

CITY OF GENEVA
POLICE PENSION FUND
ACTUARIAL VALUATION
AS OF MAY 1, 2019
CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING APRIL 30, 2021
GASB 67/68 DISCLOSURE INFORMATION
AS OF APRIL 30, 2019



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

August 9, 2019

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

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

Dear Ms. Kruse:

We are pleased to present to the City this report of the annual actuarial valuation of the City of 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. 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. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements.

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 City of Geneva Police Pension Fund. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

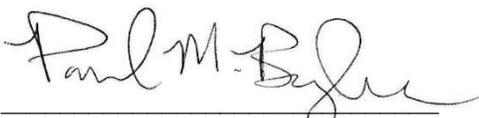
If there are any questions, concerns, or comments about any of the items contained in this report, please contact us at 630-620-0200.

Respectfully submitted,

Foster & Foster, Inc.

By: 
Jason L. Franken, FSA, EA, MAAA

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

By: 
Paul M. Baugher, FSA, EA, MAAA

JLF/lke
Enclosures

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SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Geneva Police Pension Fund, performed as of May 1, 2019, 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, 2021.

The contribution requirements, compared with those set forth in the May 1, 2018 actuarial report, are as follows:

Valuation Date Applicable to Fiscal Year Ending	5/1/2019 <u>4/30/2021</u>	5/1/2018 <u>4/30/2020</u>
Total Recommended Contribution	\$1,961,681	\$1,912,760
% of Projected Annual Payroll	58.8%	54.7%
Member Contributions (Est.)	330,393	346,659
% of Projected Annual Payroll	9.9%	9.9%
City Recommended Contribution	1,631,288	1,566,101
% of Projected Annual Payroll	48.9%	44.8%

As you can see, the Total Recommended Contribution shows an increase when compared to the results determined in the May 1, 2018 actuarial valuation report. The increase is largely attributable to assumption changes reflected in this valuation and the natural increase in the amortization payment due to the payroll growth assumption. The increase was offset in part by the decrease in normal cost resulting from a reduction in active membership.

Plan experience was favorable overall on the basis of the plan's actuarial assumptions. The primary source of favorable experience was an average salary increase of 1.87% which fell short of the 5.00% assumption. This gain was offset in part by losses associated with more retirements than expected and an investment return of 5.88% (Actuarial Asset Basis) which fell short of the 7.25% assumption.

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 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%.

In addition, mortality rates were updated to reflect the PubS-2010 tables.

There were no method changes since the prior valuation.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	New Assump <u>5/1/2019</u>	Old Assump <u>5/1/2019</u>	<u>5/1/2018</u>
A. Participant Data			
Number Included			
Actives	35	35	36
Service Retirees	17	17	15
Beneficiaries	3	3	4
Disability Retirees	2	2	2
Terminated Vested	<u>2</u>	<u>2</u>	<u>1</u>
Total	59	59	58
Total Annual Payroll	\$3,333,936	\$3,333,936	\$3,498,076
Payroll Under Assumed Ret. Age	3,333,936	3,333,936	3,498,076
Annual Rate of Payments to:			
Service Retirees	1,344,233	1,344,233	1,115,442
Beneficiaries	100,241	100,241	112,241
Disability Retirees	127,908	127,908	126,715
Terminated Vested	24,243	24,243	24,243
B. Assets			
Actuarial Value	24,200,228	24,200,228	22,667,654
Market Value	24,017,118	24,017,118	22,398,007
C. Liabilities			
Present Value of Benefits			
Actives			
Retirement Benefits	22,703,377	21,103,823	23,405,531
Disability Benefits	1,584,781	1,944,500	2,045,292
Death Benefits	179,570	271,097	290,689
Vested Benefits	1,198,791	1,623,217	1,641,711
Service Retirees	20,655,686	20,243,452	16,300,773
Beneficiaries	907,879	898,763	958,769
Disability Retirees	1,885,389	1,870,513	1,855,356
Terminated Vested	<u>154,828</u>	<u>154,536</u>	<u>128,260</u>
Total	49,270,301	48,109,901	46,626,381

C. Liabilities - (Continued)	New Assump <u>5/1/2019</u>	Old Assump <u>5/1/2019</u>	<u>5/1/2018</u>
Present Value of Future Salaries	31,627,785	30,045,548	30,253,318
Present Value of Future Member Contributions	3,134,313	2,977,514	2,998,104
Normal Cost (Retirement)	576,385	533,821	579,793
Normal Cost (Disability)	98,036	118,458	125,251
Normal Cost (Death)	8,211	10,413	10,883
Normal Cost (Vesting)	<u>65,431</u>	<u>82,112</u>	<u>78,227</u>
Total Normal Cost	748,063	744,804	794,154
Present Value of Future Normal Costs	6,404,897	6,074,757	6,305,752
Accrued Liability (Retirement)	17,700,582	16,715,499	18,791,895
Accrued Liability (Disability)	696,027	910,423	991,743
Accrued Liability (Death)	108,532	186,751	204,070
Accrued Liability (Vesting)	756,481	1,055,207	1,089,763
Accrued Liability (Inactives)	<u>23,603,782</u>	<u>23,167,264</u>	<u>19,243,158</u>
Total Actuarial Accrued Liability	42,865,404	42,035,144	40,320,629
Unfunded Actuarial Accrued Liability (UAAL)	18,665,176	17,834,916	17,652,975
Funded Ratio (AVA / AL)	56.5%	57.6%	56.2%

	New Assump <u>5/1/2019</u>	Old Assump <u>5/1/2019</u>	<u>5/1/2018</u>
D. Actuarial Present Value of Accrued Benefits			
Vested Accrued Benefits			
Inactives	23,603,782	23,167,264	19,243,158
Actives	7,057,509	7,233,068	8,628,650
Member Contributions	<u>3,634,954</u>	<u>3,634,954</u>	<u>3,932,026</u>
Total	34,296,245	34,035,286	31,803,834
Non-vested Accrued Benefits	<u>604,092</u>	<u>600,365</u>	<u>579,759</u>
Total Present Value Accrued Benefits	34,900,337	34,635,651	32,383,593
Funded Ratio (MVA / PVAB)	68.8%	69.3%	69.2%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:			
Plan Amendments	0	0	
Assumption Changes	264,686	0	
New Accrued Benefits	0	1,454,145	
Benefits Paid	0	(1,495,679)	
Interest	0	2,293,592	
Other	<u>0</u>	<u>0</u>	
Total	264,686	2,252,058	

Valuation Date	New Assump	Old Assump	
Applicable to Fiscal Year Ending	<u>5/1/2019</u>	<u>5/1/2019</u>	<u>5/1/2018</u>
	<u>4/30/2021</u>	<u>4/30/2021</u>	<u>4/30/2020</u>

E. Pension Cost

Normal Cost ¹	\$802,298	\$798,802	\$851,730
% of Total Annual Payroll ¹	24.1	24.0	24.4
Administrative Expenses ¹	32,785	32,785	31,856
% of Total Annual Payroll ¹	1.0	1.0	0.9
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 22 years (as of 5/1/2019) ¹	1,126,598	1,076,484	1,029,174
% of Total Annual Payroll ¹	33.7	32.2	29.4
Total Recommended Contribution	1,961,681	1,908,071	1,912,760
% of Total Annual Payroll ¹	58.8	57.2	54.7
Expected Member Contributions ¹	330,393	330,393	346,659
% of Total Annual Payroll ¹	9.9	9.9	9.9
Expected City Contribution	1,631,288	1,577,678	1,566,101
% of Total Annual Payroll ¹	48.9	47.3	44.8

F. Past Contributions

Plan Years Ending:	<u>4/30/2019</u>
Total Recommended Contribution	1,691,996
City	1,360,637
Actual Contributions Made:	
Members (excluding buyback)	331,359
City	<u>1,389,261</u>
Total	1,720,620

G. Net Actuarial (Gain)/Loss (168,996)

¹ Contributions developed as of 5/1/2019 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>
2019	18,665,176
2020	18,891,803
2021	19,078,531
2026	19,193,419
2031	17,179,544
2036	11,543,492
2041	0

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	4/30/2019	1.87%	5.00%
Year Ended	4/30/2018	7.29%	5.00%
Year Ended	4/30/2017	N/A	N/A

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	4/30/2019	5.88%	7.25%
Year Ended	4/30/2018	5.85%	7.25%
Year Ended	4/30/2017	N/A	N/A

DEVELOPMENT OF MAY 1, 2019 AMORTIZATION PAYMENT

(1)	Unfunded Actuarial Accrued Liability as of May 1, 2018	\$17,652,975
(2)	Sponsor Normal Cost developed as of May 1, 2018	447,495
(3)	Expected administrative expenses for the year ended April 30, 2019	29,703
(4)	Expected interest on (1), (2) and (3)	1,313,361
(5)	Sponsor contributions to the System during the year ended April 30, 2019	1,389,261
(6)	Expected interest on (5)	50,361
(7)	Expected Unfunded Actuarial Accrued Liability as of April 30, 2019, (1)+(2)+(3)+(4)-(5)-(6)	18,003,912
(8)	Change to UAAL due to Assumption Change	830,260
(9)	Change to UAAL due to Actuarial (Gain)/Loss	(168,996)
(10)	Unfunded Accrued Liability as of May 1, 2019	18,665,176
(11)	UAAL Subject to Amortization (100% AAL less Actuarial Assets)	18,665,176

<u>Date</u> <u>Established</u>	<u>Years</u> <u>Remaining</u>	<u>5/1/2019</u> <u>Amount</u>	<u>Amortization</u> <u>Amount</u>
5/1/2019	22	18,665,176	1,050,441

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of May 1, 2018	\$17,652,975
(2) Expected UAAL as of May 1, 2019	18,003,912
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	312,249
Salary Increases	(520,138)
Active Decrements	415,226
Inactive Mortality	(102,020)
Other	<u>(274,313)</u>
Change in UAAL due to (Gain)/Loss	(168,996)
Assumption Changes	<u>830,260</u>
(4) Actual UAAL as of May 1, 2019	\$18,665,176

RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1) Contribution Determined as of May 1, 2018	\$	1,566,101
(2) Summary of Contribution Impact by component:		
Change in Normal Cost		(52,928)
Change in Assumed Administrative Expense		929
Investment Return (Actuarial Asset Basis)		18,847
Salary Increases		(31,395)
New Entrants		-
Active Decrements		25,062
Inactive Mortality		(6,158)
Data Corrections		-
Contributions (More) or Less than Recommended		(1,790)
Increase in Amortization Payment Due to Payroll Growth Assumption		51,459
Change in Expected Member Contributions		16,266
Assumption Change		53,610
Other		<u>(8,715)</u>
Total Change in Contribution		65,187
(3) Contribution Determined as of May 1, 2019		\$1,631,288

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	5/1/2019	5/1/2019	5/1/2018
Applicable to Fiscal Year Ending	<u>4/30/2021</u>	<u>4/30/2021</u>	<u>4/30/2020</u>
Actuarial Accrued Liability (PUC)	41,223,146	40,587,180	38,806,815
Actuarial Value of Assets	<u>24,200,228</u>	<u>24,200,228</u>	<u>22,667,654</u>
Unfunded Actuarial Accrued Liability (UAAL)	17,022,918	16,386,952	16,139,161
UAAL Subject to Amortization	12,900,603	12,328,234	12,258,480
Normal Cost ¹	\$992,643	\$976,061	\$1,035,064
% of Total Annual Payroll ¹	29.8	29.3	29.6
Administrative Expenses ¹	32,785	32,785	31,856
% of Total Annual Payroll ¹	1.0	1.0	0.9
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 21 years (as of 5/1/2019) ¹	807,783	771,944	739,901
% of Total Annual Payroll ¹	24.2	23.1	21.1
Total Required Contribution	1,833,211	1,780,790	1,806,821
% of Total Annual Payroll ¹	55.0	53.4	51.6
Expected Member Contributions ¹	330,393	330,393	346,659
% of Total Annual Payroll ¹	9.9	9.9	9.9
Expected City Contribution	1,502,818	1,450,397	1,460,162
% of Total Annual Payroll ¹	45.1	43.5	41.7
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 Contributions developed as of 5/1/2019 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
2019	100,559	1,581,240	1,681,799
2020	219,578	1,596,194	1,815,772
2021	332,471	1,633,160	1,965,631
2022	474,007	1,666,994	2,141,001
2023	602,944	1,700,178	2,303,122
2024	719,454	1,732,491	2,451,945
2025	873,442	1,786,044	2,659,486
2026	1,011,802	1,817,722	2,829,524
2027	1,157,973	1,847,738	3,005,711
2028	1,292,347	1,875,799	3,168,146
2029	1,462,814	1,901,597	3,364,411
2030	1,664,673	1,924,798	3,589,471
2031	1,843,845	1,945,021	3,788,866
2032	2,012,681	1,961,843	3,974,524
2033	2,169,705	1,974,785	4,144,490
2034	2,357,697	2,006,785	4,364,482
2035	2,553,742	2,010,977	4,564,719
2036	2,717,756	2,009,682	4,727,438
2037	2,895,971	2,002,403	4,898,374
2038	3,056,624	1,988,751	5,045,375
2039	3,249,938	1,968,463	5,218,401
2040	3,407,815	1,941,408	5,349,223
2041	3,595,032	1,907,554	5,502,586
2042	3,775,618	1,866,918	5,642,536
2043	3,923,969	1,819,537	5,743,506
2044	4,062,122	1,765,494	5,827,616
2045	4,200,417	1,704,967	5,905,384
2046	4,335,814	1,638,262	5,974,076
2047	4,476,828	1,565,824	6,042,652
2048	4,595,565	1,488,208	6,083,773
2049	4,683,444	1,406,016	6,089,460
2050	4,772,272	1,319,839	6,092,111
2051	4,833,125	1,230,342	6,063,467
2052	4,879,077	1,138,293	6,017,370
2053	4,908,284	1,044,498	5,952,782
2054	4,920,715	949,826	5,870,541
2055	4,914,941	855,297	5,770,238
2056	4,891,453	762,052	5,653,505
2057	4,848,550	671,318	5,519,868
2058	4,785,425	584,374	5,369,799

ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate	7.25% per year compounded annually, net of investment related expenses. We will continue to monitor this assumption and compare with future asset allocations and expected returns.
Mortality Rate	<p><i>Active Lives:</i> PubS-2010 Employee mortality, projected 5 years past the valuation date with Scale MP-2018. 10% of active deaths are assumed to be in the line of duty.</p> <p><i>Inactive Lives:</i> PubS-2010 Healthy Retiree mortality, projected 5 years past the valuation date with Scale MP-2018.</p> <p><i>Beneficiaries:</i> PubS-2010 Survivor mortality, projected 5 years past the valuation date with Scale MP-2018.</p> <p><i>Disabled Lives:</i> PubS-2010 Disabled mortality, projected 5 years past the valuation date with Scale MP-2018.</p> <p>The mortality assumptions sufficiently accommodate anticipated future mortality improvements.</p>
Retirement Age	See table later in this section. This is based on a 2017 experience study performed for the State of Illinois Department of Insurance.
Disability Rate	See table later in this section. 60% of the disabilities are assumed to be in the line of duty. This is based on a 2017 experience study performed for the State of Illinois Department of Insurance.
Termination Rate	See table later in this section. This is based on a 2017 experience study performed for the State of Illinois Department of Insurance.
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>

Salary Increases	5.00%.
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.
Payroll Growth	5.00% 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

<u>% Terminating</u> <u>During the Year</u>		<u>% Becoming Disabled</u> <u>During the Year</u>		<u>% Retiring</u> <u>During the Year (Tier 1)</u>		<u>% Retiring</u> <u>During the Year (Tier 2)</u>	
<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
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 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.

DISCUSSION OF RISK

ASOP No. 51, Assessment and Disclosure of Risk Associated with Measuring Pension Obligations and Determining Pension Plan Contributions, states that the actuary should identify risks that, in the actuary's professional judgment, may reasonably be anticipated to significantly affect the plan's future financial condition.

Throughout this report, actuarial results are determined under various assumption scenarios. These results are based on the premise that all future plan experience will align with the plan's actuarial assumptions; however, there is no guarantee that actual plan experience will align with the plan's assumptions. Whenever possible, the recommended assumptions in this report reflect conservatism to allow for some margin of unfavorable future plan experience. However, it is still possible that actual plan experience will differ from anticipated experience in an unfavorable manner that will negatively impact the plan's funded position.

Below are examples of ways in which plan experience can deviate from assumptions and the potential impact of that deviation. Typically, this results in an actuarial gain or loss representing the current-year financial impact on the plan's unfunded liability of the experience differing from assumptions; this gain or loss is amortized over a period of time determined by the plan's amortization method. When assumptions are selected that adequately reflect plan experience, gains and losses typically offset one another in the long term, resulting in a relatively low impact on the plan's contribution requirements associated with plan experience. When assumptions are too optimistic, losses can accumulate over time and the plan's amortization payment could potentially grow to an unmanageable level.

- **Investment Return:** When the rate of return on the Actuarial Value of Assets falls short of the assumption, this produces a loss representing assumed investment earnings that were not realized. Further, it is unlikely that the plan will experience a scenario that matches the assumed return in each year as capital markets can be volatile from year to year. Therefore, contribution amounts can vary in the future.
- **Salary Increases:** When a plan participant experiences a salary increase that was greater than assumed, this produces a loss representing the cost of an increase in anticipated plan benefits for the participant as compared to the previous year. The total gain or loss associated with salary increases for the plan is the sum of salary gains and losses for all active participants.
- **Payroll Growth:** The plan's payroll growth assumption, if one is used, causes a predictable annual increase in the plan's amortization payment in order to produce an amortization payment that remains constant as a percentage of payroll if all assumptions are realized. If payroll does not increase according to the plan's payroll growth assumption, the plan's amortization payment can increase significantly as a percentage of payroll even if all assumptions other than the payroll growth assumption are realized.
- **Demographic Assumptions:** Actuarial results take into account various potential events that could happen to a plan participant, such as retirement, termination, disability, and death. Each of these potential events is assigned a liability based on the likelihood of the event and the financial consequence of the event for the plan. Accordingly, actuarial liabilities reflect a blend of financial consequences associated with various possible outcomes (such as retirement at one of various possible ages). Once the outcome is known (e.g. the participant retires) the liability is adjusted to reflect the known outcome. This adjustment produces a gain or loss depending on whether the outcome was more or less favorable than other outcomes that could have occurred.

- Contribution risk: Risks associated with the items outlined above will inherently create varying liabilities and assets resulting in volatility in contributions. Actuarial losses on assets and liabilities will lead to higher contribution amounts, while actuarial gains on assets and liabilities will lead to lower contribution amounts.

Impact of Plan Maturity on Risk

For newer pension plans, most of the participants and associated liabilities are related to active members who have not yet reached retirement age. As pension plans continue in operation and active members reach retirement ages, liabilities begin to shift from being primarily related to active members to being shared amongst active and retired members. Plan maturity is a measure of the extent to which this shift has occurred. It is important to understand that plan maturity can have an impact on risk tolerance and the overall risk characteristics of the plan. For example, plans with a large amount of retired liability do not have as long of a time horizon to recover from losses (such as losses on investments due to lower than expected investment returns) as plans where the majority of the liability is attributable to active members. For this reason, less tolerance for investment risk may be warranted for highly mature plans with a substantial inactive liability. Similarly, mature plans paying substantial retirement benefits resulting in a small positive or net negative cash flow can be more sensitive to near term investment volatility, particularly if the size of the fund is shrinking, which can result in less assets being available for investment in the market.

To assist with determining the maturity of the plan, we have provided some relevant metrics in table following titled “Plan Maturity Measures and Other Risk Metrics”. Highlights of this information are discussed below:

- The Support Ratio, determined as the ratio of active to inactive members, has decreased from 156.5% to 145.8% over the last three years, meaning the plan’s maturity has remained relatively consistent.
- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the accrued liability associated with those receiving payments, to the Total Accrued Liability, is 55.1%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors will need to be made up for over a shorter time horizon than would be needed for a less mature plan.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has increased from 54.4% on May 1, 2017 to 56.5% on May 1, 2019, due mainly to plan experience including the transition of actuarial services.

It is important to note that the actuary has identified the risks above as the most significant risks based on the characteristics of the plan and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modelling, as well as the identification of additional risks, can be provided at the request of the reader.

PLAN MATURITY MEASURES AND OTHER RISK METRICS

	<u>5/1/2017</u>	<u>5/1/2018</u>	<u>5/1/2019</u>
<u>Support Ratio</u>			
Total Actives	36	36	35
Total Inactives	23	22	24
Actives / Inactives	156.5%	163.6%	145.8%
<u>Asset Volatility Ratio</u>			
Market Value of Assets (MVA)	20,318,309	22,398,007	24,017,118
Total Annual Payroll	3,256,583	3,498,076	3,333,936
MVA / Total Annual Payroll	623.9%	640.3%	720.4%
<u>Accrued Liability (AL) Ratio</u>			
Inactive Accrued Liability	18,431,366	19,243,158	23,603,782
Total Accrued Liability	38,753,183	40,320,629	42,865,404
Inactive AL / Total AL	47.6%	47.7%	55.1%
<u>Funded Ratio</u>			
Actuarial Value of Assets (AVA)	21,095,094	22,667,654	24,200,228
Total Accrued Liability	38,753,183	40,320,629	42,865,404
AVA / Total Accrued Liability	54.4%	56.2%	56.5%

STATEMENT OF FIDUCIARY NET POSITION
April 30, 2019

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Checking Account	13,869
Money Market	1,278,157
Total Cash and Equivalents	1,292,026
Receivables:	
Prepays	14,131
Accrued Past Due Interest	61,101
Total Receivable	75,232
Investments:	
Municipal Obligations	231,374
Corporate Bonds	3,677,174
U.S. Gov't and Agency Obligations	3,578,416
Stocks	7,509,711
Mutual Funds	7,654,451
Total Investments	22,651,126
Total Assets	24,018,384
<u>LIABILITIES</u>	
Liabilities:	
Payable:	
Expenses	1,266
Total Liabilities	1,266
Net Assets:	
Active and Retired Members' Equity	24,017,118
NET POSITION RESTRICTED FOR PENSIONS	24,017,118
TOTAL LIABILITIES AND NET ASSETS	24,018,384

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
 FOR THE YEAR ENDED April 30, 2019
 Market Value Basis

ADDITIONS

Contributions:

Member	331,359
City	1,389,261

Total Contributions 1,720,620

Investment Income:

Miscellaneous Income	1,931	
Net Realized Gain (Loss)	191,671	
Unrealized Gain (Loss)	749,222	
Net Increase in Fair Value of Investments		942,824
Interest & Dividends		565,623
Less Investment Expense ¹		(83,708)

Net Investment Income 1,424,739

Total Additions 3,145,359

DEDUCTIONS

Distributions to Members:

Benefit Payments	1,471,691
Refund of Contributions/Transfers	23,988

Total Distributions 1,495,679

Administrative Expenses 30,569

Total Deductions 1,526,248

Net Increase in Net Position 1,619,111

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year 22,398,007

End of the Year 24,017,118

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

ACTUARIAL ASSET VALUATION

April 30, 2019

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				
		2019	2020	2021	2022	2023
4/30/2016	(1,765,280)	(353,056)	0	0	0	0
4/30/2017	438,711	175,484	87,742	0	0	0
4/30/2018	265,654	159,392	106,262	53,131	0	0
4/30/2019	(206,162)	(164,930)	(123,697)	(82,465)	(41,232)	0
Total		(183,110)	70,307	(29,334)	(41,232)	0

Development of Investment Gain/Loss

Market Value of Assets, 4/30/2018	22,398,007
Contributions Less Benefit Payments & Administrative Expenses	194,372
Expected Investment Earnings ¹	1,630,901
Actual Net Investment Earnings	<u>1,424,739</u>
2019 Actuarial Investment Gain/(Loss)	(206,162)

¹ Expected Investment Earnings = 7.25% x (22,398,007 + 0.5 x 194,372)

Development of Actuarial Value of Assets

Market Value of Assets, 4/30/2019	24,017,118
(Gains)/Losses Not Yet Recognized	<u>183,110</u>
Actuarial Value of Assets, 4/30/2019	24,200,228
(A) 4/30/2018 Actuarial Assets:	22,667,654
(I) Net Investment Income:	
1. Interest and Dividends	567,554
2. Realized Gains (Losses)	191,671
3. Change in Actuarial Value	662,685
4. Investment Expenses	<u>(83,708)</u>
Total	1,338,202
(B) 4/30/2019 Actuarial Assets:	24,200,228
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	5.88%
Market Value of Assets Rate of Return:	6.33%
4/30/2019 Limited Actuarial Assets:	24,200,228
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	(312,249)

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
 April 30, 2019
 Actuarial Asset Basis

INCOME		
Contributions:		
Member	331,359	
City	1,389,261	
Total Contributions		1,720,620
Earnings from Investments		
Interest & Dividends	565,623	
Miscellaneous Income	1,931	
Net Realized Gain (Loss)	191,671	
Change in Actuarial Value	662,685	
Total Earnings and Investment Gains		1,421,910
EXPENSES		
Administrative Expenses:		
Investment Related ¹	83,708	
Other	30,569	
Total Administrative Expenses		114,277
Distributions to Members:		
Benefit Payments	1,471,691	
Refund of Contributions/Transfers	23,988	
Total Distributions		1,495,679
Change in Net Assets for the Year		1,532,574
Net Assets Beginning of the Year		22,667,654
Net Assets End of the Year ²		24,200,228

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>5/1/2016</u>	<u>5/1/2017</u>	<u>5/1/2018</u>	<u>5/1/2019</u>
<u>Actives - Tier 1</u>				
Number	N/A	28	28	25
Average Current Age	N/A	N/A	45.4	45.2
Average Age at Employment	N/A	N/A	26.8	26.7
Average Past Service	N/A	N/A	18.6	18.5
Average Annual Salary	N/A	N/A	\$101,924	\$102,741
<u>Actives - Tier 2</u>				
Number	N/A	8	8	10
Average Current Age	N/A	N/A	30.6	30.0
Average Age at Employment	N/A	N/A	27.8	27.7
Average Past Service	N/A	N/A	2.8	2.3
Average Annual Salary	N/A	N/A	\$80,525	\$76,540
<u>Service Retirees</u>				
Number	N/A	16	15	17
Average Current Age	N/A	N/A	65.5	62.9
Average Annual Benefit	N/A	\$69,257	\$74,363	\$79,073
<u>Beneficiaries</u>				
Number	N/A	4	4	3
Average Current Age	N/A	N/A	78.8	74.7
Average Annual Benefit	N/A	\$28,060	\$28,060	\$33,414
<u>Disability Retirees</u>				
Number	N/A	2	2	2
Average Current Age	N/A	N/A	61.9	62.9
Average Annual Benefit	N/A	\$62,761	\$63,358	\$63,954
<u>Terminated Vested</u>				
Number	N/A	1	1	2
Average Current Age	N/A	N/A	43.6	40.9
Average Annual Benefit ¹	N/A	\$24,243	\$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	1	0	0	0	0	0	0	0	0	0	0	1
25 - 29	0	0	2	1	1	0	0	0	0	0	0	4
30 - 34	3	0	0	0	0	2	0	0	0	0	0	5
35 - 39	0	0	0	0	0	2	3	0	0	0	0	5
40 - 44	0	0	0	0	0	0	1	4	2	0	0	7
45 - 49	0	0	0	0	0	0	1	1	4	0	0	6
50 - 54	0	0	0	0	0	0	0	0	4	1	1	6
55 - 59	0	0	0	0	0	0	0	0	0	0	1	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	4	0	2	1	1	4	5	5	10	1	2	35

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 5/1/2018	36
b. Terminations	
i. Vested (partial or full) with deferred benefits	(1)
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>(3)</u>
f. Continuing participants	31
g. New entrants	<u>4</u>
h. Total active life participants in valuation	35

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	15	4	2	1	22
Retired	3	0	0	0	3
Vested Deferred	0	0	0	1	1
Death, With Survivor	0	0	0	0	0
Death, No Survivor	(1)	(1)	0	0	(2)
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	17	3	2	2	24

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.

SUMMARY OF PARTICIPANT DATA

Plan Membership:

	<u>5/1/2019</u>	<u>5/1/2018</u>
Inactive Plan Members or Beneficiaries Currently Receiving Benefits	22	21
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	2	1
Active Plan Members	<u>35</u>	<u>36</u>
Total	59	58
Covered Payroll	\$3,333,936	\$3,498,076

SCHEDULE OF CHANGES IN NET PENSION LIABILITY

GASB 68 Reporting Period Ending	04/30/2019	04/30/2018
Measurement Date	04/30/2019	04/30/2018
Total Pension Liability		
Service Cost	833,050	755,129
Interest	2,896,070	2,815,689
Changes of Benefit Terms	-	-
Differences Between Expected and Actual Experience	(492,806)	(1,120,976)
Changes of Assumptions	823,021	-
Benefit Payments, Including Refunds of Employee Contributions	(1,495,679)	(1,342,440)
Net Change in Total Pension Liability	2,563,656	1,107,402
Total Pension Liability - Beginning	39,860,585	38,753,183
Total Pension Liability - Ending (a)	\$ 42,424,241	\$ 39,860,585
Plan Fiduciary Net Position		
Contributions - Employer	1,389,261	1,365,906
Contributions - Employee	331,359	335,276
Net Investment Income	1,424,739	1,750,685
Benefit Payments, Including Refunds of Employee Contributions	(1,495,679)	(1,342,440)
Administrative Expense	(30,569)	(29,729)
Net Change in Plan Fiduciary Net Position	1,619,111	2,079,698
Plan Fiduciary Net Position - Beginning	22,398,007	20,318,309
Plan Fiduciary Net Position - Ending (b)	\$ 24,017,118	\$ 22,398,007
Net Pension Liability - Ending (a) - (b)	\$ 18,407,123	\$ 17,462,578
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	56.61%	56.19%
Covered Payroll	\$ 3,333,936	\$ 3,498,076
Net Pension Liability as a Percentage of Covered Payroll	552.11%	499.21%

Changes reflected in April 30, 2019 results:

The results reflect the assumption changes noted in the assumptions section of the report.

STATEMENT OF 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, 2018	\$ 39,860,585	\$ 22,398,007	\$ 17,462,578
Changes for a Year:			
Service Cost	833,050	-	833,050
Interest	2,896,070	-	2,896,070
Differences Between Expected and Actual Experience	(492,806)	-	(492,806)
Changes of Assumptions	823,021	-	823,021
Changes of Benefit Terms	-	-	-
Contributions - Employer	-	1,389,261	(1,389,261)
Contributions - Employee	-	331,359	(331,359)
Net Investment Income	-	1,424,739	(1,424,739)
Benefit Payments, Including Refunds of Employee Contributions	(1,495,679)	(1,495,679)	-
Administrative Expense	-	(30,569)	30,569
Net Changes	<u>2,563,656</u>	<u>1,619,111</u>	<u>944,545</u>
Balances at April 30, 2019	\$ 42,424,241	\$ 24,017,118	\$ 18,407,123

Sensitivity of 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	\$ 24,697,409	\$ 18,407,123	\$ 13,271,884

Pension Plan Fiduciary Net Position

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

GASB 68

PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF
RESOURCES RELATED TO PENSIONS
YEAR-END APRIL 30, 2019

For the year ended April 30, 2019, the Sponsor will recognize a pension expense of \$2,327,143. On April 30, 2019, 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 actual and expected experience	0	1,260,979
Changes of assumptions	1,092,848	0
Net difference between projected and actual earnings on pension plan investments	183,106	0
Total	\$1,275,954	\$1,260,979

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:

2020	\$405,636
2021	(\$236,925)
2022	(\$149,658)
2023	(\$98,424)
2024	\$47,173
Thereafter	\$47,173

COMPONENTS OF PENSION EXPENSE
YEAR-END APRIL 30, 2019

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning Balance	\$ 17,462,578	\$ 1,573,773	\$ 1,582,085	
Total Pension Liability Factors:				
Service Cost	833,050	-	-	833,050
Interest	2,896,070	-	-	2,896,070
Changes in Benefit Terms	-	-	-	-
Differences Between Expected and Actual Experience With Regard to Economic or Current Year Amortization	(492,806)	492,806	-	-
Current Year Amortization	-	(329,849)	-	(329,849)
Changes in Assumptions About Future Economic or Demographic Factors or Other Inputs	823,021	-	823,021	-
Current Year Amortization	-	-	(606,146)	606,146
Benefit Payments, Including Refunds of Employee Contributions	(1,495,679)	-	-	-
Net Change	<u>2,563,656</u>	<u>162,957</u>	<u>216,875</u>	<u>4,005,417</u>
Plan Fiduciary Net Position:				
Contributions - Employer	1,389,261	-	-	-
Contributions - Employee	331,359	-	-	(331,359)
Projected Net Investment Income	1,630,901	-	-	(1,630,901)
Difference Between Projected and Actual Earnings on Pension Plan Investments	(206,162)	-	206,162	-
Current Year Amortization	-	(140,873)	(394,290)	253,417
Benefit Payments, Including Refunds of Employee Contributions	(1,495,679)	-	-	-
Administrative Expenses	(30,569)	-	-	30,569
Net Change	<u>1,619,111</u>	<u>(140,873)</u>	<u>(188,128)</u>	<u>(1,678,274)</u>
Ending Balance	<u>\$ 18,407,123</u>	<u>\$ 1,595,857</u>	<u>\$ 1,610,832</u>	<u>\$ 2,327,143</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)	2019	2020	2021	2022	2023	2024	2025
2019	\$ (492,806)	7	\$ (70,400)	\$ (70,401)	\$ (70,401)	\$ (70,401)	\$ (70,401)	\$ (70,401)	\$ (70,401)
2018	\$ (1,120,976)	6	\$ (186,829)	\$ (186,829)	\$ (186,829)	\$ (186,829)	\$ (186,829)	\$ -	\$ -
2017	\$ (111,650)	5.8	\$ (19,250)	\$ (19,250)	\$ (19,250)	\$ (15,400)	\$ -	\$ -	\$ -
2016	\$ (250,837)	4.7	\$ (53,370)	\$ (37,357)	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			(329,849)	(313,837)	(276,480)	(272,630)	(257,230)	(70,401)	(70,401)

AMORTIZATION SCHEDULE – CHANGES OF ASSUMPTIONS

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

Year Base Established	Effects of Changes in Assumptions	Recognition Period (Years)	2019	2020	2021	2022	2023	2024	2025
2019	\$ 823,021	7	\$ 117,577	\$ 117,574	\$ 117,574	\$ 117,574	\$ 117,574	\$ 117,574	\$ 117,574
2017	\$ 125,412	5.8	\$ 21,623	\$ 21,623	\$ 21,623	\$ 17,297	\$ -	\$ -	\$ -
2016	\$ 2,194,645	4.7	\$ 466,946	\$ 326,861	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 606,146	\$ 466,058	\$ 139,197	\$ 134,871	\$ 117,574	\$ 117,574	\$ 117,574

AMORTIZATION SCHEDULE – INVESTMENTS

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

Year Base Established	Differences		Increase (Decrease) in Pension Expense Arising from the Recognition of the Differences Between Projected and Actual Earnings on Pension Plan Investments							
	Between Projected and Actual Earnings	Recognition Period (Years)	2019	2020	2021	2022	2023	2024		
2019	\$ 206,162	5	\$ 41,234	\$ 41,232	\$ 41,232	\$ 41,232	\$ 41,232	\$ 41,232	\$ -	\$ -
2018	\$ (265,654)	5	\$ (53,131)	\$ (53,131)	\$ (53,131)	\$ (53,131)	\$ -	\$ -	\$ -	\$ -
2017	\$ (438,711)	5	\$ (87,742)	\$ (87,742)	\$ (87,743)	\$ -	\$ -	\$ -	\$ -	\$ -
2016	\$ 1,765,280	5	\$ 353,056	\$ 353,056	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 253,417	\$ 253,415	\$ (99,642)	\$ (11,899)	\$ 41,232	\$ -	\$ -	\$ -

SCHEDULE OF CONTRIBUTIONS

Plan Year-End	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Contributions Covered Payroll	Contributions as a Percentage of Covered Payroll
04/30/2019	1,360,637	1,389,261	(28,624)	3,333,936	41.67%
04/30/2018	1,295,483	1,365,906	(70,423)	3,498,076	39.05%

The following assumptions were used to determine the Actuarially Determined Contribution as of May 1, 2017:

Calculation Timing	The Actuarially Determined Contribution is calculated as of May 1 two years prior to the year in which contributions are reported.
Interest Rate	7.25%
Mortality Rate	RP 2014 Mortality Table (BCHA) projected to 2017 using improvement scale MP-2016.
Assumptions	All other assumptions and methods used for determining the Actuarially Determined Contribution can be found in the May 1, 2017 Actuarial Valuation Report for the City of Geneva Police Pension Fund prepared by the prior Actuary, Timothy W. Sharpe, Geneva, IL.

SCHEDULE OF INVESTMENT RETURNS

For the year ended April 30, 2019, the annual money-weighted return on Pension Plan investments, net of pension plan investment expense, was 6.48 percent. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Plan Year-End	Annual Money-Weighted Rate of Return Net of Investment Expense
04/30/2019	6.48%
04/30/2018	8.70%

ASSUMPTIONS – TOTAL PENSION LIABILITY

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 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%.

In addition, mortality rates were updated to reflect the PubS-2010 Tables.

The following assumptions were used to determine the Net Pension Liability:

Valuation Date	May 1, 2019
Measurement Date	April 30, 2019
GASB 68 Expense Measurement Period	May 1, 2018 - April 30, 2019
Reporting Period	May 1, 2018 - April 30, 2019
Discount Rate	7.25%
Mortality Rate	<p>Active Lives: PubS-2010 Employee mortality, projected 5 years past the valuation date with Scale MP-2018. 10% of active deaths are assumed to be in the line of duty.</p> <p>Inactive Lives: PubS-2010 Healthy Retiree mortality, projected 5 years past the valuation date with Scale MP-2018.</p> <p>Beneficiaries: PubS-2010 Survivor mortality, projected 5 years past the valuation date with Scale MP-2018.</p> <p>Disabled Lives: PubS-2010 Disabled mortality, projected 5 years past the valuation date with Scale MP-2018.</p> <p>The mortality assumptions sufficiently accommodate anticipated future mortality improvements.</p>
Retirement Age	See table later in this section. This is based on a 2017 experience study performed for the State of Illinois Department of Insurance.
Disability Rate	See table later in this section. 60% of the disabilities are assumed to be in the line of duty. This is based on a 2017 experience study performed for the State of Illinois Department of Insurance.
Termination Rate	See table later in this section. This is based on a 2017 experience study performed for the State of Illinois Department of Insurance.

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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>
Salary Increases	5.00%
Marital Status	80% of Members are assumed to be married.
Spouse's Age	Males are assumed to be three years older than females.
Method	Entry Age Normal Cost Method.

Decrement Tables

<u>% Terminating</u>		<u>% Becoming Disabled</u>		<u>% Retiring</u>		<u>% Retiring</u>	
<u>During the Year</u>		<u>During the Year</u>		<u>During the Year (Tier 1)</u>		<u>During the Year (Tier 2)</u>	
<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
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%				

NOTES TO THE FINANCIAL STATEMENTS

Support for Long-Term Expected Rate of Return

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.

These ranges are combined to produce the Long-Term Expected Rate of Return by weighting the expected future real rates of return by 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 adopted as of April 30, 2019, as provided by Morgan Stanley Wealth Management, are summarized in the following table:

Asset Class	Target Allocation	Long Term Expected Real Rate of Return
Domestic Equity	49%	5.80%
International Equity	11%	5.20%
Fixed Income	35%	1.80%
Emerging Markets	5%	6.90%
Total	100%	

Inflation rate of investment advisor 1.90%

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.

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 (7.25 percent) was applied to all periods of projected benefit payments to determine the Total Pension Liability.

For the purpose of this valuation, the expected rate of return on pension plan investments is 7.25 percent. The municipal bond rate is 3.21 percent (based on the daily rate closest to, but not later than the measurement date of the S&P Municipal Bond 20 Year High Grade Rate Index). The resulting single discount rate is 7.25 percent.

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 a single employer defined benefit pension plan 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.

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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.