CITY OF EVANSTON
FIREFIGHTERS' PENSION FUND

ACTUARIAL VALUATION
AS OF JANUARY 1, 2024

CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING DECEMBER 31, 2025

FOSTER & FOSTER
ACTUARIES AND CONSULTANTS

August 26, 2024

Board of Trustees
City of Evanston Firefighters' Pension Fund

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

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Evanston Firefighters' Pension Fund. The 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. Use of the results for other purposes may not be applicable and could 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 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 valuation, 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 valuation, we have relied on personnel, plan design, and asset information supplied by the Board, financial reports prepared by the custodian bank and the actuarial assumptions and methods described in the Actuarial Assumptions section of this report. While we cannot verify the accuracy of all this information, the supplied information was reviewed for consistency and reasonableness. As a result of this review, we have no reason to doubt the substantial accuracy of the information and believe that it has produced appropriate results. This information, along with any adjustments or modifications, is summarized in various sections of this report.

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

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

Respectfully submitted,

Foster & Foster, Inc.

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

By: Heidi Andorfer
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 Evanston Firefighters' Pension Fund, performed as of January 1, 2024, has been completed and the results are presented in this report. The contribution amounts set forth herein are applicable to the plan/fiscal year ended December 31, 2025.

The contribution requirements, compared with those set forth in the January 1, 2023 actuarial report, are as follows:

Valuation Date	1/1/2024	1/1/2023
Applicable to Fiscal Year Ending	12/31/2025	12/31/2024
Total Recommended Contribution	$15,103,527	$13,433,170
% of Projected Annual Payroll	110.4%	117.8%
Member Contributions (Est.)	(1,292,609)	(1,077,987)
% of Projected Annual Payroll	(9.5%)	(9.5%)
City Recommended Contribution	13,810,918	12,355,183
% of Projected Annual Payroll	100.9%	108.3%

As you can see, the Total Recommended Contribution shows an increase when compared to the results determined in the January 1, 2023 actuarial valuation report. The increase is attributable to unfavorable plan experience, an increase in active membership and programming updates.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. The primary source of unfavorable experience was an average salary increase of 14.44% which exceeded the 4.28% assumption. This loss was offset in part by a gain associated with an investment return of 7.32% (Actuarial Asset Basis) which exceeded the 6.50% assumption.

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

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

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	1/1/2024	1/1/2023
A. Participant Data		
Number Included		
Actives	115	105
Service Retirees	81	83
Beneficiaries	41	41
Disability Retirees	24	25
Terminated Vested	7	6
Total	268	260
Total Annual Payroll	$13,671,166	$11,401,235
Payroll Under Assumed Ret. Age	13,671,166	11,401,235
Annual Rate of Payments to:		
Service Retirees	7,750,570	7,379,589
Beneficiaries	1,953,576	1,795,907
Disability Retirees	1,795,286	1,793,229
Terminated Vested	0	0
B. Assets		
Actuarial Value	118,383,956	108,485,060
Market Value	114,786,199	99,046,036
C. Liabilities		
Present Value of Benefits		
Actives		
Retirement Benefits	95,729,007	79,958,316
Disability Benefits	10,283,648	8,834,069
Death Benefits	1,150,795	986,339
Vested Benefits	3,474,077	3,013,954
Service Retirees	109,612,090	105,970,168
Beneficiaries	17,162,386	16,739,102
Disability Retirees	26,738,966	26,860,292
Terminated Vested	141,840	74,932
Total	264,292,809	242,437,172

C. Liabilities - (Continued)

	1/1/2024	1/1/2023
Present Value of Future Salaries	142,436,501	119,595,161
Present Value of Future Member Contributions	13,467,371	11,307,722
Normal Cost (Retirement)	2,841,772	2,400,350
Normal Cost (Disability)	567,065	476,104
Normal Cost (Death)	77,882	65,735
Normal Cost (Vesting)	203,720	176,766
Total Normal Cost	3,690,439	3,118,955
Present Value of Future Normal Costs	34,185,019	29,418,768
Accrued Liability (Retirement)	69,268,432	57,124,132
Accrued Liability (Disability)	4,843,774	4,183,533
Accrued Liability (Death)	337,958	294,301
Accrued Liability (Vesting)	2,002,344	1,771,944
Accrued Liability (Inactives)	153,655,282	149,644,494
Total Actuarial Accrued Liability	230,107,790	213,018,404
Unfunded Actuarial Accrued Liability (UAAL)	111,723,834	104,533,344
Funded Ratio (AVA / AL)	51.4%	50.9%

	1/1/2024	1/1/2023
D. Actuarial Present Value of Accrued Benefits		
Vested Accrued Benefits		
Inactives	153,655,282	149,644,494
Actives	29,092,157	22,265,260
Member Contributions	12,077,232	11,104,606
Total	194,824,671	183,014,360
Non-vested Accrued Benefits	3,060,692	2,119,798
Total Present Value Accrued Benefits	197,885,363	185,134,158
Funded Ratio (MVA / PVAB)	58.0%	53.5%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:		
Plan Amendments	0	
Assumption Changes	0	
Plan Experience	12,355,255	
Benefits Paid	(11,271,448)	
Interest	11,667,398	
Other	0	
Total	12,751,205	

Valuation Date	1/1/2024	1/1/2023
Applicable to Fiscal Year Ending	12/31/2025	12/31/2024
E. Pension Cost		
Normal Cost [1]	$3,930,318	$3,321,687
% of Total Annual Payroll [1]	28.7	29.1
Administrative Expenses [1]	123,015	91,481
% of Total Annual Payroll [1]	0.9	0.8
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 17 years (as of 1/1/2024) [1]	11,050,194	10,020,002
% of Total Annual Payroll [1]	80.8	87.9
Total Recommended Contribution	15,103,527	13,433,170
% of Total Annual Payroll [1]	110.4	117.8
Expected Member Contributions [1]	(1,292,609)	(1,077,987)
% of Total Annual Payroll [1]	(9.5)	(9.5)
Expected City Contribution	13,810,918	12,355,183
% of Total Annual Payroll [1]	100.9	108.3
F. Past Contributions		
Plan Years Ending:	12/31/2023	
Total Recommended Contribution	11,741,567	
City	10,491,338	
Actual Contributions Made:		
Members (excluding buyback)	1,250,229	
City	12,020,942	
Total	13,271,171	
G. Net Actuarial (Gain)/Loss	10,545,125	

[1] Contributions developed as of 1/1/2024 displayed above have been adjusted to account for assumed interest.

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

Year	Projected Unfunded Accrued Liability
2024	111,723,834
2025	107,935,689
2026	103,901,315
2030	84,965,410
2034	60,605,007
2037	37,855,738
2041	0

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

		Actual	Assumed
Year Ended	12/31/2023	14.44%	4.28%
Year Ended	12/31/2022	8.20%	4.35%
Year Ended	12/31/2021	2.61%	4.24%
Year Ended	12/31/2020	3.44%	4.32%
Year Ended	12/31/2019	2.57%	4.21%

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

		Actual MVA	Actual AVA	Assumed
Year Ended	12/31/2023	13.86%	7.32%	6.50%
Year Ended	12/31/2022	-13.41%	5.35%	6.25%
Year Ended	12/31/2021	13.36%	10.60%	6.25%
Year Ended	12/31/2020	12.64%	8.94%	6.25%
Year Ended	12/31/2019	19.23%	5.91%	6.25%

DEVELOPMENT OF JANUARY 1, 2024 AMORTIZATION PAYMENT

(1)	Unfunded Actuarial Accrued Liability as of January 1, 2023	$104,533,344
(2)	Sponsor Normal Cost developed as of January 1, 2023	2,040,968
(3)	Expected administrative expenses for the year ended December 31, 2023	85,898
(4)	Expected interest on (1), (2) and (3)	6,930,122
(5)	Sponsor contributions to the System during the year ended December 31, 2023	12,020,942
(6)	Expected interest on (5)	390,681
(7)	Expected Unfunded Actuarial Accrued Liability as of December 31, 2023, (1)+(2)+(3)+(4)-(5)-(6)	101,178,709
(8)	Change to UAAL due to Benefits/Assumption Change	0
(9)	Change to UAAL due to Actuarial (Gain)/Loss	10,545,125
(10)	Unfunded Accrued Liability as of January 1, 2024	111,723,834
(11)	UAAL Subject to Amortization (100% AAL less Actuarial Assets)	111,723,834

Date Established	Years Remaining	1/1/2024 Amount	Amortization Amount
1/1/2024	17	111,723,834	10,375,769

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1)	Unfunded Actuarial Accrued Liability (UAAL) as of January 1, 2023	$104,533,344
(2)	Expected UAAL as of January 1, 2024	101,178,709
(3)	Summary of Actuarial (Gain)/Loss, by component:	
	Investment Return (Actuarial Asset Basis)	(901,914)
	Salary Increases	6,086,989
	Active Decrements	(533,618)
	Inactive Mortality	1,236,553
	Programming Updates	4,715,537
	Other	(58,422)
	Change in UAAL due to (Gain)/Loss	10,545,125
	Change to UAAL due to Benefits/Assumption Change	0
(4)	Actual UAAL as of January 1, 2024	$111,723,834

RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1)	Contribution Determined as of January 1, 2023	$ 12,355,183
(2)	Summary of Contribution Impact by component:	
	Change in Normal Cost	608,631
	Change in Assumed Administrative Expense	31,534
	Investment Return (Actuarial Asset Basis)	(89,205)
	Salary Increases	602,042
	New Entrants	14,733
	Active Decrements	(52,778)
	Inactive Mortality	122,303
	Contributions (More) or Less than Recommended	(156,204)
	Increase in Amortization Payment Due to Payroll Growth Assumption	-
	Change in Expected Member Contributions	(214,622)
	Benefits/Assumption Change	-
	Programming Updates	466,396
	Other	122,905
	Total Change in Contribution	1,455,735
(3)	Contribution Determined as of January 1, 2024	$13,810,918

STATUTORY MINIMUM REQUIRED CONTRIBUTION

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

Valuation Date	1/1/2024	1/1/2023
Applicable to Fiscal Year Ending	12/31/2025	12/31/2024
Actuarial Accrued Liability (PUC)	223,361,146	206,409,763
Actuarial Value of Assets	118,383,956	108,485,060
Unfunded Actuarial Accrued Liability (UAAL)	104,977,190	97,924,703
UAAL Subject to Amortization	82,641,075	77,283,727
Normal Cost [1]	$4,366,207	$3,748,856
% of Total Annual Payroll [1]	31.9	32.9
Administrative Expenses [1]	123,015	91,481
% of Total Annual Payroll [1]	0.9	0.8
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 17 years (as of 1/1/2024) [1]	6,791,458	6,095,466
% of Total Annual Payroll [1]	49.7	53.4
Total Required Contribution	11,280,680	9,935,803
% of Total Annual Payroll [1]	82.5	87.1
Expected Member Contributions [1]	(1,292,609)	(1,077,987)
% of Total Annual Payroll [1]	(9.5)	(9.5)
Expected City Contribution	9,988,071	8,857,816
% of Total Annual Payroll [1]	73.0	77.6

Assumptions and Methods:

Actuarial Cost Method	Projected Unit Credit
Amortization Method	90% Funding by 2040
Payroll Growth Assumption	2.75%

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

[1] Contributions developed as of 1/1/2024 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
2024	213,690	11,512,469	11,726,159
2025	580,424	11,471,471	12,051,895
2026	984,324	11,563,784	12,548,108
2027	1,400,778	11,667,283	13,068,061
2028	1,845,995	11,739,032	13,585,027
2029	2,284,593	11,818,875	14,103,468
2030	2,748,664	11,860,071	14,608,735
2031	3,211,449	11,903,653	15,115,102
2032	3,722,016	11,904,288	15,626,304
2033	4,249,492	11,908,922	16,158,414
2034	4,873,203	11,925,436	16,798,639
2035	5,513,926	11,850,545	17,364,471
2036	6,175,488	11,745,574	17,921,062
2037	6,860,498	11,608,798	18,469,296
2038	7,566,951	11,438,615	19,005,566
2039	8,253,528	11,276,294	19,529,822
2040	8,930,394	11,039,487	19,969,881
2041	9,590,654	10,768,503	20,359,157
2042	10,259,950	10,463,749	20,723,699
2043	10,939,428	10,126,649	21,066,077
2044	11,621,925	9,760,103	21,382,028
2045	12,312,979	9,366,192	21,679,171
2046	12,962,309	8,948,212	21,910,521
2047	13,557,426	8,509,683	22,067,109
2048	14,172,121	8,054,361	22,226,482
2049	14,820,094	7,586,176	22,406,270
2050	15,515,740	7,109,265	22,625,005
2051	16,128,373	6,627,920	22,756,293
2052	16,693,423	6,146,486	22,839,909
2053	17,206,998	5,669,285	22,876,283
2054	17,735,875	5,200,336	22,936,211
2055	18,187,875	4,743,245	22,931,120
2056	18,597,931	4,301,362	22,899,293
2057	18,932,825	3,877,426	22,810,251
2058	19,194,131	3,473,759	22,667,890
2059	19,400,579	3,092,338	22,492,917
2060	19,546,364	2,734,683	22,281,047
2061	19,631,065	2,402,102	22,033,167
2062	19,653,973	2,095,569	21,749,542
2063	19,614,715	1,815,519	21,430,234

ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate	6.50% per year compounded annually, net of investment related expenses.
Mortality Rate	***Active Lives:*** 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. ***Inactive Lives:*** 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). ***Beneficiaries:*** 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). ***Disabled Lives:*** 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). The mortality assumptions sufficiently accommodate anticipated future mortality improvements.
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: 1.25% per year after the later of attainment of age 60 or first anniversary of retirement.
Salary Increases	Graded schedule based on age.

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

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 Dollar method over a period ending in 2040. The initial amortization amount is 100% of the Accrued Liability less the Actuarial Value of Assets.
Payroll Growth	None.
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.

Accrued Actuarial Liability is determined according to the plan's actuarial cost method. This amount represents the portion of the anticipated future benefits allocated to years prior to the valuation date.

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

Market Value of Assets is the fair market value of plan assets as of the valuation date. This amount may be adjusted to produce an Actuarial Value of Assets for plan funding purposes.

Actuarial Value of Assets is the asset value used in the valuation to determine contribution requirements. It represents the plan's Market Value of Assets, with adjustments according to the Actuarial Asset Method. These adjustments produce a "smoothed" value that is likely to be less volatile from year to year than the Market Value of Assets.

Unfunded Accrued Liability is the excess of the Accrued Actuarial Liability over the Actuarial Value of Assets.

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

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

(a) The normal cost accrual rate equals:
- (i) the present value of future benefits for the participant, determined as of the participant's entry age, divided by
- (ii) the present value of the compensation expected to be paid to the participant for each year of the participant's anticipated future service, determined as of the participant's entry age.

(b) In calculating the present value of future compensation, the salary scale is applied both retrospectively and prospectively to estimate compensation in years prior to and subsequent to the valuation year based on the compensation used for the valuation.

(c) The accrued liability is the sum of the individual accrued liabilities for all participants and beneficiaries. A participant's accrued liability equals the present value, at the participant's attained age, of future benefits less the present value at the participant's attained age of the individual normal costs payable in the future. A beneficiary's accrued liability equals the present value, at the beneficiary's attained age, of future benefits.

(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 increased from 62.9% on January 1, 2021 to 75.2% on January 1, 2024, indicating that the plan has experienced a significant growth in active population.

- 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 66.8%. 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 46.4% on January 1, 2021 to 51.4% on January 1, 2024, due mainly to plan experience.

- 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, increased from -0.1% on January 1, 2021 to 1.6% on January 1, 2024. The current Net Cash Flow Ratio of 1.6% indicates that contributions are generally covering the plan's benefit payments and administrative expenses.

Low Default-Risk Obligation Measure

ASOP No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions, was revised as of December 2021 to include a "low-default-risk obligation measure" (LDROM). This liability measure is consistent with the determination of the actuarial accrued liability shown on page 8 in terms of member data, plan provisions, and assumptions/methods, including the use of the Entry Age Normal Cost Method, except that the interest rate is tied to low-default-risk fixed income securities. The S&P Municipal Bond 20 Year High Grade Rate Index (daily rate closest to, but not later than, the measurement date) was selected to represent a current market rate of low risk but longer-term investments that could be included in a low-risk asset portfolio. The interest rate used in this valuation was 4.00%, resulting in an LDROM of $326,649,563. The LDROM should not be considered the "correct" liability measurement; it simply shows a possible outcome if the Board elected to hold a very low risk asset portfolio. Given that plan benefits are paid over time through the combination of contributions and investment returns, prudent investments selected by the Board help to balance asset accumulation through these two sources.

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

	1/1/2024	1/1/2023	1/1/2022	1/1/2021
Support Ratio				
Total Actives	115	105	104	95
Total Inactives	153	155	153	151
Actives / Inactives	75.2%	67.7%	68.0%	62.9%
Asset Volatility Ratio				
Market Value of Assets (MVA)	114,786,199	99,046,036	114,592,514	101,034,113
Total Annual Payroll	13,671,166	11,401,235	10,532,785	9,953,574
MVA / Total Annual Payroll	839.6%	868.7%	1,088.0%	1,015.1%
Accrued Liability (AL) Ratio				
Inactive Accrued Liability	153,655,282	149,644,494	152,778,948	146,768,350
Total Accrued Liability	230,107,790	213,018,404	212,228,446	200,806,248
Inactive AL / Total AL	66.8%	70.2%	72.0%	73.1%
Funded Ratio				
Actuarial Value of Assets (AVA)	118,383,956	108,485,060	103,165,026	93,223,249
Total Accrued Liability	230,107,790	213,018,404	212,228,446	200,806,248
AVA / Total Accrued Liability	51.4%	50.9%	48.6%	46.4%
Net Cash Flow Ratio				
Net Cash Flow [1]	1,884,216	(194,703)	55,823	(117,315)
Market Value of Assets (MVA)	114,786,199	99,046,036	114,592,514	101,034,113
Ratio	1.6%	-0.2%	0.0%	-0.1%

[1] Determined as total contributions minus benefit payments and administrative expenses.

STATEMENT OF FIDUCIARY NET POSITION
December 31, 2023

ASSETS	MARKET VALUE
Cash and Cash Equivalents:	
Checking Account	73,999
Money Market	15,034,451
Total Cash and Equivalents	15,108,450
Receivables:	
From Others	3,123
From City	274,114
Prepaids	9,245
Accrued Past Due Interest	55,116
Total Receivable	341,598
Investments:	
Pooled/Common/Commingled Funds	99,355,205
Total Investments	99,355,205
Total Assets	114,805,253
LIABILITIES	
Liabilities:	
Payable:	
Expenses	19,054
Total Liabilities	19,054
Net Assets:	
Active and Retired Members' Equity	114,786,199
NET POSITION RESTRICTED FOR PENSIONS	114,786,199
TOTAL LIABILITIES AND NET ASSETS	114,805,253

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED December 31, 2023
Market Value Basis

<u>ADDITIONS</u>		
Contributions:		
Member	1,250,229	
City	12,020,942	
Total Contributions		13,271,171
Investment Income:		
Net Increase in Fair Value of Investments		13,349,316
Interest & Dividends		660,345
Less Investment Expense [1]		(153,714)
Net Investment Income		13,855,947
Total Additions		27,127,118
<u>DEDUCTIONS</u>		
Distributions to Members:		
Benefit Payments	11,270,787	
Refund of Contributions/Transfers	661	
Total Distributions		11,271,448
Administrative Expenses		115,507
Total Deductions		11,386,955
Net Increase in Net Position		15,740,163
NET POSITION RESTRICTED FOR PENSIONS		
Beginning of the Year		99,046,036
End of the Year		114,786,199

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

ACTUARIAL ASSET VALUATION
December 31, 2023

Development of Actuarial Value of Assets

Market Value of Assets, 12/31/2023	114,786,199
(Gains)/Losses Not Yet Recognized	3,597,757
Actuarial Value of Assets, 12/31/2023	118,383,956
12/31/2023 Limited Actuarial Assets:	118,383,956

Development of Investment Gain/Loss

Market Value of Assets, 12/31/2022	99,046,036
Contributions Less Benefit Payments & Administrative Expenses	1,884,216
Expected Investment Earnings[1]	6,499,229
Actual Net Investment Earnings	13,855,947
2023 Actuarial Investment Gain/(Loss)	7,356,718

[1] Expected Investment Earnings = 6.50% x (99,046,036 + 0.5 x 1,884,216)

Gains/(Losses) Not Yet Recognized

Plan Year Ending	Gain/(Loss)	Amounts Not Yet Recognized by Valuation Year 2023	2024	2025	2026	2027
12/31/2020	5,735,113	1,147,023	0	0	0	0
12/31/2021	7,186,201	2,874,480	1,437,240	0	0	0
12/31/2022	(22,507,723)	(13,504,634)	(9,003,089)	(4,501,545)	0	0
12/31/2023	7,356,718	5,885,374	4,414,031	2,942,687	1,471,344	0
Total		(3,597,757)	(3,151,818)	(1,558,858)	1,471,344	0

Development of Asset Returns

(A) 12/31/2022 Actuarial Assets:	108,485,060
(I) Net Investment Income:	
1. Interest and Dividends	683,320
2. Realized Gains (Losses)	13,326,341
3. Change in Actuarial Value	(5,841,267)
4. Investment Expenses	(153,714)
Total	8,014,680
(B) 12/31/2023 Actuarial Assets:	118,383,956
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	7.32%
Market Value of Assets Rate of Return:	13.86%
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	901,914

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
December 31, 2023
Actuarial Asset Basis

INCOME		
Contributions:		
Member	1,250,229	
City	12,020,942	
Total Contributions		13,271,171
Earnings from Investments		
Interest & Dividends	660,345	
Miscellaneous Income	22,975	
Net Realized Gain (Loss)	13,326,341	
Change in Actuarial Value	(5,841,267)	
Total Earnings and Investment Gains		8,168,394
EXPENSES		
Administrative Expenses:		
Investment Related[1]	153,714	
Other	115,507	
Total Administrative Expenses		269,221
Distributions to Members:		
Benefit Payments	11,270,787	
Refund of Contributions/Transfers	661	
Total Distributions		11,271,448
Change in Net Assets for the Year		9,898,896
Net Assets Beginning of the Year		108,485,060
Net Assets End of the Year[2]		118,383,956

[1] Investment Related expenses include investment advisory, custodial and performance monitoring fees.
[2] Net Assets may be limited for actuarial consideration.

STATISTICAL DATA

	1/1/2024	1/1/2023	1/1/2022	1/1/2021
Actives - Tier 1				
Number	55	55	56	59
Average Current Age	47.5	47.0	46.2	45.5
Average Age at Employment	28.1	28.1	28.3	28.4
Average Past Service	19.4	18.9	17.9	17.1
Average Annual Salary	$139,285	$122,534	$114,583	$112,882
Actives - Tier 2				
Number	60	50	48	36
Average Current Age	33.3	33.9	33.1	33.7
Average Age at Employment	27.3	27.4	27.5	27.3
Average Past Service	6.0	6.5	5.6	6.4
Average Annual Salary	$100,174	$93,237	$85,753	$91,487
Service Retirees				
Number	81	83	83	87
Average Current Age	70.1	69.9	69.0	69.1
Average Annual Benefit	$95,686	$88,911	$86,939	$82,748
Beneficiaries				
Number	41	41	40	39
Average Current Age	64.0	59.7	58.7	60.0
Average Annual Benefit	$47,648	$43,803	$42,285	$42,784
Disability Retirees				
Number	24	25	25	23
Average Current Age	63.1	60.8	59.8	60.6
Average Annual Benefit	$74,804	$71,729	$70,693	$70,695
Terminated Vested				
Number	7	6	5	2
Average Current Age	34.0	32.0	31.8	38.8
Average Annual Benefit [1]	N/A	N/A	N/A	N/A

[1] 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	3	0	0	0	0	0	0	0	0	0	0	3
25 - 29	5	1	6	1	2	1	0	0	0	0	0	16
30 - 34	4	2	3	1	2	4	1	0	0	0	0	17
35 - 39	0	0	2	0	0	5	8	0	0	0	0	15
40 - 44	0	0	0	1	0	2	9	16	1	0	0	29
45 - 49	0	0	0	0	0	0	1	6	6	0	0	13
50 - 54	0	0	0	0	0	0	2	2	9	1	0	14
55 - 59	0	0	0	0	0	0	0	2	3	1	0	6
60 - 64	0	0	0	0	0	0	0	0	0	0	2	2
65+	0	0	0	0	0	0	0	0	0	0	0	0
Total	12	3	11	3	4	12	21	26	19	2	2	115

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 1/1/2023	105
b. Terminations	
i. Vested (partial or full) with deferred benefits	(2)
ii. Non-vested or full lump sum distribution received	0
iii. Transferred service to other fund	0
c. Deaths	
i. Beneficiary receiving benefits	0
ii. No future benefits payable	0
d. Disabled	0
e. Retired	(1)
f. Continuing participants	102
g. New entrants	13
h. Total active life participants in valuation	115

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

	Service Retirees, Vested Receiving Benefits	Receiving Death Benefits	Receiving Disability Benefits	Vested Deferred	Total
a. Number prior valuation	83	41	25	6	155
Retired	1	0	0	0	1
Vested Deferred	0	0	(1)	3	2
Death, With Survivor	(3)	3	0	0	0
Death, No Survivor	0	(1)	0	0	(1)
Disabled	0	0	0	0	0
Refund of Contributions	0	0	0	(1)	(1)
Rehires	0	0	0	(1)	(1)
Expired Annuities	0	(2)	0	0	(2)
Data Corrections	0	0	0	0	0
Hired/Termed in Same Year	0	0	0	0	0
b. Number current valuation	81	41	24	7	153

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	**Tier 1**: Age 60 and 10 years of Credited Service. **Tier 2:** Age 50 and 10 years of Credited Service.
Benefit	**Tier 1**: 1.50% plus 0.10% for each year of service in excess of 10 years, times salary x service (complete years). **Tier 2**: 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: a.) 65% of salary attached to the rank held by Member on last day of service, and; b.) The monthly retirement pension that the Member is entitled to receive if he or she retired immediately. For non-service connected disabilities, a benefit of 50% of salary attached to rank held by Member on last day of service.

Cost-of-Living Adjustment

Tier 1:

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

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

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

Pre-Retirement Death Benefit

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

Vesting (Termination)

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