>	65.4	N/A

**Assumptions and Methods:**

Actuarial Cost Method  
Amortization Method

Projected Unit Credit  
90% Funding by 2040, level percent of payroll, 3.5%  
payroll growth assumption.

All other assumptions and methods are as described in the Actuarial Assumptions and Methods section.

<sup>1</sup> Contributions developed as of 1/1/2017 are expressed as a percentage of total annual payroll at 1/1/2017 of \$10,035,610.

PROJECTION OF BENEFIT PAYMENTS

Year	Payments for Current Actives	Payments for Current Inactives	Total Payments
2017	304,964	8,345,890	8,650,854
2018	558,482	8,426,727	8,985,210
2019	808,055	8,525,601	9,333,656
2020	1,080,690	8,625,182	9,705,872
2021	1,348,187	8,688,769	10,036,955
2022	1,625,746	8,737,441	10,363,188
2023	1,939,752	8,792,150	10,731,902
2024	2,283,274	8,815,338	11,098,611
2025	2,649,896	8,825,527	11,475,423
2026	3,031,952	8,822,594	11,854,546
2027	3,432,597	8,805,675	12,238,273
2028	3,866,101	8,774,064	12,640,165
2029	4,281,117	8,726,413	13,007,529
2030	4,712,357	8,660,821	13,373,178
2031	5,155,284	8,575,492	13,730,776
2032	5,635,486	8,468,561	14,104,047
2033	6,152,749	8,338,114	14,490,864
2034	6,700,588	8,182,585	14,883,173
2035	7,282,553	8,024,724	15,307,277
2036	7,840,728	7,816,390	15,657,118
2037	8,387,078	7,579,561	15,966,640
2038	8,937,502	7,314,115	16,251,617
2039	9,462,802	7,020,043	16,482,844
2040	9,964,995	6,698,335	16,663,330
2041	10,412,131	6,350,790	16,762,921
2042	10,843,083	5,980,074	16,823,157
2043	11,242,356	5,590,096	16,832,452
2044	11,635,085	5,185,329	16,820,414
2045	11,957,284	4,771,059	16,728,343
2046	12,214,938	4,353,571	16,568,509
2047	12,429,232	3,938,797	16,368,028
2048	12,607,123	3,532,221	16,139,344
2049	12,750,746	3,140,051	15,890,797
2050	12,859,704	2,767,662	15,627,366
2051	12,934,318	2,418,886	15,353,204
2052	12,975,722	2,096,989	15,072,711
2053	12,982,902	1,803,459	14,786,361
2054	12,955,323	1,538,587	14,493,910
2055	12,891,792	1,302,736	14,194,528
2056	12,791,680	1,095,221	13,886,901

## ACTUARIAL ASSUMPTIONS AND METHODS

Mortality Rate	RP-2000 Combined Healthy Mortality with a blue collar adjustment, projected to the valuation date with Scale BB.
Disabled Mortality Rate	RP-2000 Disabled Retiree Mortality, projected to the valuation date with Scale BB.
Interest Rate	6.50% per year compounded annually, net of investment related expenses. This is approximately supported by the target asset allocation and expected return of the asset classes. We will continue to monitor this to ensure that the rate continues to be supported.
Retirement Age	See table on following page. This is based on an experience study performed in 2012.
Disability Rate	See table on following page. 90% of the disabilities are assumed to be in the line of duty. This is based on an experience study performed in 2012.
Termination Rate	See table on following page. This is based on an experience study performed in 2012.
Salary Increases	Graded schedule based on age.

Age	Increase
25	7.36%
30	5.48%
35	4.53%
40	4.02%
45	3.81%
50	3.68%
55+	3.62%

Inflation	2.50%.
Payroll Growth	None.
Cost-of-Living Adjustment	<p><u>Tier 1</u>: 3.00% per year after age 55. Those that retire prior to age 55 receive an increase of 1/12 of 3.00% for each full month since benefit commencement upon reaching age 55.</p> <p><u>Tier 2</u>: 1.25% per year after the later of attainment of age 60 or first anniversary of retirement.</p>

Administrative Expenses	Expenses paid out of the fund other than investment-related expenses are assumed to be equal to those paid in the previous year.
Marital Status	80% of Members are assumed to be married.
Spouse's Age	Male spouses are assumed to be three years older than female spouses.
Funding Method	Entry Age Normal Cost Method.
Actuarial Asset Method	Investment gains and losses are smoothed over a 5-year period.
Funding Policy Amortization Method	The UAAL is amortized according to a Level Dollar method over a period ending in 2040. The amortization amount is 90% of the Accrued Liability less the Actuarial Value of Assets.

Decrement Tables

% Terminating During the Year		% Becoming Disabled During the Year		% Retiring During the Year	
Age	Rate	Age	Rate	Age	Rate
20	9.00%	20	0.10%	50 - 53	14.0%
25	5.00%	25	0.10%	54 - 59	20.0%
30	2.50%	30	0.20%	60 - 62	25.0%
35	2.00%	35	0.35%	63 - 64	33.0%
40	1.00%	40	0.50%	65 - 69	50.0%
45	1.00%	45	0.65%	70	100.0%
50	1.00%	50	1.00%		
55	1.00%	55	1.50%		
60	1.00%	60	3.00%		
65	1.00%	65	4.25%		

## GLOSSARY

Total Annual Payroll is the projected annual rate of pay for the fiscal year following the valuation date of all covered members.

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

Normal (Current Year's) Cost is the current year's cost for benefits yet to be funded.

Unfunded Accrued Liability is a liability which arises when a pension plan is initially established or improved and such establishment or improvement is applicable to all years of past service.

Total Required Contribution is equal to the Normal Cost plus an amount sufficient to amortize the Unfunded Accrued Liability over a period ending in 2040. The required amount is adjusted for interest according to the timing of contributions during the year.

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

- (a) The normal cost accrual rate equals:
  - (i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by
  - (ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age.
- (b) In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.
- (c) The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's accrued liability equals the present value, at the beneficiary's attained age, of future benefits. The unfunded accrued liability equals the total accrued liability less the actuarial value of assets.
- (d) Under this method, the entry age used for each active participant is the participant's age at the time he or she would have commenced participation if the plan had always been in existence under current terms, or the age as of which he or she first earns service credits for purposes of benefit accrual under the current terms of the plan.

STATEMENT OF FIDUCIARY NET POSITION  
December 31, 2016

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Money Market	1,917,349
 Total Cash and Equivalents	 1,917,349
Receivables:	
Interfund Receivable	18,038
Miscellaneous Receivables	5,138
Accrued Past Due Interest	149,245
 Total Receivable	 172,421
Investments:	
U.S. Gov't and Agency Obligations	4,610,530
Stocks	5,463,352
Corporate Bonds	13,369,878
Municipal Obligations	594,680
Mutual Funds	35,880,777
Pooled Investment Accounts	8,623,767
 Total Investments	 68,542,984
 Total Assets	 70,632,754
 <u>LIABILITIES</u>	
Liabilities:	
Payable:	
To Other Funds	5,000
Expenses	27,757
 Total Liabilities	 32,757
Net Assets:	
Active and Retired Members' Equity	70,599,997
 NET POSITION RESTRICTED FOR PENSIONS	 70,599,997
 TOTAL LIABILITIES AND NET ASSETS	 70,632,754

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION  
FOR THE YEAR ENDED December 31, 2016  
Market Value Basis

ADDITIONS

Contributions:

Member	997,198
City	7,396,641

Total Contributions 8,393,839

Investment Income:

Net Realized Gain (Loss)	127,138	
Unrealized Gain (Loss)	2,410,381	
Net Increase in Fair Value of Investments		2,537,519
Interest & Dividends		1,531,356
Less Investment Expense <sup>1</sup>		(174,111)

Net Investment Income 3,894,764

Total Additions 12,288,603

DEDUCTIONS

Distributions to Members:

Benefit Payments	8,339,703
Refund of Contributions/Transfers	5,109

Total Distributions 8,344,812

Administrative Expenses 84,883

Total Deductions 8,429,695

Net Increase in Net Position 3,858,908

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year 66,741,089

End of the Year 70,599,997

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

ACTUARIAL ASSET VALUATION

December 31, 2016

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 the Market Value of Assets.

Plan Year Ending	Gain/(Loss)	Gains/(Losses) Not Yet Recognized				
		Amounts Not Yet Recognized by Valuation Year				
		2017	2018	2019	2020	2021
12/31/2013	2,859,775	571,955	0	0	0	0
12/31/2014	(666,688)	(266,675)	(133,338)	0	0	0
12/31/2015	(4,120,159)	(2,472,095)	(1,648,064)	(824,032)	0	0
12/31/2016	(442,241)	(353,793)	(265,345)	(176,896)	(88,448)	0
Total		(2,520,608)	(2,046,747)	(1,000,928)	(88,448)	0

Development of Investment Gain/Loss

Market Value of Assets, 12/31/2015	66,741,088
Contributions Less Benefit Payments & Administrative Expenses	(35,856)
Expected Investment Earnings <sup>1</sup>	4,337,005
Actual Net Investment Earnings	<u>3,894,764</u>
2017 Actuarial Investment Gain/(Loss)	(442,241)

<sup>1</sup> Expected Investment Earnings = 6.50% x (66,741,088 + 0.5 x -35,856)

Development of Actuarial Value of Assets

Market Value of Assets, 12/31/2016	70,599,997
(Gains)/Losses Not Yet Recognized	<u>2,520,608</u>
Actuarial Value of Assets, 12/31/2016	73,120,605
(A) 12/31/2015 Actuarial Assets:	69,312,907
(I) Net Investment Income:	
1. Interest and Dividends	1,531,356
2. Realized Gains (Losses)	127,138
3. Change in Actuarial Value	2,359,171
4. Investment Expenses	<u>(174,111)</u>
Total	3,843,554
(B) 12/31/2016 Actuarial Assets:	73,120,605
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	5.55%
Market Value of Assets Rate of Return:	5.84%
12/31/2016 Limited Actuarial Assets:	73,120,605

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS  
December 31, 2016  
Actuarial Asset Basis

INCOME		
Contributions:		
Member	997,198	
City	7,396,641	
City for Members	0	
Total Contributions		8,393,839
Earnings from Investments		
Interest & Dividends	1,531,356	
Net Realized Gain (Loss)	127,138	
Change in Actuarial Value	2,359,171	
Total Earnings and Investment Gains		4,017,665
EXPENSES		
Administrative Expenses:		
Investment Related <sup>1</sup>	174,111	
Other	84,883	
Total Administrative Expenses		258,994
Distributions to Members:		
Benefit Payments	8,339,703	
Refund of Contributions/Transfers	5,109	
Total Distributions		8,344,812
Change in Net Assets for the Year		3,807,698
Net Assets Beginning of the Year		69,312,907
Net Assets End of the Year <sup>2</sup>		73,120,605

<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 <sup>1</sup>

	<u>1/1/2014</u>	<u>1/1/2015</u>	<u>1/1/2016</u>	<u>1/1/2017</u>
<u>Actives - Tier 1</u>				
Number	N/A	81	79	76
Average Current Age	N/A	42.7	43.4	44.0
Average Age at Employment	N/A	28.0	28.1	28.2
Average Past Service	N/A	14.7	15.3	15.8
Average Annual Salary	N/A	\$98,712	\$100,461	\$103,029
<u>Actives - Tier 2</u>				
Number	N/A	26	26	27
Average Current Age	N/A	30.1	30.8	31.8
Average Age at Employment	N/A	28.2	28.0	28.1
Average Past Service	N/A	1.9	2.8	3.7
Average Annual Salary	N/A	\$70,990	\$75,567	\$81,683
<u>Service Retirees</u>				
Number	90	86	86	86
Average Current Age	N/A	68.8	69.1	69.4
Average Annual Benefit	\$57,210	\$63,874	\$66,938	\$70,671
<u>Beneficiaries</u>				
Number	22	33	34	30
Average Current Age	N/A	67.6	70.7	68.3
Average Annual Benefit	\$31,720	\$32,135	\$33,533	\$34,748
<u>Disability Retirees</u>				
Number	24	23	22	21
Average Current Age	N/A	62.2	61.9	62.8
Average Annual Benefit	\$52,792	\$54,025	\$57,557	\$60,835
<u>Terminated Vested</u>				
Number	2	3	4	3
Average Current Age	N/A	31.5	33.1	39.4
Average Annual Benefit	N/A	N/A	N/A	\$46,357 <sup>2</sup>

<sup>1</sup> Foster & Foster does not have enough historical data to include complete data prior to 1/1/2015. We will add historical data going forward.

<sup>2</sup> Average Annual Benefit for Terminated Vested members reflects the benefit for members entitled to a future annual benefit from the plan.

## 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	0	0	0	0	0	0	0	0	0	0	0	0
25 - 29	0	0	1	0	0	2	3	1	0	1	1	9
30 - 34	0	0	1	0	4	4	8	6	1	1	0	25
35 - 39	0	0	0	1	1	5	4	2	2	0	1	16
40 - 44	0	0	2	1	0	6	3	1	2	3	0	18
45 - 49	0	1	1	0	0	6	6	2	2	0	2	20
50 - 54	0	0	1	0	0	1	1	2	2	0	0	7
55 - 59	1	0	0	0	0	3	2	0	1	0	0	7
60 - 64	0	0	0	0	0	1	0	0	0	0	0	1
65+	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	6	2	5	28	27	14	10	5	4	103

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 1/1/2016	105
b. Terminations	
i. Vested (partial or full) with deferred benefits	(1)
ii. Non-vested or full lump sum distribution received	0
iii. Transferred service to other fund	0
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	<u>(2)</u>
f. Continuing participants	102
g. New entrants	<u>1</u>
h. Total active life participants in valuation	103

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

	Service Retirees, Vested Receiving <u>Benefits</u>	Receiving Death <u>Benefits</u>	Receiving Disability <u>Benefits</u>	Vested <u>Deferred</u>	<u>Total</u>
a. Number prior valuation	86	34	22	4	146
Retired	2	0	0	0	2
Vested Deferred	0	0	0	1	1
Death, With Survivor	0	2	(1)	0	1
Death, No Survivor	(2)	(6)	0	0	(8)
Disabled	0	0	0	0	0
Refund of Contributions	0	0	0	(2)	(2)
Rehires	0	0	0	0	0
Expired Annuities	0	0	0	0	0
Data Corrections	0	0	0	0	0
Hired/Termed in Same Year	0	0	0	0	0
b. Number current valuation	86	30	21	3	140

## SUMMARY OF CURRENT PLAN

### Article 4 Pension Fund

The Plan is established and administered as prescribed by “Article 4. Firefighters’ Pension Fund – Municipalities 500,000 and Under” of the Illinois Pension Code.

### Plan Administration

The Plan is administered by a Board of Trustees comprised of:

- a) Two members appointed by the Municipality,
- b) Two active Members of the Fire Department elected by the Membership, and
- c) One retired Member of the Fire Department elected by the Membership.

### Credited Service

Years and fractional parts of years of service (except as noted below) as a sworn Firefighter employed by the Municipality.

### Salary

Annual salary, including longevity, attached to firefighter’s rank, as established by the municipality appropriation ordinance, excluding overtime pay, bonus pay and holiday pay except for the base 8 hours of the 10 pensionable holidays which is included.

### Normal Retirement

#### Date

**Tier 1:** Age 50 and 20 years of Credited Service.

**Tier 2:** Age 55 and 10 years of service.

#### Benefit

**Tier 1:** 50% of annual salary attached to rank on last day of service plus 2.50% of annual salary for each year of service over 20 years, up to a maximum of 75% of salary. The minimum monthly benefit is \$1,159.27 per month.

**Tier 2:** 2.50% per year of service times the average salary for the eight consecutive years prior to retirement times the number of years of service, up to a maximum of 75% of average salary. The minimum monthly benefit is \$1,159.27 per month.

#### Form of Benefit

**Tier 1:** For married retirees, an annuity payable for the life of the Member; upon the death of the member, 100% of the Member’s benefit payable to the spouse until death. For unmarried retirees, the normal form is a Single Life Annuity.

**Tier 2:** Same as above, but with 66 2/3% of benefit continued to spouse.

Early Retirement

Date	<b>Tier 1:</b> Age 60 and 10 years of Credited Service. <b>Tier 2:</b> Age 50 and 10 years of service.
Benefit	<b>Tier 1:</b> 1.5% plus 0.1% for each year of service in excess of 10 years, times salary x service (complete years). <b>Tier 2:</b> Normal Retirement Benefit, reduced 6% for each year before age 55, with no minimum benefit.
Form of Benefit	Same as Normal Retirement

Disability Benefit

Eligibility Total and permanent as determined by the Board of Trustees. Seven years of service required for non-service connected disability.

Benefit Amount A maximum of:  
a.) 65% of salary attached to the rank held by Member on last day of service, and;  
b.) The monthly retirement pension that the Member is entitled to receive if he or she retired immediately.

For non-service connected disabilities, a benefit of 50% of salary attached to rank held by Member on last day of service.

Cost-of-Living Adjustment

**Tier 1:**  
*Retirees:* An annual increase equal to 3.00% per year after age 55. Those that retire prior to age 55 receive an increase of 1/12 of 3.00% for each full month since benefit commencement upon reaching age 55.  
*Disabled Retirees:* An annual increase equal to 3.00% per year of the original benefit amount beginning at age 60. Those that become disabled prior to age 60 receive an increase of 3.00% of the original benefit amount for each year since benefit commencement upon reaching age 60.  
**Tier 2:** An annual increase each January 1 equal to 3.00% per year or one-half of the annual unadjusted percentage increase in the consumer price index-u for the 12 months ending with the September preceding each November 1, whichever is less, of the original pension after the attainment of age 60 or first anniversary of pension start date whichever is later.

Pre-Retirement Death Benefit

Service Incurred	100% of salary attached to rank held by Member on last day of service.
Non-Service Incurred	A maximum of: a.) 54% of salary attached to the rank held by Member on last day of service, and; b.) The monthly retirement pension earned by the deceased Member at the time of death, regardless of whether death occurs before or after age 50.

Vesting (Termination)

Vesting Service Requirement	10 years.
Non-Vested Benefit	Refund of Member Contributions.
Vested Benefit	Either the termination benefit, payable upon reaching age 60 (55 for Tier 2, provided contributions are not withdrawn, or a refund of member contributions.
Termination Benefit	Based on the monthly salary attached to the Member's rank at separation from service and equals:  <b>Tier 1:</b> 1.5% plus 0.1% for each year of service in excess of 10 years, times salary x service (based on complete years).  <b>Tier 2:</b> 2.50% of 8-year final average salary times creditable service.

Contributions

Employee	9.455% of Salary.
Municipality	Remaining amount necessary for payment of Normal (current year's) Cost and amortization of the accrued past service liability.