

CITY OF GENEVA  
FIREFIGHTERS' PENSION FUND

ACTUARIAL VALUATION  
AS OF MAY 1, 2022

CONTRIBUTIONS APPLICABLE TO THE  
PLAN/FISCAL YEAR ENDING APRIL 30, 2024

GASB 67/68 DISCLOSURE INFORMATION  
AS OF APRIL 30, 2022



**FOSTER & FOSTER**  
ACTUARIES AND CONSULTANTS



August 5, 2022

Ms. Rita Kruse  
City of Geneva Firefighters' Pension Fund

Re: Actuarial Valuation Report (including GASB Statements No. 67 and No. 68) – City of Geneva Firefighters' 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 Firefighters' 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 could produce significantly different results.

The valuations have 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 reflect laws and regulations issued to date pursuant to the provisions of Article 4, Illinois Pension Code, as well as applicable federal laws and regulations. In our opinion, the assumptions used in this valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuations, we did not perform an analysis of the potential range of such future measurements.

The funding percentages and unfunded accrued liability as measured based on the actuarial value of assets will differ from similar measures based on the market value of assets. These measures, as provided, are appropriate for determining the adequacy of future contributions, but may not be appropriate for the purpose of settling a portion or all of its liabilities.

In conducting the valuations, 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.

In performing the analysis, we used third-party software to model (calculate) the underlying liabilities and costs. These results are reviewed in the aggregate and for individual sample lives. The output from the software is either used directly or input into internally developed models to generate the costs. All internally developed models are reviewed as part of the process. As a result of this review, we believe that the models have produced reasonable results. We do not believe there are any material inconsistencies among assumptions or unreasonable output produced due to the aggregation of assumptions.

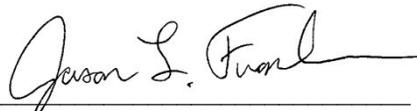
The undersigned are familiar with the immediate and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the 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 Firefighters' Pension Fund. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

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

Respectfully submitted,

Foster & Foster, Inc.

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

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

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Enclosures

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## SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Geneva Firefighters' Pension Fund, performed as of May 1, 2022, 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, 2024.

The contribution requirements, compared with those set forth in the May 1, 2021 actuarial report, are as follows:

Valuation Date	5/1/2022	5/1/2021
Applicable to Fiscal Year Ending	<u>4/30/2024</u>	<u>4/30/2023</u>
Total Recommended Contribution	\$1,269,590	\$1,092,462
% of Projected Annual Payroll	56.8%	49.8%
Member Contributions (Est.)	(211,243)	(207,323)
% of Projected Annual Payroll	(9.5%)	(9.5%)
City Recommended Contribution	1,058,347	885,139
% of Projected Annual Payroll	47.3%	40.3%

As you can see, the Total Recommended Contribution shows an increase when compared to the results determined in the May 1, 2021 actuarial valuation report. The increase is primarily attributable to assumption changes, net unfavorable plan experience, and the natural increase in the amortization payment due to the payroll growth assumption.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. Sources of unfavorable experience included an investment return of 5.36% (Actuarial Asset Basis) which fell short of the 7.00% assumption, more retirements than expected, and an average salary increase of 6.93% which exceeded the 5.58% assumption. These losses were offset in part by a gain associated with more turnover than expected.

## CHANGES SINCE PRIOR VALUATION

### Plan Changes Since Prior Valuation

There were no plan changes since the prior valuation.

### Actuarial Assumption/Method Changes Since Prior Valuation

Based on the results of the 2021 experience study performed for the Illinois Firefighters' Pension Investment Fund, the following assumption changes were made:

- Updated mortality, retirement, and termination rate tables.
- Updated assumed salary increase rates.
- Reduced assumed payroll growth rate from 4.00% to 3.50%.

There were no method changes since the prior valuation.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	New Assump <u>5/1/2022</u>	Old Assump <u>5/1/2022</u>	<u>5/1/2021</u>
<b>A. Participant Data</b>			
Number Included			
Actives	22	22	22
Service Retirees	13	13	11
Beneficiaries	4	4	1
Disability Retirees	0	0	0
Terminated Vested	<u>4</u>	<u>4</u>	<u>5</u>
Total	43	43	39
Total Annual Payroll	\$2,234,192	\$2,234,192	\$2,192,738
Payroll Under Assumed Ret. Age	2,234,192	2,234,192	2,192,738
Annual Rate of Payments to:			
Service Retirees	945,148	945,148	822,772
Beneficiaries	107,012	107,012	16,952
Disability Retirees	0	0	0
Terminated Vested	4,977	4,977	3,287
<b>B. Assets</b>			
Actuarial Value	18,883,395	18,883,395	17,853,414
Market Value	18,103,753	18,103,753	19,054,568
<b>C. Liabilities</b>			
Present Value of Benefits			
Actives			
Retirement Benefits	15,143,029	14,210,900	14,897,627
Disability Benefits	1,617,901	1,660,089	1,617,732
Death Benefits	191,474	204,892	206,646
Vested Benefits	548,354	515,222	595,404
Service Retirees	14,468,910	14,480,509	12,744,172
Beneficiaries	981,121	982,047	48,746
Disability Retirees	0	0	0
Terminated Vested	<u>63,055</u>	<u>62,309</u>	<u>43,790</u>
Total	33,013,844	32,115,968	30,154,117

C. Liabilities - (Continued)	New Assump <u>5/1/2022</u>	Old Assump <u>5/1/2022</u>	<u>5/1/2021</u>
Present Value of Future Salaries	23,091,584	23,660,284	22,376,237
Present Value of Future Member Contributions	2,183,309	2,237,080	2,115,673
Normal Cost (Retirement)	425,031	405,941	400,360
Normal Cost (Disability)	78,429	79,704	88,703
Normal Cost (Death)	13,628	15,220	15,115
Normal Cost (Vesting)	<u>33,471</u>	<u>30,191</u>	<u>29,931</u>
Total Normal Cost	550,559	531,056	534,109
Present Value of Future Normal Costs	5,348,584	5,298,543	5,057,734
Accrued Liability (Retirement)	10,976,362	10,119,755	10,973,916
Accrued Liability (Disability)	780,742	797,818	824,447
Accrued Liability (Death)	55,526	50,602	57,467
Accrued Liability (Vesting)	339,544	324,385	403,845
Accrued Liability (Inactives)	<u>15,513,086</u>	<u>15,524,865</u>	<u>12,836,708</u>
Total Actuarial Accrued Liability	27,665,260	26,817,425	25,096,383
Unfunded Actuarial Accrued Liability (UAAL)	8,781,865	7,934,030	7,242,969
Funded Ratio (AVA / AL)	68.3%	70.4%	71.1%

	New Assump <u>5/1/2022</u>	Old Assump <u>5/1/2022</u>	<u>5/1/2021</u>
D. Actuarial Present Value of Accrued Benefits			
Vested Accrued Benefits			
Inactives	15,513,086	15,524,865	12,836,708
Actives	3,938,512	3,579,398	4,518,165
Member Contributions	<u>2,343,400</u>	<u>2,343,400</u>	<u>2,343,400</u>
Total	21,794,998	21,447,663	19,698,273
Non-vested Accrued Benefits	<u>470,189</u>	<u>424,774</u>	<u>441,321</u>
Total Present Value Accrued Benefits	22,265,187	21,872,437	20,139,594
Funded Ratio (MVA / PVAB)	81.3%	82.8%	94.6%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:			
Plan Amendments	0	0	
Assumption Changes	392,750	0	
Plan Experience	0	1,333,480	
Benefits Paid	0	(976,240)	
Interest	0	1,375,603	
Other	<u>0</u>	<u>0</u>	
Total	392,750	1,732,843	

	New Assump	Old Assump	
Valuation Date	5/1/2022	5/1/2022	5/1/2021
Applicable to Fiscal Year Ending	<u>4/30/2024</u>	<u>4/30/2024</u>	<u>4/30/2023</u>

#### E. Pension Cost

Normal Cost <sup>1</sup>	\$589,098	\$568,230	\$571,497
% of Total Annual Payroll <sup>1</sup>	26.4	25.4	26.1
Administrative Expenses <sup>1</sup>	24,307	24,307	20,036
% of Total Annual Payroll <sup>1</sup>	1.1	1.1	0.9
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 19 years (as of 5/1/2022) <sup>1</sup>	656,185	570,193	500,929
% of Total Annual Payroll <sup>1</sup>	29.3	25.5	22.8
Total Recommended Contribution	1,269,590	1,162,730	1,092,462
% of Total Annual Payroll <sup>1</sup>	56.8	52.0	49.8
Expected Member Contributions <sup>1</sup>	(211,243)	(211,243)	(207,323)
% of Total Annual Payroll <sup>1</sup>	(9.5)	(9.5)	(9.5)
Expected City Contribution	1,058,347	951,487	885,139
% of Total Annual Payroll <sup>1</sup>	47.3	42.5	40.3

#### F. Past Contributions

Plan Years Ending:	<u>4/30/2022</u>
Total Recommended Contribution	1,007,367
City	798,508
Actual Contributions Made:	
Members (excluding buyback)	208,859
City	<u>805,975</u>
Total	1,014,834

G. Net Actuarial (Gain)/Loss 649,196

<sup>1</sup> Contributions developed as of 5/1/2022 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>
2022	8,781,865
2023	8,740,411
2024	8,673,088
2028	8,089,560
2033	6,394,185
2037	3,912,410
2041	0

I. (i) 5 Year Comparison of Actual and Assumed Salary Increases

		<u>Actual</u>	<u>Assumed</u>
Year Ended	4/30/2022	6.93%	5.58%
Year Ended	4/30/2021	1.82%	5.66%
Year Ended	4/30/2020	4.04%	5.00%
Year Ended	4/30/2019	4.62%	5.00%
Year Ended	4/30/2018	4.73%	5.00%

(ii) 5 Year Comparison of Investment Return on Actuarial Value

		<u>Actual MVA</u>	<u>Actual AVA</u>	<u>Assumed</u>
Year Ended	4/30/2022	-5.35%	5.36%	7.00%
Year Ended	4/30/2021	33.27%	7.25%	7.25%
Year Ended	4/30/2020	-7.88%	1.67%	7.25%
Year Ended	4/30/2019	0.88%	4.11%	7.25%
Year Ended	4/30/2018	7.53%	4.87%	7.25%

DEVELOPMENT OF MAY 1, 2022 AMORTIZATION PAYMENT

(1)	Unfunded Actuarial Accrued Liability as of May 1, 2021	\$7,242,969
(2)	Sponsor Normal Cost developed as of May 1, 2021	326,786
(3)	Expected administrative expenses for the year ended April 30, 2022	18,725
(4)	Expected interest on (1), (2) and (3)	530,538
(5)	Sponsor contributions to the System during the year ended April 30, 2022	805,975
(6)	Expected interest on (5)	28,209
(7)	Expected Unfunded Actuarial Accrued Liability as of April 30, 2022, (1)+(2)+(3)+(4)-(5)-(6)	7,284,834
(8)	Change to UAAL due to Assumption Change	847,835
(9)	Change to UAAL due to Actuarial (Gain)/Loss	649,196
(10)	Unfunded Accrued Liability as of May 1, 2022	8,781,865
(11)	UAAL Subject to Amortization (100% AAL less Actuarial Assets)	8,781,865

<u>Date</u> <u>Established</u>	<u>Years</u> <u>Remaining</u>	<u>5/1/2022</u> <u>Amount</u>	<u>Amortization</u> <u>Amount</u>
5/1/2022	19	8,781,865	613,257

## DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of May 1, 2021	\$7,242,969
(2) Expected UAAL as of May 1, 2022	7,284,834
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	292,798
Salary Increases	186,231
Active Decrements	(111,981)
Inactive Mortality	84,183
Other	<u>197,965</u>
Change in UAAL due to (Gain)/Loss	649,196
Change to UAAL due to Assumption Change	<u>847,835</u>
(4) Actual UAAL as of May 1, 2022	\$8,781,865

## RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1) Contribution Determined as of May 1, 2021	\$	885,139
(2) Summary of Contribution Impact by component:		
Change in Normal Cost		(3,267)
Change in Assumed Administrative Expense		4,271
Investment Return (Actuarial Asset Basis)		21,042
Salary Increases		13,384
New Entrants		1,058
Active Decrements		(8,048)
Inactive Mortality		6,050
Contributions (More) or Less than Recommended		(555)
Increase in Amortization Payment Due to Payroll Growth Assumption		20,037
Change in Expected Member Contributions		(3,920)
Assumption Change		106,860
Other		<u>16,296</u>
Total Change in Contribution		173,208
(3) Contribution Determined as of May 1, 2022		\$1,058,347

## 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	5/1/2022	5/1/2022	5/1/2021
Applicable to Fiscal Year Ending	<u>4/30/2024</u>	<u>4/30/2024</u>	<u>4/30/2023</u>
Actuarial Accrued Liability (PUC)	26,473,343	25,723,938	24,110,850
Actuarial Value of Assets	<u>18,883,395</u>	<u>18,883,395</u>	<u>17,853,414</u>
Unfunded Actuarial Accrued Liability (UAAL)	7,589,948	6,840,543	6,257,436
UAAL Subject to Amortization	4,942,614	4,268,149	3,846,351
Normal Cost <sup>1</sup>	\$710,704	\$671,242	\$660,382
% of Total Annual Payroll <sup>1</sup>	31.8	30.0	30.1
Administrative Expenses <sup>1</sup>	24,307	24,307	20,036
% of Total Annual Payroll <sup>1</sup>	1.1	1.1	0.9
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 18 years (as of 5/1/2022) <sup>1</sup>	384,053	319,605	276,425
% of Total Annual Payroll <sup>1</sup>	17.2	14.3	12.6
Total Required Contribution	1,119,064	1,015,154	956,843
% of Total Annual Payroll <sup>1</sup>	50.1	45.4	43.6
Expected Member Contributions <sup>1</sup>	(211,243)	(211,243)	(207,323)
% of Total Annual Payroll <sup>1</sup>	(9.5)	(9.5)	(9.5)
Expected City Contribution	907,821	803,911	749,520
% of Total Annual Payroll <sup>1</sup>	40.6	35.9	34.1

### 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.

<sup>1</sup> Contributions developed as of 5/1/2022 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
2022	25,538	1,051,829	1,077,367
2023	65,710	1,063,647	1,129,357
2024	113,886	1,078,065	1,191,951
2025	165,649	1,090,030	1,255,679
2026	253,158	1,110,180	1,363,338
2027	357,085	1,129,843	1,486,928
2028	463,586	1,139,761	1,603,347
2029	572,242	1,160,747	1,732,989
2030	688,186	1,177,667	1,865,853
2031	813,467	1,193,341	2,006,808
2032	927,581	1,207,711	2,135,292
2033	1,039,875	1,220,744	2,260,619
2034	1,146,096	1,232,393	2,378,489
2035	1,248,088	1,242,560	2,490,648
2036	1,367,113	1,251,095	2,618,208
2037	1,479,515	1,257,796	2,737,311
2038	1,586,199	1,262,344	2,848,543
2039	1,700,013	1,264,350	2,964,363
2040	1,810,929	1,263,343	3,074,272
2041	1,916,183	1,258,797	3,174,980
2042	2,037,839	1,250,131	3,287,970
2043	2,174,538	1,236,729	3,411,267
2044	2,293,124	1,218,016	3,511,140
2045	2,398,446	1,193,577	3,592,023
2046	2,506,695	1,163,143	3,669,838
2047	2,640,512	1,126,630	3,767,142
2048	2,762,942	1,084,143	3,847,085
2049	2,864,813	1,035,987	3,900,800
2050	2,992,791	982,674	3,975,465
2051	3,105,109	924,886	4,029,995
2052	3,196,033	863,462	4,059,495
2053	3,277,699	799,369	4,077,068
2054	3,346,782	733,619	4,080,401
2055	3,407,146	667,223	4,074,369
2056	3,461,412	601,185	4,062,597
2057	3,506,382	536,418	4,042,800
2058	3,542,791	473,788	4,016,579
2059	3,569,062	414,087	3,983,149
2060	3,585,426	357,945	3,943,371
2061	3,591,091	305,893	3,896,984

## ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate	7.00% per year compounded annually, net of investment related expenses.
Mortality Rate	<p><b>Active Lives:</b> PubS-2010 Employee mortality, unadjusted, with generational improvements with the most recent projection scale (currently Scale MP-2021). 20% of active deaths are assumed to be in the line of duty.</p> <p><b>Inactive Lives:</b> PubS-2010 Healthy Retiree mortality, adjusted by a factor of 1.081 for male retirees and unadjusted for female retirees, with generational improvements with the most recent projection scale (currently Scale MP-2021).</p> <p><b>Beneficiaries:</b> PubS-2010 Survivor mortality, unadjusted for male beneficiaries and adjusted by a factor of 1.098 for female beneficiaries, with generational improvements with the most recent projection scale (currently Scale MP-2021).</p> <p><b>Disabled Lives:</b> PubS-2010 Disabled mortality, adjusted by a factor of 1.178 for male disabled members and unadjusted for female disabled members, with generational improvements with the most recent projection scale (currently Scale MP-2021).</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 2021 experience study performed for the Illinois Firefighters' Pension Investment Fund.
Disability Rate	See table later in this section. 80% of the disabilities are assumed to be in the line of duty. This is based on a 2021 experience study performed for the Illinois Firefighters' Pension Investment Fund.
Termination Rate	See table later in this section. This is based on a 2021 experience study performed for the Illinois Firefighters' Pension Investment Fund.
Inflation	2.50%.

Cost-of-Living Adjustment Tier 1: 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 2: 1.125% per year after the later of attainment of age 60 or first anniversary of retirement.

Salary Increases See table below, inclusive of inflation. This is based on a 2021 experience study performed for the Illinois Firefighters’ Pension Investment Fund.

Salary Scale	
Service	Rate
0	12.50%
1	10.50%
2	9.50%
3	8.50%
4	7.50%
5	6.50%
6	5.00%
7	4.50%
8+	4.00%

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. 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.

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 3.50% per year (previously 4.00%).

Administrative Expenses Expenses paid out of the fund other than investment-related expenses are assumed to be equal to those paid in the previous year.

Decrement Tables

% Terminating During the Year		% Becoming Disabled During the Year		% Retiring During the Year (Tier 1)		% Retiring During the Year (Tier 2)	
Age	Rate	Age	Rate	Age	Rate	Age	Rate
20	10.00%	20	0.010%	50-51	12%	50-54	3%
25	8.00%	25	0.016%	52-53	15%	55	30%
30	4.00%	30	0.068%	54-55	20%	56-59	20%
35	2.50%	35	0.220%	56-59	20%	60-62	25%
40	1.20%	40	0.420%	60-62	25%	63-64	33%
45+	1.00%	45	0.650%	63-64	33%	65-69	50%
		50	0.900%	65-69	50%	70+	100%
		55	1.240%	70+	100%		
		60	1.580%				

## 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. It is 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:** This risk results from the potential that actual employer contributions may deviate from actuarially determined contributions, which are determined in accordance with the Board's funding policy. The funding policy is intended to result in contribution requirements that if paid when due, will result in a reasonable expectation that assets will accumulate to be sufficient to pay plan benefits when due. Contribution deficits, particularly large deficits and those that occur repeatedly, increase future contribution requirements and put the plan at risk for not being able to pay plan benefits when due.

### 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 the 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 123.5% on May 1, 2019 to 104.8% on May 1, 2022, indicating that the plan has been rapidly maturing.
- The Accrued Liability Ratio, determined as the ratio of the Inactive Accrued Liability, which is the liability associated with members who are no longer employed but are due a benefit from the plan, to the Total Accrued Liability, is 56.1%. With a plan of this maturity, losses due to lower than expected investment returns or demographic factors can be made up over a longer time horizon than would be needed for a more mature plan.
- The Funded Ratio, determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability, has decreased from 70.2% on May 1, 2019 to 68.3% on May 1, 2022, due mainly to unfavorable plan experience and changes in assumptions.
- The Net Cash Flow Ratio, determined as the ratio of the Net Cash Flow (contributions minus benefit payments and administrative expenses) to the Market Value of Assets, stayed approximately the same from May 1, 2019 to May 1, 2022. The current Net Cash Flow Ratio of 0.4% indicates that contributions are generally covering the plan's benefit payments and administrative expenses.

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 modeling, as well as the identification of additional risks, can be provided at the request of the audience addressed on page 2 of this report.

PLAN MATURITY MEASURES AND OTHER RISK METRICS

	<u>5/1/2022</u>	<u>5/1/2021</u>	<u>5/1/2020</u>	<u>5/1/2019</u>
<u>Support Ratio</u>				
Total Actives	22	22	22	21
Total Inactives	21	17	17	17
Actives / Inactives	104.8%	129.4%	129.4%	123.5%
 <u>Asset Volatility Ratio</u>				
Market Value of Assets (MVA)	18,103,753	19,054,568	14,150,435	15,169,457
Total Annual Payroll	2,234,192	2,192,738	2,153,532	2,008,525
MVA / Total Annual Payroll	810.3%	869.0%	657.1%	755.3%
 <u>Accrued Liability (AL) Ratio</u>				
Inactive Accrued Liability	15,513,086	12,836,708	12,380,525	12,262,387
Total Accrued Liability	27,665,260	25,096,383	23,182,961	22,848,484
Inactive AL / Total AL	56.1%	51.1%	53.4%	53.7%
 <u>Funded Ratio</u>				
Actuarial Value of Assets (AVA)	18,883,395	17,853,414	16,483,533	16,031,027
Total Accrued Liability	27,665,260	25,096,383	23,182,961	22,848,484
AVA / Total Accrued Liability	68.3%	71.1%	71.1%	70.2%
 <u>Net Cash Flow Ratio</u>				
Net Cash Flow <sup>1</sup>	70,570	168,635	183,477	(48,414)
Market Value of Assets (MVA)	18,103,753	19,054,568	14,150,435	15,169,457
Ratio	0.4%	0.9%	1.3%	-0.3%

<sup>1</sup> Determined as total contributions minus benefit payments and administrative expenses.

STATEMENT OF FIDUCIARY NET POSITION  
April 30, 2022

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Checking Account	543,569
Money Market	71,619
Total Cash and Equivalents	615,188
Total Receivable	0
Investments:	
Pooled/Common/Commingled Funds	17,490,040
Total Investments	17,490,040
Total Assets	18,105,228
 <u>LIABILITIES</u>	
Liabilities:	
Payable:	
Expenses	1,475
Total Liabilities	1,475
Net Assets:	
Active and Retired Members' Equity	18,103,753
NET POSITION RESTRICTED FOR PENSIONS	18,103,753
TOTAL LIABILITIES AND NET ASSETS	18,105,228

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION  
FOR THE YEAR ENDED April 30, 2022  
Market Value Basis

ADDITIONS

Contributions:

Member	208,859
Miscellaneous Member Revenue	54,693
City	805,975

Total Contributions 1,069,527

Investment Income:

Miscellaneous Income	(32,367)	
Net Realized Gain (Loss)	(1,474,368)	
Unrealized Gain (Loss)	(224,693)	
Net Increase in Fair Value of Investments		(1,731,428)
Interest & Dividends		738,933
Less Investment Expense <sup>1</sup>		(28,890)

Net Investment Income (1,021,385)

Total Additions 48,142

DEDUCTIONS

Distributions to Members:

Benefit Payments	973,415
Refund of Contributions/Transfers	2,825

Total Distributions 976,240

Administrative Expenses 22,717

Total Deductions 998,957

Net Increase in Net Position (950,815)

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year 19,054,568

End of the Year 18,103,753

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

ACTUARIAL ASSET VALUATION

April 30, 2022

Development of Actuarial Value of Assets

Market Value of Assets, 4/30/2022	18,103,753
(Gains)/Losses Not Yet Recognized	779,642
Actuarial Value of Assets, 4/30/2022	18,883,395
4/30/2022 Limited Actuarial Assets:	18,883,395

Development of Investment Gain/Loss

Market Value of Assets, 4/30/2021	19,054,568
Contributions Less Benefit Payments & Administrative Expenses	70,570
Expected Investment Earnings <sup>1</sup>	1,336,290
Actual Net Investment Earnings	(1,021,385)
2022 Actuarial Investment Gain/(Loss)	(2,357,675)

<sup>1</sup> Expected Investment Earnings = 7.00% x (19,054,568 + 0.5 x 70,570)

Gains/(Losses) Not Yet Recognized

Plan Year	Gain/(Loss)	Amounts Not Yet Recognized by Valuation Year				
Ending		2022	2023	2024	2025	2026
4/30/2019	(960,075)	(192,015)	0	0	0	0
4/30/2020	(2,308,936)	(923,574)	(461,787)	0	0	0
4/30/2021	3,703,478	2,222,087	1,481,391	740,696	0	0
4/30/2022	(2,357,675)	(1,886,140)	(1,414,605)	(943,070)	(471,535)	0
Total		(779,642)	(395,001)	(202,374)	(471,535)	0

Development of Asset Returns

(A) 4/30/2021 Actuarial Assets:	17,853,414
(I) Net Investment Income:	
1. Interest and Dividends	706,566
2. Realized Gains (Losses)	(1,474,368)
3. Change in Actuarial Value	1,756,103
4. Investment Expenses	(28,890)
Total	959,411
(B) 4/30/2022 Actuarial Assets:	18,883,395
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	5.36%
Market Value of Assets Rate of Return:	-5.35%
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	(292,798)

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS  
 April 30, 2022  
 Actuarial Asset Basis

INCOME		
Contributions:		
Member	208,859	
Miscellaneous Member Revenue	54,693	
City	805,975	
Total Contributions		1,069,527
Earnings from Investments		
Interest & Dividends	738,933	
Miscellaneous Income	(32,367)	
Net Realized Gain (Loss)	(1,474,368)	
Change in Actuarial Value	1,756,103	
Total Earnings and Investment Gains		988,301
EXPENSES		
Administrative Expenses:		
Investment Related <sup>1</sup>	28,890	
Other	22,717	
Total Administrative Expenses		51,607
Distributions to Members:		
Benefit Payments	973,415	
Refund of Contributions/Transfers	2,825	
Total Distributions		976,240
Change in Net Assets for the Year		1,029,981
Net Assets Beginning of the Year		17,853,414
Net Assets End of the Year <sup>2</sup>		18,883,395

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

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

## STATISTICAL DATA

	<u>5/1/2022</u>	<u>5/1/2021</u>	<u>5/1/2020</u>	<u>5/1/2019</u>
<u>Actives - Tier 1</u>				
Number	12	14	14	14
Average Current Age	46.2	46.3	45.3	44.3
Average Age at Employment	25.3	25.2	25.2	25.2
Average Past Service	20.9	21.1	20.1	19.1
Average Annual Salary	\$112,383	\$107,319	\$106,606	\$103,939
<u>Actives - Tier 2</u>				
Number	10	8	8	7
Average Current Age	35.7	36.0	35.0	35.4
Average Age at Employment	31.5	31.8	31.8	32.9
Average Past Service	4.2	4.2	3.2	2.5
Average Annual Salary	\$88,560	\$86,284	\$82,631	\$79,055
<u>Service Retirees</u>				
Number	13	11	11	11
Average Current Age	63.6	64.1	63.1	62.1
Average Annual Benefit	\$72,704	\$74,797	\$72,824	\$70,908
<u>Beneficiaries</u>				
Number	4	1	1	1
Average Current Age	43.4	97.3	96.3	95.3
Average Annual Benefit	\$26,753	\$16,952	\$16,952	\$16,952
<u>Disability Retirees</u>				
Number	0	0	0	0
Average Current Age	N/A	N/A	N/A	N/A
Average Annual Benefit	N/A	N/A	N/A	N/A
<u>Terminated Vested</u>				
Number	4	5	5	5
Average Current Age	39.3	37.9	36.9	35.9
Average Annual Benefit <sup>1</sup>	\$4,977	\$3,287	\$3,287	\$3,287

<sup>1</sup> Average Annual Benefit for Terminated Vested members reflects the benefit for members entitled to a future annual benefit from the plan.

## AGE AND SERVICE DISTRIBUTION

### PAST SERVICE

AGE	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+	Total
15 - 19	0	0	0	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0	0	0	0
25 - 29	1	0	1	0	0	0	0	0	0	0	0	2
30 - 34	0	0	0	1	0	2	0	0	0	0	0	3
35 - 39	1	0	0	1	1	1	0	0	0	0	0	4
40 - 44	0	0	0	0	0	1	0	3	0	0	0	4
45 - 49	0	0	0	0	0	0	0	0	4	1	0	5
50 - 54	0	0	0	0	0	0	0	1	0	2	0	3
55 - 59	0	0	0	0	0	0	0	0	0	0	0	0
60 - 64	0	0	0	0	0	1	0	0	0	0	0	1
65+	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	1	2	1	5	0	4	4	3	0	22

## VALUATION PARTICIPANT RECONCILIATION

### 1. Active lives

a. Number in prior valuation 5/1/2021	22
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	(1)
ii. No future benefits payable	0
d. Disabled	0
e. Retired	<u>(1)</u>
f. Continuing participants	20
g. New entrants	<u>2</u>
h. Total active life participants in valuation	22

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

	Service Retirees, Vested Receiving <u>Benefits</u>	Receiving Death <u>Benefits</u>	Receiving Disability <u>Benefits</u>	Vested <u>Deferred</u>	<u>Total</u>
a. Number prior valuation	11	1	0	5	17
Retired	2	0	0	(1)	1
Vested Deferred	0	0	0	0	0
Death, With Survivor	0	3	0	0	3
Death, No Survivor	0	0	0	0	0
Disabled	0	0	0	0	0
Refund of Contributions	0	0	0	(1)	(1)
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	1	1
b. Number current valuation	13	4	0	4	21

SUMMARY OF CURRENT PLAN

Article 4 Pension Fund

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

Plan Administration

The Plan is 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 Fire Department elected by the Membership, and
- c.) One retired Member of the Fire Department elected by the Membership.

Credited Service

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

Salary

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

For Tier 2 participants, the salary is capped at a rate of \$106,800 as of 2011, indexed annually at a rate of CPI-U, but not to exceed 3.00%.

Normal Retirement

Date

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

**Tier 2:** Age 55 and 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 \$1,159.27 per month.

**Tier 2:** 2.50% per year of service times the average salary for the 48 consecutive months of service within the last 60 months of service in which the total salary was the highest prior to retirement times the number of years of service, up to a maximum of 75% of average salary. The minimum monthly benefit is \$1,159.27 per month.

Form of Benefit

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

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

Early Retirement

Date	<b>Tier 1:</b> Age 60 and 10 years of Credited Service. <b>Tier 2:</b> Age 50 and 10 years of Credited Service.
Benefit	<b>Tier 1:</b> 1.50% plus 0.10% for each year of service in excess of 10 years, times salary x service (complete years). <b>Tier 2:</b> Normal Retirement Benefit, reduced 6.00% for each year before age 55, with no minimum benefit.
Form of Benefit	Same as Normal Retirement.

Disability Benefit

Eligibility	Total and permanent as determined by the Board of Trustees. Seven years of service required for non-service connected disability.
Benefit Amount	A maximum of: <ul style="list-style-type: none"><li>a.) 65% of salary attached to the rank held by Member on last day of service, and;</li><li>b.) The monthly retirement pension that the Member is entitled to receive if he or she retired immediately.</li></ul>

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

Cost-of-Living Adjustment

**Tier 1:**

*Retirees:* An annual increase equal to 3.00% per year after age 55. Those that retire prior to age 55 receive an increase of 1/12 of 3.00% for each full month since benefit commencement upon reaching age 55.

*Disabled Retirees:* An annual increase equal to 3.00% per year of the original benefit amount beginning at age 60. Those that become disabled prior to age 60 receive an increase of 3.00% of the original benefit amount for each year since benefit commencement upon reaching age 60.

**Tier 2:** An annual increase each January 1 equal to 3.00% per year or one-half of the annual unadjusted percentage increase in the consumer price index-u for the 12 months ending with the September preceding each November 1, whichever is less, of the original pension after the attainment of age 60 or first anniversary of pension start date whichever is later.

Pre-Retirement Death Benefit

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

Vesting (Termination)

Vesting Service Requirement	10 years.
Non-Vested Benefit	Refund of Member Contributions.
Vested Benefit	Either the termination benefit, payable upon reaching age 60 (55 for Tier 2), provided contributions are not withdrawn, or a refund of member contributions.
Termination Benefit	Based on the monthly salary attached to the Member's rank at separation from service and equals:  <b>Tier 1:</b> 1.50% plus 0.10% for each year of service in excess of 10 years, times salary x service (based on complete years).  <b>Tier 2:</b> 2.50% of 4-year final average salary times creditable service.

Contributions

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

SUMMARY

Valuation Date	5/1/2022	5/1/2021
Measurement Date	4/30/2022	4/30/2021
Plan Membership:		
Inactives Currently Receiving Benefits	17	12
Inactives Not Yet Receiving Benefits	4	5
Active Plan Members	<u>22</u>	<u>22</u>
Total	43	39
Covered Payroll	\$ 2,208,979	\$ 2,192,738
Net Pension Liability		
Total Pension Liability	\$ 27,386,479	\$ 24,857,359
Plan Fiduciary Net Position	<u>18,103,753</u>	<u>19,054,570</u>
Net Pension Liability	\$ 9,282,726	\$ 5,802,789
Plan Fiduciary Net Position		
As a Percentage of Total Pension Liability	66.10%	76.66%
Net Pension Liability		
As a Percentage of Covered Payroll	420.23%	264.64%
Total Pension Expense	\$ 1,255,350	\$ 826,912
Development of Single Discount Rate		
Single Discount Rate	7.00%	7.00%
Long-Term Expected Rate of Return	7.00%	7.00%
High-quality Municipal Bond Rate	3.98%	1.83%
Number of Years Future Benefit Payments		
Are Expected to be Paid	99	99

SCHEDULE OF CHANGES IN NET PENSION LIABILITY  
PLAN AND CITY REPORTING

GASB 68 Reporting Period Ending Measurement Date	04/30/2022	04/30/2021
	<u>04/30/2022</u>	<u>04/30/2021</u>
Total Pension Liability		
Service Cost	535,670	504,600
Interest	1,743,344	1,672,315
Changes of Benefit Terms	-	-
Differences Between Expected and Actual Experience	351,038	(315,244)
Changes of Assumptions	820,615	846,520
Contributions - Buy Back	54,693	-
Benefit Payments, Including Refunds of Employee Contributions	<u>(976,240)</u>	<u>(825,250)</u>
Net Change in Total Pension Liability	2,529,120	1,882,941
Total Pension Liability - Beginning	<u>24,857,359</u>	<u>22,974,418</u>
Total Pension Liability - Ending (a)	\$ 27,386,479	\$ 24,857,359
 Plan Fiduciary Net Position		
Contributions - Employer	805,975	805,975
Contributions - Employee	208,859	206,635
Contributions - Buy Back	54,693	-
Net Investment Income	(1,021,385)	4,735,501
Benefit Payments, Including Refunds of Employee Contributions	(976,240)	(825,250)
Administrative Expense	<u>(22,717)</u>	<u>(18,726)</u>
Net Change in Plan Fiduciary Net Position	(950,815)	4,904,135
Plan Fiduciary Net Position - Beginning	19,054,570	14,150,435
Adjustment to beginning of year	(2)	-
Plan Fiduciary Net Position - Ending (b)	\$ 18,103,753	\$ 19,054,570
 Net Pension Liability - Ending (a) - (b)	\$ 9,282,726	\$ 5,802,789
 Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	66.10%	76.66%
 Covered Payroll	\$ 2,208,979	\$ 2,192,738
Net Pension Liability as a Percentage of Covered Payroll	420.23%	264.64%

STATEMENT OF CHANGES IN NET PENSION LIABILITY  
CITY REPORTING

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a)-(b)
Balances at April 30, 2021	\$ 24,857,359	\$ 19,054,570	\$ 5,802,789
Adjustment to beginning of year	-	(2)	2
Changes for a Year:			
Service Cost	535,670	-	535,670
Interest	1,743,344	-	1,743,344
Differences Between Expected and Actual Experience	351,038	-	351,038
Changes of Assumptions	820,615	-	820,615
Changes of Benefit Terms	-	-	-
Contributions - Employer	-	805,975	(805,975)
Contributions - Employee	-	208,859	(208,859)
Contributions - Buy Back	54,693	54,693	-
Net Investment Income	-	(1,021,385)	1,021,385
Benefit Payments, Including Refunds of Employee Contributions	(976,240)	(976,240)	-
Administrative Expense	-	(22,717)	22,717
Net Changes	2,529,120	(950,815)	3,479,935
Balances at April 30, 2022	\$ 27,386,479	\$ 18,103,753	\$ 9,282,726

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

	Current Discount		
	1% Decrease	Rate	1% Increase
	6.00%	7.00%	8.00%
Sponsor's Net Pension Liability	\$ 13,541,604	\$ 9,282,726	\$ 5,838,549

*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, 2022

For the year ended April 30, 2022, the Sponsor will recognize a pension expense of \$1,255,350.

On April 30, 2022, 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	384,784	479,423
Changes of assumptions	1,447,868	497,125
Net difference between projected and actual earnings on pension plan investments	779,641	0
<b>Total</b>	<b>\$2,612,293</b>	<b>\$976,548</b>

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:

2023	\$506,529
2024	\$373,107
2025	(\$130,628)
2026	\$610,068
2027	\$109,290
Thereafter	\$167,379

COMPONENTS OF PENSION EXPENSE  
YEAR-END APRIL 30, 2022

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning Balance	\$ 5,802,789	\$ 4,197,464	\$ 2,802,649	
Total Pension Liability Factors:				
Service Cost	535,670	-	-	535,670
Interest	1,743,344	-	-	1,743,344
Changes in Benefit Terms	-	-	-	-
Contributions - Buy Back	54,693			54,693
Differences Between Expected and Actual Experience With Regard to Economic or Demographic Assumptions				
Current Year Amortization	-	(150,943)	(92,098)	(58,845)
Changes in Assumptions About Future Economic or Demographic Factors or Other Inputs				
Current Year Amortization	-	(99,425)	(280,161)	180,736
Benefit Payments, Including Refunds of Employee Contributions	(976,240)	-	-	-
Net Change	2,529,120	(250,368)	799,394	2,455,598
Plan Fiduciary Net Position:				
Contributions - Employer	805,975	-	-	-
Contributions - Employee	208,859	-	-	(208,859)
Contributions - Buy Back	54,693			(54,693)
Projected Net Investment Income	1,336,290	-	-	(1,336,290)
Difference Between Projected and Actual Earnings on Pension Plan Investments				
Current Year Amortization	-	(748,460)	(1,125,337)	376,877
Benefit Payments, Including Refunds of Employee Contributions	(976,240)	-	-	-
Administrative Expenses	(22,717)	-	-	22,717
Net Change	(950,815)	(748,460)	1,232,338	(1,200,248)
Adjustment to beginning of year	(2)	-	-	-
Ending Balance	\$ 9,282,726	\$ 3,198,636	\$ 4,834,381	\$ 1,255,350

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)	2022	2023	2024	2025	2026	Thereafter
2022	\$ 351,038	7	\$ 50,150	\$ 50,148	\$ 50,148	\$ 50,148	\$ 50,148	\$ 100,296
2021	\$ (315,244)	7	\$ (45,035)	\$ (45,035)	\$ (45,035)	\$ (45,035)	\$ (45,035)	\$ (45,035)
2020	\$ (276,477)	8	\$ (34,560)	\$ (34,560)	\$ (34,560)	\$ (34,560)	\$ (34,560)	\$ (34,560)
2019	\$ (26,930)	8	\$ (3,366)	\$ (3,366)	\$ (3,366)	\$ (3,366)	\$ (3,366)	\$ -
2018	\$ 293,635	7	\$ 41,948	\$ 41,948	\$ 41,948	\$ -	\$ -	\$ -
2017	\$ (475,876)	7	\$ (67,982)	\$ (67,984)	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			(58,845)	(58,849)	9,135	(32,813)	(32,813)	20,701

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)	2022	2023	2024	2025	2026	Thereafter
2022	\$ 820,615	7	\$ 117,229	\$ 117,231	\$ 117,231	\$ 117,231	\$ 117,231	\$ 234,462
2021	\$ 846,520	7	\$ 120,931	\$ 120,931	\$ 120,931	\$ 120,931	\$ 120,931	\$ 120,931
2020	\$ (795,402)	8	\$ (99,425)	\$ (99,425)	\$ (99,425)	\$ (99,425)	\$ (99,425)	\$ (99,425)
2019	\$ 260,873	8	\$ 32,609	\$ 32,609	\$ 32,609	\$ 32,609	\$ 32,609	\$ -
2017	\$ 65,743	7	\$ 9,392	\$ 9,391	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ 180,736	\$ 180,737	\$ 171,346	\$ 171,346	\$ 171,346	\$ 255,968

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)	2022	2023	2024	2025	2026	Thereafter	
2022	\$ 2,357,675	5	\$ 471,535	\$ 471,535	\$ 471,535	\$ 471,535	\$ 471,535	\$ -	
2021	\$ (3,703,478)	5	\$ (740,696)	\$ (740,696)	\$ (740,696)	\$ (740,696)	\$ -	\$ -	
2020	\$ 2,308,936	5	\$ 461,787	\$ 461,787	\$ 461,787	\$ -	\$ -	\$ -	
2019	\$ 960,075	5	\$ 192,015	\$ 192,015	\$ -	\$ -	\$ -	\$ -	
2018	\$ (38,821)	5	\$ (7,764)	\$ -	\$ -	\$ -	\$ -	\$ -	
Net Increase (Decrease) in Pension Expense			\$ 376,877	\$ 384,641	\$ 192,626	\$ (269,161)	\$ 471,535	\$ -	

SCHEDULE OF CONTRIBUTIONS

Plan Year-End	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
04/30/2022	798,508	805,975	(7,467)	2,208,979	36.49%
04/30/2021	766,428	805,975	(39,547)	2,192,738	36.76%

The following assumptions were used to determine the Actuarially Determined Contribution for the plan year ending April 30, 2022:

Calculation Timing	The Actuarially Determined Contribution is calculated using a May 1, 2020 valuation date.
Interest Rate	7.25%
Mortality Rate	<p><b>Active Lives:</b>                      PubS-2010 Employee mortality, projected 5 years past the valuation date with Scale MP-2019. 20% of active deaths are assumed to be in the line of duty.</p> <p><b>Inactive Lives:</b>                      PubS-2010 Healthy Retiree mortality, projected 5 years past the valuation date with Scale MP-2019.</p> <p><b>Beneficiaries:</b>                      PubS-2010 Survivor mortality, projected 5 years past the valuation date with Scale MP-2019.</p> <p><b>Disabled Lives:</b>                      PubS-2010 Disabled mortality, projected 5 years past the valuation date with Scale MP-2019.</p>
Assumptions	All other assumptions and methods used for determining the Actuarially Determined Contribution can be found in the May 1, 2020 Actuarial Valuation Report for the City of Geneva Firefighters' Pension Fund prepared by Foster & Foster Actuaries and Consultants.

SCHEDULE OF INVESTMENT RETURNS

For the year ended April 30, 2022, the annual money-weighted return on Pension Plan investments, net of pension plan investment expense, was -5.19 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
04/30/2022	-5.19%
04/30/2021	33.04%

ASSUMPTIONS – GASB PENSION LIABILITY AND PENSION EXPENSE

The GASB 67/GASB 68 Pension Liability as of April 30, 2022 and GASB 68 Pension Expense were determined as follows:

Valuation Date	May 1, 2022
Measurement Date	April 30, 2022
GASB 68 Expense Measurement Period	May 1, 2021 - April 30, 2022
Reporting Period	May 1, 2021 - April 30, 2022
Discount Rate	7.00%
Inflation	2.50%
Salary Increases	Service-based rates
Other Assumptions	A summary of complete assumptions can be found in the accompanying Actuarial Valuation as of May 1, 2022 for the City of Geneva Firefighters' Pension Fund prepared by Foster & Foster Actuaries and Consultants.

The GASB 67/GASB 68 Total Pension Liability and GASB 68 Pension Expense reflect the following assumption changes:

- Updated mortality, retirement, and termination rate tables.
- Updated assumed salary increase rates.

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, 2022, are unknown.

*Concentrations*

It is unknown if the Plan held 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 7.00 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 (7.00 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 7.00 percent. The municipal bond rate is 3.98 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 7.00 percent.

SUMMARY OF CURRENT PLAN

Article 4 Pension Fund

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

Plan Administration

The Plan is 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 Fire Department elected by the Membership.
- c.) One retired member of the Fire Department elected by the Membership.

Benefits Provided

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

A summary of the benefit provisions can be found in the accompanying Actuarial Valuation as of May 1, 2022 for the City of Geneva Firefighters' Pension Fund prepared by Foster & Foster Actuaries and Consultants.