

CITY OF ROCHELLE
POLICE PENSION FUND
ACTUARIAL VALUATION
AS OF JANUARY 1, 2018
CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING DECEMBER 31, 2019

August 31, 2018

Board of Trustees
Rochelle Police Department
Police Pension Fund
420 N. 6th Street
Rochelle, IL 61068

Re: Actuarial Valuation Report – City of Rochelle Police Pension Fund

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Rochelle Police 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 3, 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.

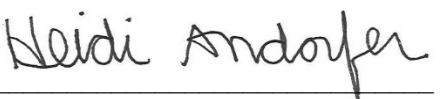
To our knowledge, no associate of Foster & Foster, Inc. working on valuations of the program has any direct financial interest or indirect material interest in the City of Rochelle, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the City of Rochelle Police Pension 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, FSA, EA, MAAA

By: 
Heidi E. Andorfer, FSA, EA, MAAA

JLF/lke
Enclosures

TABLE OF CONTENTS

Section	Title	Page
I	Introduction	
	a. Summary of Report	5
	b. Changes Since Prior Valuation	6
	c. Comparative Summary of Principal Valuation Results	7
II	Valuation Information	
	a. Development of Amortization Payment	12
	b. Detailed Actuarial (Gain)/Loss Analysis	13
	c. Reconciliation of Changes in Contribution Requirement	14
	d. Statutory Minimum Required Contribution	15
	e. Projection of Benefit Payments	16
	f. Actuarial Assumptions and Methods	17
	g. Glossary	19
III	Trust Fund	20
IV	Member Statistics	
	a. Statistical Data	24
	b. Age and Service Distribution	25
	c. Valuation Participant Reconciliation	26
V	Summary of Current Plan	27

SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Rochelle Police Pension Fund, performed as of January 1, 2018, 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, 2019.

The contribution requirements, compared with those set forth in the January 1, 2017 actuarial report, are as follows:

Valuation Date Applicable to Fiscal Year Ending	<u>1/1/2018</u> <u>12/31/2019</u>	<u>1/1/2017</u> <u>12/31/2018</u>
Total Recommended Contribution	\$818,671	\$807,259
% of Projected Annual Payroll	58.5%	57.7%
Member Contributions (Est.)	138,615	138,765
% of Projected Annual Payroll	9.9%	9.9%
City Recommended Contribution	680,056	668,494
% of Projected Annual Payroll	48.6%	47.8%

As you can see, the Total Recommended Contribution, shows an increase when compared to the results determined in the January 1, 2017 actuarial valuation report. The increase is attributable plan losses over the past year, the natural increase in the contribution due to the payroll growth applied to the amortization of the unfunded liability, and the shortfall between the actual contribution and the actuarial recommended contribution. The increase was largely offset by assumption changes made to the plan during the year.

Unfavorable plan experience resulted from assets that earned a 4.19% investment return (Actuarial basis) which fell short of the 6.75% assumption and no inactive deaths. These losses were partially offset by actives decrement experience that differed from expected and salary increases that were lower than assumed at ages closer to retirement.

CHANGES SINCE PRIOR VALUATION

Plan Changes Since Prior Valuation

No plan changes have occurred since the prior valuation.

Actuarial Assumption/Method Changes Since Prior Valuation

Based on the results of the 2017 Department of Insurance experience study, the following assumption changes were made:

- Updated retirement, termination and disability rate tables.
- Updated assumed salary increase rates.
- Updated the percentage of disabilities assumed to be in the line of duty from 70% to 60%.
- Updated the percentage of deaths assumed to be in the line of duty from 5% to 10%.
- Reduced assumed payroll growth rate from 4.00% to 3.50%.

There were no method changes since the prior valuation.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	New Assump <u>1/1/2018</u>	Old Assump <u>1/1/2018</u>	<u>1/1/2017</u>
A. Participant Data			
Number Included			
Actives	18	18	19
Service Retirees	11	11	11
Beneficiaries	7	7	7
Disability Retirees	0	0	0
Terminated Vested	<u>1</u>	<u>1</u>	<u>1</u>
Total	37	37	38
Total Annual Payroll	\$1,398,738	\$1,398,738	\$1,400,253
Payroll Under Assumed Ret. Age	1,398,738	1,398,738	1,400,253
Annual Rate of Payments to:			
Service Retirees	566,224	566,224	551,198
Beneficiaries	297,407	297,407	297,407
Disability Retirees	0	0	0
Terminated Vested	0	0	0
B. Assets			
Actuarial Value	11,491,222	11,491,222	11,329,782
Market Value	11,278,351	11,278,351	10,384,619
C. Liabilities			
Present Value of Benefits			
Actives			
Retirement Benefits	8,535,087	8,635,327	8,154,360
Disability Benefits	694,636	880,888	903,582
Death Benefits	195,735	175,330	175,559
Vested Benefits	653,339	941,167	1,006,502
Service Retirees	8,104,897	8,104,897	8,040,663
Beneficiaries	3,030,906	3,030,906	3,089,919
Disability Retirees	0	0	0
Terminated Vested	<u>28,835</u>	<u>28,835</u>	<u>28,835</u>
Total	21,243,435	21,797,350	21,399,420

C. Liabilities - (Continued)	New Assump <u>1/1/2018</u>	Old Assump <u>1/1/2018</u>	<u>1/1/2017</u>
Present Value of Future Salaries	13,958,832	13,932,679	14,825,139
Present Value of Future Member Contributions	1,383,320	1,380,728	1,469,171
Normal Cost (Retirement)	268,320	282,526	280,076
Normal Cost (Disability)	43,343	53,509	53,045
Normal Cost (Death)	9,431	8,536	8,423
Normal Cost (Vesting)	<u>34,873</u>	<u>49,169</u>	<u>50,293</u>
Total Normal Cost	355,967	393,740	391,837
Present Value of Future Normal Costs	3,232,487	3,558,704	3,798,649
Accrued Liability (Retirement)	6,009,852	5,973,682	5,337,474
Accrued Liability (Disability)	291,691	377,606	370,582
Accrued Liability (Death)	119,602	109,402	104,999
Accrued Liability (Vesting)	425,165	613,318	628,299
Accrued Liability (Inactives)	<u>11,164,638</u>	<u>11,164,638</u>	<u>11,159,417</u>
Total Actuarial Accrued Liability	18,010,948	18,238,646	17,600,771
Unfunded Actuarial Accrued Liability (UAAL)	6,519,726	6,747,424	6,270,989
Funded Ratio (AVA / AL)	63.8%	63.0%	64.4%

	New Assump <u>1/1/2018</u>	Old Assump <u>1/1/2018</u>	<u>1/1/2017</u>
D. Actuarial Present Value of Accrued Benefits			
Vested Accrued Benefits			
Inactives	11,164,638	11,164,638	11,159,417
Actives	1,015,102	1,119,593	829,540
Member Contributions	<u>1,372,543</u>	<u>1,372,543</u>	<u>1,287,711</u>
Total	13,552,283	13,656,774	13,276,668
Non-vested Accrued Benefits	<u>776,409</u>	<u>782,475</u>	<u>609,758</u>
Total Present Value Accrued Benefits	14,328,692	14,439,249	13,886,426
Funded Ratio (MVA / PVAB)	78.7%	78.1%	74.8%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:			
Plan Amendments	0	0	
Assumption Changes	(110,557)	0	
New Accrued Benefits	0	570,918	
Benefits Paid	0	(924,236)	
Interest	0	906,141	
Other	<u>0</u>	<u>0</u>	
Total	(110,557)	552,823	

	New Assump	Old Assump	
Valuation Date	1/1/2018	1/1/2018	1/1/2017
Applicable to Fiscal Year Ending	<u>12/31/2019</u>	<u>12/31/2019</u>	<u>12/31/2018</u>

E. Pension Cost

Normal Cost ¹	\$379,995	\$420,317	\$418,286
% of Total Annual Payroll ¹	27.2	30.0	29.9
Administrative Expenses ¹	22,308	22,308	18,483
% of Total Annual Payroll ¹	1.6	1.6	1.3
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 23 years (as of 1/1/2018) ¹	416,368	411,121	370,490
% of Total Annual Payroll ¹	29.7	29.4	26.5
Total Recommended Contribution	818,671	853,746	807,259
% of Total Annual Payroll ¹	58.5	61.0	57.7
Expected Member Contributions ¹	138,615	138,615	138,765
% of Total Annual Payroll ¹	9.9	9.9	9.9
Expected City Contribution	680,056	715,131	668,494
% of Total Annual Payroll ¹	48.6	51.1	47.8

F. Past Contributions

Plan Years Ending:	<u>12/31/2017</u>
Total Recommended Contribution	777,180
City	636,794
Actual Contributions Made:	
Members (excluding buyback)	140,386
City	<u>497,804</u>
Total	638,190

G. Net Actuarial (Gain)/Loss 279,696

¹ Contributions developed as of 1/1/2018 displayed above have been adjusted to account for assumed interest.

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

<u>Year</u>	<u>Projected Unfunded Accrued Liability</u>
2018	6,519,726
2019	6,543,440
2020	6,554,182
2025	6,360,735
2031	5,328,704
2036	3,408,532
2041	0

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	12/31/2017	5.47%	5.45%
Year Ended	12/31/2016	3.73%	5.58%
Year Ended	12/31/2015	4.52%	3.96%

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	12/31/2017	4.19%	6.75%
Year Ended	12/31/2016	2.96%	6.75%
Year Ended	12/31/2015	2.42%	6.75%

DEVELOPMENT OF JANUARY 1, 2018 AMORTIZATION PAYMENT

(1) Unfunded Actuarial Accrued Liability as of January 1, 2017	\$6,270,989
(2) Sponsor Normal Cost developed as of January 1, 2017	253,072
(3) Expected administrative expenses for the year ended December 31, 2017	17,314
(4) Expected interest on (1), (2) and (3)	440,958
(5) Sponsor contributions to the System during the year ended December 31, 2017	497,804
(6) Expected interest on (5)	16,801
(7) Expected Unfunded Actuarial Accrued Liability as of December 31, 2017, (1)+(2)+(3)+(4)-(5)-(6)	6,467,728
(8) Change to UAAL due to Assumption Change	(227,698)
(9) Change to UAAL due to Actuarial (Gain)/Loss	279,696
(10) Unfunded Accrued Liability as of January 1, 2018	6,519,726
(11) UAAL Subject to Amortization (100% AAL less Actuarial Assets)	6,519,726

<u>Date</u> <u>Established</u>	<u>Years</u> <u>Remaining</u>	<u>1/1/2018</u> <u>Amount</u>	<u>Amortization</u> <u>Amount</u>
1/1/2018	23	6,519,726	390,040

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of January 1, 2017	\$6,270,989
(2) Expected UAAL as of January 1, 2018	6,467,728
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	286,018
Salary Increases	(30,258)
Active Decrements	(204,299)
Inactive Mortality	99,398
Other	<u>128,837</u>
Change in UAAL due to (Gain)/Loss	279,696
Assumption Changes	<u>(227,698)</u>
(4) Actual UAAL as of January 1, 2018	\$6,519,726

RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1) Contribution Determined as of January 1, 2017	\$668,494
(2) Summary of Contribution Impact by component:	
Change in Normal Cost	2,031
Change in Assumed Administrative Expense	3,825
Investment Return (Actuarial Asset Basis)	17,427
Salary Increases	(1,844)
New Entrants	-
Active Decrements	(12,448)
Inactive Mortality	6,056
Data Corrections	-
Contributions (More) or Less than Recommended	8,754
Increase in Amortization Payment Due to Payroll Growth Assumption	14,820
Change in Expected Member Contributions	150
Assumption Change	(35,075)
Other	7,866
Total Change in Contribution	11,562
(3) Contribution Determined as of January 1, 2018	\$680,056

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.

	New Assump	Old Assump	
Valuation Date	1/1/2018	1/1/2018	1/1/2017
Applicable to Fiscal Year Ending	<u>12/31/2019</u>	<u>12/31/2019</u>	<u>12/31/2018</u>
Actuarial Accrued Liability (PUC)	17,175,592	17,566,197	16,906,692
Actuarial Value of Assets	<u>11,491,222</u>	<u>11,491,222</u>	<u>11,329,782</u>
Unfunded Actuarial Accrued Liability (UAAL)	5,684,370	6,074,975	5,576,910
UAAL Subject to Amortization	3,966,811	4,318,355	3,886,241
Normal Cost ¹	\$432,943	\$461,384	\$447,661
% of Total Annual Payroll ¹	31.0	33.0	32.0
Administrative Expenses ¹	22,308	22,308	18,483
% of Total Annual Payroll ¹	1.6	1.6	1.3
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 23 years (as of 1/1/2018) ¹	253,332	263,118	229,599
% of Total Annual Payroll ¹	18.1	18.8	16.4
Total Required Contribution	708,583	746,810	695,743
% of Total Annual Payroll ¹	50.7	53.4	49.7
Expected Member Contributions ¹	138,615	138,615	138,765
% of Total Annual Payroll ¹	9.9	9.9	9.9
Expected City Contribution	569,968	608,195	556,978
% of Total Annual Payroll ¹	40.8	43.5	39.8

Assumptions and Methods:

Actuarial Cost Method	Projected Unit Credit
Amortization Method	90% Funding by 2040

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

¹ Contributions developed as of 1/1/2018 displayed above have been adjusted to account for assumed interest.

PROJECTION OF BENEFIT PAYMENTS

Year	Payments for Current Actives	Payments for Current Inactives	Total Payments
2018	7,758	885,912	893,670
2019	21,777	865,442	887,219
2020	36,852	878,971	915,823
2021	50,496	887,183	937,679
2022	76,115	894,279	970,394
2023	127,817	900,076	1,027,893
2024	188,665	904,429	1,093,094
2025	253,806	907,110	1,160,916
2026	338,662	907,900	1,246,562
2027	419,179	906,576	1,325,755
2028	491,976	902,961	1,394,937
2029	567,195	896,826	1,464,021
2030	636,382	887,979	1,524,361
2031	708,369	876,304	1,584,673
2032	767,117	861,689	1,628,806
2033	820,086	844,062	1,664,148
2034	892,385	823,356	1,715,741
2035	970,671	799,534	1,770,205
2036	1,076,056	772,606	1,848,662
2037	1,155,354	742,691	1,898,045
2038	1,227,898	709,952	1,937,850
2039	1,306,934	674,614	1,981,548
2040	1,375,662	636,968	2,012,630
2041	1,458,704	597,377	2,056,081
2042	1,518,037	556,295	2,074,332
2043	1,570,529	514,264	2,084,793
2044	1,654,311	471,803	2,126,114
2045	1,709,961	429,512	2,139,473
2046	1,761,163	388,009	2,149,172
2047	1,798,018	347,936	2,145,954
2048	1,830,113	309,913	2,140,026
2049	1,858,408	274,289	2,132,697
2050	1,882,645	241,375	2,124,020
2051	1,902,722	211,426	2,114,148
2052	1,917,246	184,344	2,101,590
2053	1,926,346	159,990	2,086,336
2054	1,930,273	138,261	2,068,534
2055	1,927,850	118,951	2,046,801
2056	1,919,094	101,807	2,020,901
2057	1,903,318	86,568	1,989,886

ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate	6.75% per year compounded annually, net of investment related expenses.
Mortality Rate	<p>Healthy Lives: RP-2000 Combined Healthy Mortality with a blue collar adjustment, projected to the valuation date with Scale BB. 10% of active deaths are assumed to be in the line of duty.</p> <p>Disabled Lives: RP-2000 Disabled Retiree Mortality, projected to the valuation date with Scale BB.</p> <p>The mortality assumptions sufficiently accommodate future mortality improvements.</p>
Retirement Age	See table on following page. This is based on an experience study performed in 2017.
Disability Rate	See table on following page. 60% of the disabilities are assumed to be in the line of duty. This is based on an experience study performed in 2017.
Termination Rate	See table on following page. This is based on an experience study performed in 2017.
Salary Increases	Graded schedule based on service. This is based on an experience study performed in 2017.

Salary Scale	
Service	Rate
0	11.00%
1	10.75%
2	8.75%
3	8.50%
4	7.00%
5	6.25%
6	5.25%
7	4.25%
8 - 16	4.00%
17 - 32	3.75%
32+	3.50%

Inflation 2.50%.

Cost-of-Living Adjustment	<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. <u>Tier 2</u> : 1.25% per year after the later of attainment of age 60 or first anniversary of retirement.
Marital Status	80% of Members are assumed to be married.
Spouse's Age	Males are assumed to be three years older than females.
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 Percentage of Payroll method over a period ending in 2040. The initial amortization amount is 100% of the Accrued Liability less the Actuarial Value of Assets.
Payroll Growth	3.50% per year.
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.

Decrement Tables

% Terminating During the Year		% Becoming Disabled During the Year		% Retiring During the Year (Tier 1)		% Retiring During the Year (Tier 2)	
Age	Rate	Age	Rate	Age	Rate	Age	Rate
20	14.00%	20	0.000%	50 - 51	15%	50 - 54	5%
25	10.40%	25	0.030%	52 - 54	20%	55	40%
30	5.60%	30	0.140%	55 - 64	25%	56 - 64	25%
35	3.10%	35	0.260%	65 - 69	40%	65 - 69	40%
40	1.90%	40	0.420%	70+	100%	70+	100%
45	1.50%	45	0.590%				
50	1.50%	50	0.710%				
56+	0.00%	55	0.900%				
		60	1.150%				

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 Recommended Contribution is equal to the Normal Cost plus an amount sufficient to amortize the Unfunded Accrued Liability over a period ending in 2040. The recommended 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, 2017

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Checking Account	89,927
Money Market	457,418
Total Cash and Equivalents	547,345
Receivables:	
Accrued Past Due Interest	22,518
Total Receivable	22,518
Investments:	
Corporate Bonds	1,456,960
U.S. Gov't and Agency Obligations	1,914,946
Stocks	1,295,391
Mutual Funds	6,041,191
Total Investments	10,708,488
Total Assets	11,278,351
 <u>LIABILITIES</u>	
Total Liabilities	0
Net Assets:	
Active and Retired Members' Equity	11,278,351
NET POSITION RESTRICTED FOR PENSIONS	11,278,351
TOTAL LIABILITIES AND NET ASSETS	11,278,351

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
 FOR THE YEAR ENDED December 31, 2017
 Market Value Basis

ADDITIONS

Contributions:

Member	140,386
City	497,804

Total Contributions 638,190

Investment Income:

Net Realized Gain (Loss)	0
Unrealized Gain (Loss)	927,777
Net Increase in Fair Value of Investments	927,777
Interest & Dividends	333,803
Less Investment Expense ¹	(60,905)

Net Investment Income 1,200,675

Total Additions 1,838,865

DEDUCTIONS

Distributions to Members:

Benefit Payments	863,630
Refund of Contributions/Transfers	60,606

Total Distributions 924,236

Administrative Expenses 20,897

Total Deductions 945,133

Net Increase in Net Position 893,732

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year 10,384,619

End of the Year 11,278,351

¹ Investment Related expenses include investment advisory, custodial and performance monitoring fees.

ACTUARIAL ASSET VALUATION

December 31, 2017

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				
		2018	2019	2020	2021	2022
4/30/2014	(211,603)	(14,107)	0	0	0	0
4/30/2015	(240,118)	(64,031)	(16,008)	0	0	0
4/30/2016	(1,000,146)	(466,735)	(266,706)	(66,676)	0	0
12/31/2016	(126,760)	(76,056)	(50,704)	(25,352)	0	0
12/31/2017	510,073	408,058	306,044	204,029	102,015	0
Total		(212,871)	(27,374)	112,001	102,015	0

Development of Investment Gain/Loss

Market Value of Assets, 12/31/2016	10,384,619
Contributions Less Benefit Payments & Administrative Expenses	(306,943)
Expected Investment Earnings ¹	690,602
Actual Net Investment Earnings	<u>1,200,675</u>
2017 Actuarial Investment Gain/(Loss)	510,073

¹ Expected Investment Earnings = 6.75% x (10,384,619 + 0.5 x -306,943)

Development of Actuarial Value of Assets

Market Value of Assets, 12/31/2017	11,278,351
(Gains)/Losses Not Yet Recognized	<u>212,871</u>
Actuarial Value of Assets, 12/31/2017	11,491,222
(A) 12/31/2016 Actuarial Assets:	11,329,782
(I) Net Investment Income:	
1. Interest and Dividends	333,803
2. Realized Gains (Losses)	0
3. Change in Actuarial Value	195,485
4. Investment Expenses	<u>(60,905)</u>
Total	468,383
(B) 12/31/2017 Actuarial Assets:	11,491,222
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	4.19%
Market Value of Assets Rate of Return:	11.74%
12/31/2017 Limited Actuarial Assets:	11,491,222
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	(286,018)

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
December 31, 2017
Actuarial Asset Basis

INCOME		
Contributions:		
Member	140,386	
City	497,804	
Total Contributions		638,190
Earnings from Investments		
Interest & Dividends	333,803	
Net Realized Gain (Loss)	0	
Change in Actuarial Value	195,485	
Total Earnings and Investment Gains		529,288
EXPENSES		
Administrative Expenses:		
Investment Related ¹	60,905	
Other	20,897	
Total Administrative Expenses		81,802
Distributions to Members:		
Benefit Payments	863,630	
Refund of Contributions/Transfers	60,606	
Total Distributions		924,236
Change in Net Assets for the Year		161,440
Net Assets Beginning of the Year		11,329,782
Net Assets End of the Year ²		11,491,222

¹ Investment Related expenses include investment advisory, custodial and performance monitoring fees.

² Net Assets may be limited for actuarial consideration.

STATISTICAL DATA ¹

	<u>5/1/2015</u>	<u>5/1/2016</u>	<u>1/1/2017</u>	<u>1/1/2018</u>
<u>Actives - Tier 1</u>				
Number	N/A	16	16	15
Average Current Age	N/A	40.0	40.7	42.3
Average Age at Employment	N/A	27.5	27.3	27.7
Average Past Service	N/A	12.5	13.4	14.6
Average Annual Salary	N/A	\$73,972	\$76,808	\$80,870
<u>Actives - Tier 2</u>				
Number	N/A	3	3	3
Average Current Age	N/A	31.0	31.6	32.6
Average Age at Employment	N/A	28.7	28.6	28.6
Average Past Service	N/A	2.3	3.0	4.0
Average Annual Salary	N/A	\$55,453	\$57,110	\$61,894
<u>Service Retirees</u>				
Number	11	11	11	11
Average Current Age	N/A	66.1	66.7	67.7
Average Annual Benefit	\$53,124	\$50,109	\$50,109	\$51,475
<u>Beneficiaries</u>				
Number	6	7	7	7
Average Current Age	N/A	65.8	67.3	68.3
Average Annual Benefit	\$33,217	\$42,487	\$42,487	\$42,487
<u>Disability Retirees</u>				
Number	0	0	0	0
Average Current Age	N/A	N/A	N/A	N/A
Average Annual Benefit	N/A	N/A	N/A	N/A
<u>Terminated Vested</u>				
Number	0	1	1	1
Average Current Age	N/A	39.9	40.6	41.6
Average Annual Benefit ²	N/A	N/A	N/A	N/A

¹ Foster & Foster does not have enough historical data to include complete data prior to 5/1/2016. We will add historical data going forward.

² Average Annual Benefit for Terminated Vested members reflects the benefit for members entitled to a future annual benefit from the plan. The terminated vested member is due accumulated contributions only.

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	0	1	0	0	0	0	0	0	0	1
30 - 34	0	0	1	0	0	1	3	0	0	0	0	5
35 - 39	0	0	0	0	0	1	1	0	0	0	0	2
40 - 44	0	0	0	0	0	0	1	2	0	0	0	3
45 - 49	0	0	0	0	0	0	1	4	1	0	0	6
50 - 54	0	0	0	0	0	0	0	1	0	0	0	1
55 - 59	0	0	0	0	0	0	0	0	0	0	0	0
60 - 64	0	0	0	0	0	0	0	0	0	0	0	0
65+	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	2	6	7	1	0	0	18

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 1/1/2017	19
b. Terminations	
i. Vested (partial or full) with deferred benefits	0
ii. Non-vested or full lump sum distribution received	(1)
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>0</u>
f. Continuing participants	18
g. New entrants	<u>0</u>
h. Total active life participants in valuation	18

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	11	7	0	1	19
Retired	0	0	0	0	0
Vested Deferred	0	0	0	0	0
Death, With Survivor	0	0	0	0	0
Death, No Survivor	0	0	0	0	0
Disabled	0	0	0	0	0
Refund of Contributions	0	0	0	0	0
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	11	7	0	1	19

SUMMARY OF CURRENT PLAN

Article 3 Pension Fund

The Plan is established and administered as prescribed by “Article 3. Police 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 Police Department elected by the Membership, and
- c) One retired Member of the Police Department elected by the Membership.

Credited Service

Complete years of service as a sworn police officer employed by the Municipality.

Normal Retirement

Date

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

Tier 2: Age 55 with 10 years of Credited 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 \$1,000 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 \$1,000 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

Tier 1: Age 60 and 8 years of Credited Service.

Tier 2: Age 50 with 10 years of Credited Service.

Benefit

Tier 1: Normal Retirement benefit with no minimum.

Tier 2: Normal Retirement benefit, reduced 6% 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.

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.) 50% 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.

For non-service deaths with less than 10 years of service, a refund of member contributions is provided.

Vesting (Termination)

Vesting Service Requirement	Tier 1: 8 years. Tier 2: 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. The termination benefit is 2.50% of annual salary held in the year prior to termination (8-year final average salary for Tier 2) times creditable service.

Contributions

Employee	9.91% of Salary.
Municipality	Remaining amount necessary for payment of Normal (current year's) Cost and amortization of the accrued past service liability.