

CITY OF GENEVA
POLICE PENSION FUND
ACTUARIAL VALUATION
AS OF MAY 1, 2018
CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING APRIL 30, 2020
GASB 67/68 DISCLOSURE INFORMATION
AS OF APRIL 30, 2018

August 8, 2018

Ms. Rita Kruse
Finance Manager
City of Geneva
22 South First Street
Geneva, Illinois 60134

Re: Actuarial Valuation Report (including GASB Statements No. 67 and No. 68) – Geneva Police Pension Fund

Dear Ms. Kruse:

We are pleased to present to the City this report of the annual actuarial valuation of the Geneva Police Pension Fund. Included are the related results for GASB Statements No. 67 and No. 68. The funding 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. The calculation of the liability for GASB results was performed for the purpose of satisfying the requirements of GASB Statements No. 67 and No. 68. Use of the results for other purposes may not be applicable and produce significantly different results.

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. Due to an actuarial transition, we were not able to perform a full review of the actuarial assumptions prior to the completion of this report and have relied on many of the assumptions used by the prior actuary. A full review of every assumption will be completed prior to next year's valuation. 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 City, 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 total pension liability, net pension liability, and certain sensitivity information shown in the GASB results are based on an actuarial valuation performed as of the valuation date.

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 Geneva, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Geneva 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. Statutory Minimum Required Contribution	13
	c. Projection of Benefit Payments	14
	d. Actuarial Assumptions and Methods	15
	e. Glossary	17
III	Trust Fund	18
IV	Member Statistics	
	a. Statistical Data	22
	b. Age and Service Distribution	23
	c. Valuation Participant Reconciliation	24
V	Summary of Current Plan	25
VI	Governmental Accounting Standards Board Statements No. 67 and No. 68 Disclosure Information	28

SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Geneva Police Pension Fund, performed as of May 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 April 30, 2020.

The contribution requirements, compared with those set forth in the May 1, 2017 actuarial report as issued by Timothy W. Sharpe, are as follows:

Valuation Date Applicable to Fiscal Year Ending	5/1/2018 <u>4/30/2020</u>	5/1/2017 <u>4/30/2019</u> ¹
Total Recommended Contribution	\$1,912,760	\$1,706,761
% of Projected Annual Payroll	54.7%	52.4%
Member Contributions (Est.)	346,659	346,124
% of Projected Annual Payroll	9.9%	10.6%
City Recommended Contribution	1,566,101	1,360,637
% of Projected Annual Payroll	44.8%	41.8%

¹ Note, the amount shown here by the prior actuary is based on the recommended contribution calculation methodology. However, on page 6 of the prior year report, you will note that the tax levy amount shown is based on the greater of the recommended contribution methodology and the PA 096-1495 calculation performed on page 11 of the prior year report. We illustrated this on the recommended basis.

As you can see, the Total Recommended Contribution, shows an increase when compared to the results determined in the May 1, 2017 actuarial valuation report. The increase is attributable to the change in methods from the prior actuary and the natural increase in the amortization on the unfunded due to the payroll growth assumption.

The plan also had some unfavorable experience resulting from assets that earned a 5.85% investment return (Actuarial basis) which fell short of the 7.25% assumption. In addition, salary increases were higher than expected.

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

There were no assumption changes since the prior valuation.

Since the prior valuation the following methods have been updated:

- The administrative expenses have been included to determine the annual contribution to the fund.
- Interest has been excluded in the determination of the expected member contributions to determine the net contribution requirement for the City.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	New Method <u>5/1/2018</u>	Old Method <u>5/1/2018</u>	<u>5/1/2017</u> ¹
A. Participant Data			
Number Included			
Actives	36	36	36
Service Retirees	15	15	16
Beneficiaries	4	4	4
Disability Retirees	2	2	2
Terminated Vested	<u>1</u>	<u>1</u>	<u>1</u>
Total	58	58	59
Total Annual Payroll	\$3,498,076	\$3,498,076	\$3,256,583
Payroll Under Assumed Ret. Age	3,498,076	3,498,076	3,256,583
Annual Rate of Payments to:			
Service Retirees	1,115,442	1,115,442	1,108,111
Beneficiaries	112,241	112,241	112,241
Disability Retirees	126,715	126,715	125,522
Terminated Vested	24,243	24,243	24,243
B. Assets			
Actuarial Value	22,667,654	22,667,654	21,095,094
Market Value	22,398,007	22,398,007	20,318,309
C. Liabilities			
Present Value of Benefits			
Actives			
Retirement Benefits	23,405,531	23,405,531	N/A
Disability Benefits	2,045,292	2,045,292	N/A
Death Benefits	290,689	290,689	N/A
Vested Benefits	1,641,711	1,641,711	N/A
Service Retirees	16,300,773	16,300,773	N/A
Beneficiaries	958,769	958,769	N/A
Disability Retirees	1,855,356	1,855,356	N/A
Terminated Vested	<u>128,260</u>	<u>128,260</u>	<u>N/A</u>
Total	46,626,381	46,626,381	N/A

¹ Values reported for 5/1/2017 are consistent with the report issued by Timothy W. Sharpe.

C. Liabilities - (Continued)	New Method <u>5/1/2018</u>	Old Method <u>5/1/2018</u>	<u>5/1/2017</u> ¹
Present Value of Future Salaries	30,253,318	30,253,318	N/A
Present Value of Future Member Contributions	2,998,104	2,998,104	N/A
Normal Cost (Retirement)	579,793	579,793	N/A
Normal Cost (Disability)	125,251	125,251	N/A
Normal Cost (Death)	10,883	10,883	N/A
Normal Cost (Vesting)	<u>78,227</u>	<u>78,227</u>	<u>N/A</u>
Total Normal Cost	794,154	794,154	662,511
Present Value of Future Normal Costs	6,305,752	6,305,752	N/A
Accrued Liability (Retirement)	18,791,895	18,791,895	N/A
Accrued Liability (Disability)	991,743	991,743	N/A
Accrued Liability (Death)	204,070	204,070	N/A
Accrued Liability (Vesting)	1,089,763	1,089,763	N/A
Accrued Liability (Inactives)	<u>19,243,158</u>	<u>19,243,158</u>	<u>N/A</u>
Total Actuarial Accrued Liability	40,320,629	40,320,629	38,753,183
Unfunded Actuarial Accrued Liability (UAAL)	17,652,975	17,652,975	17,658,089
Funded Ratio (AVA / AL)	56.2%	56.2%	54.4%

¹ Values reported for 5/1/2017 are consistent with the report issued by Timothy W. Sharpe.

	New Method <u>5/1/2018</u>	Old Method <u>5/1/2018</u>	<u>5/1/2017</u> ¹
D. Actuarial Present Value of Accrued Benefits			
Vested Accrued Benefits			
Inactives	19,243,158	19,243,158	N/A
Actives	8,628,650	8,628,650	N/A
Member Contributions	<u>3,932,026</u>	<u>3,932,026</u>	<u>N/A</u>
Total	31,803,834	31,803,834	N/A
Non-vested Accrued Benefits	<u>579,759</u>	<u>579,759</u>	<u>N/A</u>
Total Present Value Accrued Benefits	32,383,593	32,383,593	N/A
Funded Ratio (MVA / PVAB)	69.2%	69.2%	N/A
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:			
Plan Amendments	N/A	N/A	
Assumption Changes	N/A	N/A	
New Accrued Benefits	N/A	N/A	
Benefits Paid	N/A	N/A	
Interest	N/A	N/A	
Other	<u>N/A</u>	<u>N/A</u>	
Total	N/A	N/A	

¹ Values reported for 5/1/2017 are consistent with the report issued by Timothy W. Sharpe.

	New Method	Old Method	
Valuation Date	5/1/2018	5/1/2018	5/1/2017
Applicable to Fiscal Year Ending	<u>4/30/2020</u>	<u>4/30/2020</u>	<u>4/30/2019</u>
E. Pension Cost			
Normal Cost ¹	\$851,730	\$851,730	\$710,543
% of Total Annual Payroll ¹	24.4	24.4	21.8
Administrative Expenses ¹	31,856	0 ²	0 ²
% of Total Annual Payroll ¹	0.9	0.0	0.0
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 23 years (as of 5/1/2018) ¹	1,029,174	1,029,174	996,218
% of Total Annual Payroll ¹	29.4	29.4	30.6
Total Recommended Contribution	1,912,760	1,880,904 ²	1,706,761 ²
% of Total Annual Payroll ¹	54.7	53.8	52.4
Expected Member Contributions ¹	346,659	371,792 ²	346,124 ²
% of Total Annual Payroll ¹	9.9	10.6	10.6
Expected City Contribution	1,566,101	1,509,112 ²	1,360,637 ²
% of Total Annual Payroll ¹	44.8	43.2	41.8

F. Past Contributions

Plan Years Ending:	<u>4/30/2018</u>
Total Recommended Contribution	1,630,759
City	1,295,483
Actual Contributions Made:	
Members (excluding buyback)	335,276
City	<u>1,365,906</u>
Total	1,701,182

G. Net Actuarial (Gain)/Loss (234,324)

¹ Contributions developed as of 5/1/2018 displayed above have been adjusted to account for assumed interest.

² Values reported for 5/1/2017 are consistent with the report issued by Timothy W. Sharpe, which did not consider the administrative expenses as part of the minimum calculation. The report also reflected interest crediting on Member Contributions to the end of the year, while the estimated Member Contributions as of 5/1/2018 do not reflect 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	17,652,975
2019	17,903,641
2020	18,121,022
2025	18,516,074
2031	16,478,643
2036	11,072,565
2041	0

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	4/30/2018	7.29%	5.00%
Year Ended	4/30/2017	N/A	N/A
Year Ended	4/30/2016	N/A	N/A

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	4/30/2018	5.85%	7.25%
Year Ended	4/30/2017	N/A	N/A
Year Ended	4/30/2016	N/A	N/A

DEVELOPMENT OF MAY 1, 2018 AMORTIZATION PAYMENT

(1) Unfunded Actuarial Accrued Liability as of May 1, 2017	\$17,658,089
(2) Sponsor Normal Cost developed as of May 1, 2017	339,784
(3) Expected administrative expenses for the year ended April 30, 2018	0
(4) Expected interest on (1), (2) and (3)	1,304,846
(5) Sponsor contributions to the System during the year ended April 30, 2018	1,365,906
(6) Expected interest on (5)	49,514
(7) Expected Unfunded Actuarial Accrued Liability ¹ as of April 30, 2018, (1)+(2)+(3)+(4)-(5)-(6)	17,887,299
(8) Change to UAAL due to Assumption Change	0
(9) Change to UAAL due to Actuarial (Gain)/Loss	(234,324)
(10) Unfunded Accrued Liability as of May 1, 2018	17,652,975
(11) UAAL Subject to Amortization (100% AAL less Actuarial Assets)	17,652,975

<u>Date</u> <u>Established</u>	<u>Years</u> <u>Remaining</u>	<u>5/1/2018</u> <u>Amount</u>	<u>Amortization</u> <u>Amount</u>
5/1/2018	23	17,652,975	959,603

¹ Components of the Expected Unfunded Actuarial Accrued Liability shown (Items 1 through 6) are consistent with the report issued by Timothy W. Sharpe.

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 Method	Old Method	
Valuation Date	5/1/2018	5/1/2018	5/1/2017
Applicable to Fiscal Year Ending	<u>4/30/2020</u>	<u>4/30/2020</u>	<u>4/30/2019</u> ¹
Actuarial Accrued Liability (PUC)	38,806,815	38,806,815	37,604,411
Actuarial Value of Assets	<u>22,667,654</u>	<u>22,667,654</u>	<u>21,095,094</u>
Unfunded Actuarial Accrued Liability (UAAL)	16,139,161	16,139,161	16,509,317
UAAL Subject to Amortization	12,258,480	12,258,480	12,748,876
Normal Cost ²	\$1,035,064	\$1,035,064	\$1,016,130
% of Total Annual Payroll ²	29.6	29.6	31.2
Administrative Expenses ²	31,856	0	0
% of Total Annual Payroll ²	0.9	0.0	0.0
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 22 years (as of 5/1/2018) ²	739,901	739,901	719,255
% of Total Annual Payroll ²	21.1	21.1	22.1
Total Required Contribution	1,806,821	1,774,965	1,735,385
% of Total Annual Payroll ²	51.6	50.7	53.3
Expected Member Contributions ²	346,659	371,792	346,124
% of Total Annual Payroll ²	9.9	10.6	10.6
Expected City Contribution	1,460,162	1,403,173	1,389,261
% of Total Annual Payroll ²	41.7	40.1	42.7

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 Values reported for 5/1/2017 are consistent with the report issued by Timothy W. Sharpe.

² Contributions developed as of 5/1/2018 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	141,503	1,341,203	1,482,706
2019	268,713	1,376,120	1,644,833
2020	440,497	1,398,052	1,838,549
2021	594,599	1,418,628	2,013,227
2022	760,746	1,438,010	2,198,756
2023	910,569	1,456,317	2,366,886
2024	1,039,189	1,473,615	2,512,804
2025	1,214,899	1,511,938	2,726,837
2026	1,373,481	1,528,863	2,902,344
2027	1,526,277	1,544,415	3,070,692
2028	1,663,025	1,558,331	3,221,356
2029	1,843,800	1,570,285	3,414,085
2030	2,060,858	1,579,903	3,640,761
2031	2,237,586	1,586,767	3,824,353
2032	2,407,923	1,590,433	3,998,356
2033	2,568,292	1,590,442	4,158,734
2034	2,764,668	1,609,954	4,374,622
2035	2,977,225	1,601,903	4,579,128
2036	3,138,379	1,588,865	4,727,244
2037	3,321,499	1,570,474	4,891,973
2038	3,479,133	1,546,467	5,025,600
2039	3,649,948	1,516,698	5,166,646
2040	3,787,050	1,481,159	5,268,209
2041	3,907,963	1,439,976	5,347,939
2042	4,052,915	1,393,378	5,446,293
2043	4,181,589	1,341,684	5,523,273
2044	4,303,722	1,285,289	5,589,011
2045	4,410,283	1,224,669	5,634,952
2046	4,508,188	1,160,371	5,668,559
2047	4,608,013	1,092,989	5,701,002
2048	4,679,085	1,023,157	5,702,242
2049	4,723,169	951,568	5,674,737
2050	4,753,652	878,933	5,632,585
2051	4,769,323	805,974	5,575,297
2052	4,770,077	733,444	5,503,521
2053	4,755,487	662,054	5,417,541
2054	4,724,399	592,459	5,316,858
2055	4,675,720	525,292	5,201,012
2056	4,609,187	461,161	5,070,348
2057	4,524,592	400,649	4,925,241

ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate	7.25% per year compounded annually, net of investment related expenses.
Mortality Rate	<p><i>Healthy Lives:</i> RP-2014 Mortality Table (BCHA) projected to the valuation date using improvement scale MP-2016. 5% of active deaths are assumed to be in the line of duty.</p> <p><i>Disabled Lives:</i> RP-2014 Mortality Table (BCHA) projected to the valuation date using improvement scale MP-2016.</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 2012.
Disability Rate	See table on following page. 70% 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	5.00%.
Payroll Growth	5.00% per year.
Inflation	2.50%.
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	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 2041. The initial amortization amount is 100% of the Accrued Liability less the Actuarial Value of Assets.

Decrement Tables

<u>% Terminating During the Year</u>		<u>% Becoming Disabled During the Year</u>		<u>% Retiring During the Year</u>	
Age	Rate	Age	Rate	Age	Rate
15 - 24	10.00%	20	0.05%	<=49	0%
25	7.50%	25	0.05%	50 - 54	20%
26 - 27	6.25%	30	0.22%	55 - 59	25%
28 - 31	5.00%	35	0.26%	60 - 62	33%
32 - 34	4.00%	40	0.40%	63 - 69	50%
35 - 37	3.00%	45	0.65%	>=70	100%
38 - 49	2.00%	50	0.95%		
>=50	3.50%	55	1.30%		
		60	1.65%		
		65	2.00%		

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 2041. 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
April 30, 2018

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Checking Account	13,640
Money Market	867,293
Total Cash and Equivalents	880,933
Receivables:	
Prepays	13,541
Accrued Past Due Interest	59,170
Total Receivable	72,711
Investments:	
Municipal Obligations	231,812
Corporate Bonds	3,682,439
U.S. Gov't and Agency Obligations	3,299,912
Stocks	6,820,313
Mutual Funds	7,411,033
Total Investments	21,445,509
Total Assets	22,399,153
 <u>LIABILITIES</u>	
Liabilities:	
Payable:	
Expenses	1,146
Total Liabilities	1,146
Net Assets:	
Active and Retired Members' Equity	22,398,007
NET POSITION RESTRICTED FOR PENSIONS	22,398,007
TOTAL LIABILITIES AND NET ASSETS	22,399,153

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
 FOR THE YEAR ENDED April 30, 2018
 Market Value Basis

ADDITIONS

Contributions:

Member	335,276
City	1,365,906

Total Contributions	1,701,182
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Investment Income:

Net Realized Gain (Loss)	(226,268)
Unrealized Gain (Loss)	1,504,924
Net Increase in Fair Value of Investments	1,278,656
Interest & Dividends	558,184
Less Investment Expense ¹	(86,181)

Net Investment Income	1,750,659
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Total Additions	3,451,841
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DEDUCTIONS

Distributions to Members:

Benefit Payments	1,342,440
Refund of Contributions/Transfers	0

Total Distributions	1,342,440
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Administrative Expenses	29,703
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Total Deductions	1,372,143
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Net Increase in Net Position	2,079,698
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NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year	20,318,309
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End of the Year	22,398,007
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¹ Investment Related expenses include investment advisory, custodial and performance monitoring fees.

ACTUARIAL ASSET VALUATION

April 30, 2018

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
4/30/2015	(196,427)	(39,285)	0	0	0	0
4/30/2016	(1,765,280)	(706,112)	(353,056)	0	0	0
4/30/2017	438,711	263,227	175,484	87,742	0	0
4/30/2018	265,654	212,523	159,392	106,262	53,131	0
Total		(269,647)	(18,180)	194,004	53,131	0

Development of Investment Gain/Loss

Market Value of Assets, 4/30/2017	20,318,309
Contributions Less Benefit Payments & Administrative Expenses	329,039
Expected Investment Earnings ¹	1,485,005
Actual Net Investment Earnings	<u>1,750,659</u>
2018 Actuarial Investment Gain/(Loss)	265,654

¹ Expected Investment Earnings = 7.25% x (20,318,309 + 0.5 x 329,039)

Development of Actuarial Value of Assets

Market Value of Assets, 4/30/2018	22,398,007
(Gains)/Losses Not Yet Recognized	<u>269,647</u>
Actuarial Value of Assets, 4/30/2018	22,667,654
(A) 4/30/2017 Actuarial Assets:	21,095,094
(I) Net Investment Income:	
1. Interest and Dividends	558,184
2. Realized Gains (Losses)	(226,268)
3. Change in Actuarial Value	997,786
4. Investment Expenses	<u>(86,181)</u>
Total	1,243,521
(B) 4/30/2018 Actuarial Assets:	22,667,654
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	5.85%
Market Value of Assets Rate of Return:	8.55%
4/30/2018 Limited Actuarial Assets:	22,667,654
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	(297,801)

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
 April 30, 2018
 Actuarial Asset Basis

INCOME	
Contributions:	
Member	335,276
City	1,365,906
Total Contributions	1,701,182
Earnings from Investments	
Interest & Dividends	558,184
Net Realized Gain (Loss)	(226,268)
Change in Actuarial Value	997,786
Total Earnings and Investment Gains	1,329,702
EXPENSES	
Administrative Expenses:	
Investment Related ¹	86,181
Other	29,703
Total Administrative Expenses	115,884
Distributions to Members:	
Benefit Payments	1,342,440
Refund of Contributions/Transfers	0
Total Distributions	1,342,440
Change in Net Assets for the Year	1,572,560
Net Assets Beginning of the Year	21,095,094
Net Assets End of the Year ²	22,667,654

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>5/1/2017</u>	<u>5/1/2018</u>
<u>Actives - Tier 1</u>				
Number	N/A	N/A	28	28
Average Current Age	N/A	N/A	N/A	45.4
Average Age at Employment	N/A	N/A	N/A	26.8
Average Past Service	N/A	N/A	N/A	18.6
Average Annual Salary	N/A	N/A	N/A	\$101,924
<u>Actives - Tier 2</u>				
Number	N/A	N/A	8	8
Average Current Age	N/A	N/A	N/A	30.6
Average Age at Employment	N/A	N/A	N/A	27.8
Average Past Service	N/A	N/A	N/A	2.8
Average Annual Salary	N/A	N/A	N/A	\$80,525
<u>Service Retirees</u>				
Number	N/A	N/A	16	15
Average Current Age	N/A	N/A	N/A	65.5
Average Annual Benefit	N/A	N/A	\$69,257	\$74,363
<u>Beneficiaries</u>				
Number	N/A	N/A	4	4
Average Current Age	N/A	N/A	N/A	78.8
Average Annual Benefit	N/A	N/A	\$28,060	\$28,060
<u>Disability Retirees</u>				
Number	N/A	N/A	2	2
Average Current Age	N/A	N/A	N/A	61.9
Average Annual Benefit	N/A	N/A	\$62,761	\$63,358
<u>Terminated Vested</u>				
Number	N/A	N/A	1	1
Average Current Age	N/A	N/A	N/A	43.6
Average Annual Benefit ²	N/A	N/A	\$24,243	\$24,243

¹ Foster & Foster does not have enough historical data to include complete data prior to 5/1/2018. 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.

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	2	1	1	0	0	0	0	0	0	0	4
30 - 34	0	0	0	0	1	2	1	0	0	0	0	4
35 - 39	0	0	1	1	0	1	2	2	0	0	0	7
40 - 44	0	0	0	0	0	2	0	3	1	0	0	6
45 - 49	0	0	0	0	0	0	0	1	5	0	0	6
50 - 54	0	0	0	0	0	0	0	0	3	5	0	8
55 - 59	0	0	0	0	0	0	0	0	0	1	0	1
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	2	2	2	1	5	3	6	9	6	0	36

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 5/1/2017	36
b. Terminations	
i. Vested (partial or full) with deferred benefits	0
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>0</u>
f. Continuing participants	36
g. New entrants	<u>0</u>
h. Total active life participants in valuation	36

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	16	4	2	1	23
Retired	0	0	0	0	0
Vested Deferred	0	0	0	0	0
Death, With Survivor	0	0	0	0	0
Death, No Survivor	(1)	0	0	0	(1)
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	15	4	2	1	22

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.

NOTES TO THE FINANCIAL STATEMENTS

(For the Year Ended April 30, 2018)

Plan Description

Plan Administration

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

- a.) Two members appointed by the City,
- 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.

Plan Membership as of May 1, 2018:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	21
Inactive Plan Members Entitled to but Not Yet Receiving Benefits	1
Active Plan Members	36
	58
	58

Benefits Provided

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

Normal Retirement:

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

Date 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.

Benefit 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.

Early Retirement:

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

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

Benefit Tier 1: Normal Retirement benefit with no minimum.

Benefit Tier 2: Normal Retirement benefit, reduced 6% each year before age 55, with no minimum benefit.

Disability:

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 Adjustments:

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.

Tier 1: 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.

GASB 67

Vesting (Termination):

Vesting Service Requirement: Tier 1: 8 years.

Vesting Service Requirement: Tier 2: 10 years.

Non-Vested Benefit: Refund of Member Contributions.

Vested Benefit: Either the termination benefit, payable upon reaching age 60, 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.

City: Remaining amount necessary for payment of Normal (current year's) Cost and amortization of the accrued past service liability.

Investments

Investment Policy:

The following was the Board's adopted asset allocation policy as of April 30, 2018:

<u>Asset Class</u>	<u>Target Allocation</u>
Domestic Equity	45%
International Equity	5%
Fixed Income	50%
<u>Total</u>	<u>100%</u>

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 April 30, 2018 the annual money-weighted rate of return on Pension Plan investments, net of pension plan investment expense, was 8.70 percent.

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

NET PENSION LIABILITY OF THE SPONSOR

The components of the Net Pension Liability of the sponsor on April 30, 2018 were as follows:

Total Pension Liability	\$ 39,860,585
Plan Fiduciary Net Position	\$ (22,398,007)
Sponsor's Net Pension Liability	<u>\$ 17,462,578</u>
Plan Fiduciary Net Position as a percentage of Total Pension Liability	56.19%

Actuarial Assumptions:

The Total Pension Liability was determined by an actuarial valuation as of May 1, 2018 using the following actuarial assumptions:

Inflation	2.50%
Salary Increases	5.00%
Discount Rate	7.25%
Investment Rate of Return	7.25%

Mortality Rate Healthy Lives:

RP-2014 Mortality Table (BCHA) projected to the valuation date using improvement scale MP-2016. 5% of active deaths are assumed to be in the line of duty.

Mortality Rate Disabled Lives:

RP-2014 Mortality Table (BCHA) projected to the valuation date using improvement scale MP-2016.

The other significant assumptions are based upon an actuarial experience study performed by the State of Illinois Department of Insurance dated September 26, 2012.

The Long-Term Expected Rate of Return on Pension Plan investments can be 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.

For 2018, the inflation rate assumption of the investment advisor was 2.12%.

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 April 30, 2018 are summarized in the following table:

<u>Asset Class</u>	<u>Long Term Expected Real Rate of Return</u>
Domestic Equity	7.18%
International Equity	6.68%
Fixed Income	2.68%

GASB 67

Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.25 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 7.25 percent; the municipal bond rate is 3.97 percent (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 The Bond Buyer); and the resulting single discount rate is 7.25 percent.

	1% Decrease 6.25%	Current Discount Rate 7.25%	1% Increase 8.25%
Sponsor's Net Pension Liability	\$ 23,331,141	\$ 17,462,578	\$ 12,663,113

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

Last 2 Fiscal Years

	<u>04/30/2018</u>	<u>04/30/2017¹</u>
Total Pension Liability		
Service Cost	755,129	675,264
Interest	2,815,689	2,703,440
Changes of Benefit Terms	-	-
Differences Between Expected and Actual Experience	(1,120,976)	(111,650)
Changes of Assumptions	-	125,412
Benefit Payments, Including Refunds of Employee Contributions	<u>(1,342,440)</u>	<u>(1,370,286)</u>
Net Change in Total Pension Liability	1,107,402	2,022,180
Total Pension Liability - Beginning	<u>38,753,183</u>	<u>36,731,003</u>
Total Pension Liability - Ending (a)	<u>\$ 39,860,585</u>	<u>\$ 38,753,183</u>
Plan Fiduciary Net Position		
Contributions - Employer	1,365,906	1,365,906
Contributions - Employee	335,276	319,653
Net Investment Income	1,750,659	1,815,790
Benefit Payments, Including Refunds of Employee Contributions	(1,342,440)	(1,370,286)
Administrative Expense	<u>(29,703)</u>	<u>(32,335)</u>
Net Change in Plan Fiduciary Net Position	2,079,698	2,098,728
Plan Fiduciary Net Position - Beginning	<u>20,318,309</u>	<u>18,219,581</u>
Plan Fiduciary Net Position - Ending (b)	<u>\$ 22,398,007</u>	<u>\$ 20,318,309</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 17,462,578</u>	<u>\$ 18,434,874</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	56.19%	52.43%
Covered Employee Payroll	\$ 3,498,076	\$ 3,256,583
Net Pension Liability as a Percentage of covered Employee Payroll	499.21%	566.08%

Notes to Schedule:

¹ The 2015-2017 results were provided by the prior actuary, Timothy W. Sharpe, Actuary, Geneva, IL.

SCHEDULE OF CONTRIBUTIONS

Last 2 Fiscal Years

Fiscal Year Ended	Actuarially Determined Contribution	Contributions in relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Employee Payroll	Contributions as a percentage of Covered Employee Payroll
04/30/2018	\$ 1,295,483	\$ 1,365,906	\$ (70,423)	\$ 3,498,076	39.05%
04/30/2017 ¹	\$ 1,365,906	\$ 1,365,906	\$ -	\$ 3,256,583	41.94%

¹ The 2016-2017 results were provided by the prior actuary, Timothy W. Sharpe, Actuary, Geneva, IL.

Notes to Schedule:

Valuation Date: 05/01/2016

Actuarially Determined Contribution is calculated as of May 1, two years prior year in which contributions are reported.

Methods and assumptions used to determine contribution rates:

- Funding Method: Entry Age Normal Cost Method.
- Amortization Method: Level percentage of pay, closed.
- Remaining Amortization Period: 25 years (as of 05/01/2016 Valuation).
- Actuarial Asset Method: 5-year Average Market Value (PA 096-1495).
- Investment Return: 7.50% net of investment expenses.
- Salary Scale: 5.00%.
- Mortality: RP 2014 Mortality Table (BCHA) projected to 2016 using improvement scale MP-2015.
- Withdrawal: Based on studies of the Fund and the Department of Insurance, see Sample Rates below.
- Disability Rates: Based on studies of the Fund and the Department of Insurance, see Sample Rates below.
- Retirement: Based on studies of the Fund and the Department of Insurance, see Sample Rates below (100% by age 70).
- Payroll Growth: 5.00% per year.
- Marital Status: 80% Married, Female spouses 3 years younger.

Sample Annual Rates Per 100

Participants:	Age	Withdrawal	Disability	Retirement
	20	10.00	0.05	
	25	7.50	0.05	
	30	5.00	0.22	
	35	3.00	0.26	
	40	2.00	0.40	
	45	2.00	0.65	
	50	3.50	0.95	20.00
	55	3.50	1.30	25.00
	60	3.50	1.65	33.00
	65	3.50	2.00	50.00
	70			100.00

SCHEDULE OF INVESTMENT RETURNS

Last 2 Fiscal Years

Fiscal Year Ended	Annual Money-Weighted Rate of Return Net of Investment Expense
04/30/2018	8.70%
04/30/2017	N/A

NOTES TO THE FINANCIAL STATEMENTS

(For the Year Ended April 30, 2018)

General Information about the Pension Plan

Plan Administration

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

- a.) Two members appointed by the City,
- 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.

Plan Membership as of May 1, 2018:

Inactive Plan Members or Beneficiaries Currently Receiving Benefits	21
Inactive Plan Members Entitled to but Not Yet Receiving Benefits	1
Active Plan Members	36
	<u>58</u>

Benefits Provided

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

Normal Retirement:

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

Date 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.

Benefit 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.

Early Retirement:

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

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

Benefit Tier 1: Normal Retirement benefit with no minimum.

Benefit Tier 2: Normal Retirement benefit, reduced 6% each year before age 55, with no minimum benefit.

Disability:

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 Adjustments:

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.

Tier 1: 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.

Vesting Service Requirement: Tier 2: 10 years.

Non-Vested Benefit: Refund of Member Contributions.

Vested Benefit: Either the termination benefit, payable upon reaching age 60, 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.

City: Remaining amount necessary for payment of Normal (current year's) Cost and amortization of the accrued past service liability.

Net Pension Liability

The measurement date is April 30, 2018.

The measurement period for the pension expense was May 1, 2017 to April 30, 2018.

The reporting period is May 1, 2017 through April 30, 2018.

The Sponsor's Net Pension Liability was measured as of April 30, 2018.

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 May 1, 2018 using the following actuarial assumptions:

Inflation	2.50%
Salary Increases	5.00%
Discount Rate	7.25%
Investment Rate of Return	7.25%

Mortality Rate Healthy Lives:

RP-2014 Mortality Table (BCHA) projected to the valuation date using improvement scale MP-2016. 5% of active deaths are assumed to be in the line of duty.

Mortality Rate Disabled Lives:

RP-2014 Mortality Table (BCHA) projected to the valuation date using improvement scale MP-2016.

The other significant assumptions are based upon an actuarial experience study performed by the State of Illinois Department of Insurance dated September 26, 2012.

The Long-Term Expected Rate of Return on Pension Plan investments can be 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.

For 2018, the inflation rate assumption of the investment advisor was 2.12%.

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.

GASB 68

Best estimates of arithmetic real rates of return for each major asset class included in the Pension Plan's target asset allocation as of April 30, 2018 are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long Term Expected Real Rate of Return</u>
Domestic Equity	45%	7.18%
International Equity	5%	6.68%
Fixed Income	50%	2.68%
Total	<u>100%</u>	

Discount Rate:

The Discount Rate used to measure the Total Pension Liability was 7.25 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 7.25 percent; the municipal bond rate is 3.97 percent (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 The Bond Buyer); and the resulting single discount rate is 7.25 percent.

CHANGES IN NET PENSION LIABILITY

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a)-(b)
Balances at April 30, 2017	\$ 38,753,183	\$ 20,318,309	\$ 18,434,874
Changes for a Year:			
Service Cost	755,129	-	755,129
Interest	2,815,689	-	2,815,689
Differences Between Expected and Actual Experience	(1,120,976)	-	(1,120,976)
Changes of Assumptions	-	-	-
Changes of Benefit Terms	-	-	-
Contributions - Employer	-	1,365,906	(1,365,906)
Contributions - Employee	-	335,276	(335,276)
Contributions - Buy Back	-	-	-
Net Investment Income	-	1,750,659	(1,750,659)
Benefit Payments, Including Refunds of Employee Contributions	(1,342,440)	(1,342,440)	-
Administrative Expense	-	(29,703)	29,703
Other Changes	-	-	-
New Changes	1,107,402	2,079,698	(972,296)
Balances at April 30, 2018	\$ 39,860,585	\$ 22,398,007	\$ 17,462,578

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

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.25%	7.25%	8.25%
Sponsor's Net Pension Liability	\$ 23,331,141	\$ 17,462,578	\$ 12,663,113

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 April 30, 2018, the Sponsor will recognize a pension expense of \$2,221,542.

On April 30, 2018, 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	-	1,098,022
Changes of Assumptions	875,973	-
Net Difference Between Projected and Actual Earnings on Pension Plan Investments	230,361	-
Total	\$ 1,106,334	\$ 1,098,022

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 April 30:		
2019	\$	441,303
2020	\$	317,231
2021	\$	(325,330)
2022	\$	(238,063)
2023	\$	(186,829)
Thereafter	\$	-

SCHEDULE OF CHANGES IN NET PENSION LIABILITY AND RELATED RATIOS

Last 2 Fiscal Years

	04/30/2018	04/30/2017 ¹
Total Pension Liability		
Service Cost	755,129	675,264
Interest	2,815,689	2,703,440
Changes of Benefit Terms	-	-
Differences Between Expected and Actual Experience	(1,120,976)	(111,650)
Changes of Assumptions	-	125,412
Benefit Payments, Including Refunds of Employee Contributions	(1,342,440)	(1,370,286)
Net Change in Total Pension Liability	1,107,402	2,022,180
Total Pension Liability - Beginning	38,753,183	36,731,003
Total Pension Liability - Ending (a)	<u>\$ 39,860,585</u>	<u>\$ 38,753,183</u>
Plan Fiduciary Net Position		
Contributions - Employer	1,365,906	1,365,906
Contributions - Employee	335,276	319,653
Net Investment Income	1,750,659	1,815,790
Benefit Payments, Including Refunds of Employee Contributions	(1,342,440)	(1,370,286)
Administrative Expense	(29,703)	(32,335)
Net Change in Plan Fiduciary Net Position	2,079,698	2,098,728
Plan Fiduciary Net Position - Beginning	20,318,309	18,219,581
Plan Fiduciary Net Position - Ending (b)	<u>\$ 22,398,007</u>	<u>\$ 20,318,309</u>
Net Pension Liability - Ending (a) - (b)	<u>\$ 17,462,578</u>	<u>\$ 18,434,874</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	56.19%	52.43%
Covered Employee Payroll	\$ 3,498,076	\$ 3,256,583
Net Pension Liability as a Percentage of covered Employee Payroll	499.21%	566.08%

Notes to Schedule:

¹ The 2015-2017 results were provided by the prior actuary, Timothy W. Sharpe, Actuary, Geneva, IL.

SCHEDULE OF CONTRIBUTIONS

Last 2 Fiscal Years

Fiscal Year Ended	Actuarially Determined Contribution	Contributions in relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Employee Payroll	Contributions as a percentage of Covered Employee Payroll
04/30/2018	\$ 1,295,483	\$ 1,365,906	\$ (70,423)	\$ 3,498,076	39.05%
04/30/2017 ¹	\$ 1,365,906	\$ 1,365,906	\$ -	\$ 3,256,583	41.94%

¹ The 2016-2017 results were provided by the prior actuary, Timothy W. Sharpe, Actuary, Geneva, IL.

Notes to Schedule:

Valuation Date: 05/01/2016

Actuarially Determined Contribution is calculated as of May 1, two years prior year in which contributions are reported.

Methods and assumptions used to determine contribution rates:

- Funding Method: Entry Age Normal Cost Method.
- Amortization Method: Level percentage of pay, closed.
- Remaining Amortization Period: 25 years (as of 05/01/2016 Valuation).
- Actuarial Asset Method: 5-year Average Market Value (PA 096-1495).
- Investment Return: 7.50% net of investment expenses.
- Salary Scale: 5.00%.
- Mortality: RP 2014 Mortality Table (BCHA) projected to 2016 using improvement scale MP-2015.
- Withdrawal: Based on studies of the Fund and the Department of Insurance, see Sample Rates below.
- Disability Rates: Based on studies of the Fund and the Department of Insurance, see Sample Rates below.
- Retirement: Based on studies of the Fund and the Department of Insurance, see Sample Rates below (100% by age 70).
- Payroll Growth: 5.00% per year.
- Marital Status: 80% Married, Female spouses 3 years younger.

Sample Annual Rates Per 100

Participants:	Age	Withdrawal	Disability	Retirement
	20	10.00	0.05	
	25	7.50	0.05	
	30	5.00	0.22	
	35	3.00	0.26	
	40	2.00	0.40	
	45	2.00	0.65	
	50	3.50	0.95	20.00
	55	3.50	1.30	25.00
	60	3.50	1.65	33.00
	65	3.50	2.00	50.00
	70			100.00

COMPONENTS OF PENSION EXPENSE
FISCAL YEAR APRIL 30, 2018

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning Balance	\$ 18,434,874	\$ 587,466	\$ 2,423,710	
Total Pension Liability Factors:				
Service Cost	755,129	-	-	755,129
Interest	2,815,689	-	-	2,815,689
Changes in Benefit Terms	-	-	-	-
Differences Between Expected and Actual Experience With Regard to Economic or Demographic Assumptions	(1,120,976)	1,120,976	-	-
Current Year Amortization	-	(259,451)	-	(259,451)
Changes in Assumptions About Future Economic or Demographic Factors or Other Inputs	-	-	-	-
Current Year Amortization	-	-	(488,569)	488,569
Benefit Payments, Including Refunds of Employee Contributions	(1,342,440)	-	-	-
Net Change	<u>1,107,402</u>	<u>861,525</u>	<u>(488,569)</u>	<u>3,799,936</u>
Plan Fiduciary Net Position:				
Contributions - Employer	1,365,906	-	-	-
Contributions - Employee	335,276	-	-	(335,276)
Projected Net Investment Income	1,485,005	-	-	(1,485,005)
Difference Between Projected and Actual Earnings on Pension Plan Investments	265,654	265,654	-	-
Current Year Amortization	-	(140,872)	(353,056)	212,184
Benefit Payments, Including Refunds of Employee Contributions	(1,342,440)	-	-	-
Administrative Expenses	(29,703)	-	-	29,703
Net Change	<u>2,079,698</u>	<u>124,782</u>	<u>(353,056)</u>	<u>(1,578,394)</u>
Ending Balance	<u>\$ 17,462,578</u>	<u>\$ 1,573,773</u>	<u>\$ 1,582,085</u>	<u>\$ 2,221,542</u>

AMORTIZATION SCHEDULE - EXPERIENCE

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

Year Base Established	Differences Between Expected and Actual Experience	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	2024	2025	2026
2018	\$ (1,120,976)	6.00	\$ (186,831)	\$ (186,829)	\$ (186,829)	\$ (186,829)	\$ (186,829)	\$ (186,829)	\$ -	\$ -	\$ -
2017	\$ (111,650)	5.80	\$ (19,250)	\$ (19,250)	\$ (19,250)	\$ (19,250)	\$ (15,400)	\$ -	\$ -	\$ -	\$ -
2016	\$ (250,837)	4.70	\$ (53,370)	\$ (53,370)	\$ (37,357)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ (259,451)	\$ (259,449)	\$ (243,436)	\$ (206,079)	\$ (202,229)	\$ (186,829)	\$ -	\$ -	\$ -

AMORTIZATION SCHEDULE - CHANGES OF ASSUMPTIONS

Year Base Established	Change of Assumptions	Recognition Period (Years)	Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions										
			2018	2019	2020	2021	2022	2023	2024	2025	2026		
2018	\$ -	6.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2017	\$ 125,412	5.80	\$ 21,623	\$ 21,623	\$ 21,623	\$ 21,623	\$ 17,297	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ 2,194,645	4.70	\$ 466,946	\$ 466,946	\$ 326,861	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			<u>\$ 488,569</u>	<u>\$ 488,569</u>	<u>\$ 348,484</u>	<u>\$ 21,623</u>	<u>\$ 17,297</u>	<u>\$ -</u>					

AMORTIZATION SCHEDULE - INVESTMENTS

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

Year Base Established	Differences Between Projected and Actual Earnings	Recognition Period (Years)	2018	2019	2020	2021	2022	2023	2024	2025	2026
2018	\$ (265,654)	5	\$ (53,130)	\$ (53,131)	\$ (53,131)	\$ (53,131)	\$ (53,131)	\$ -	\$ -	\$ -	\$ -
2017	\$ (438,711)	5	\$ (87,742)	\$ (87,742)	\$ (87,742)	\$ (87,743)	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ 1,765,280	5	\$ 353,056	\$ 353,056	\$ 353,056	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 212,184	\$ 212,183	\$ 212,183	\$ (140,874)	\$ (53,131)	\$ -	\$ -	\$ -	\$ -