

CITY OF EVANSTON
POLICE 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 Police Pension Fund

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

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the City of Evanston Police 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 3, Illinois Pension Code, as well as applicable federal laws and regulations. In our opinion, the assumptions used in this valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuation, we did not perform an analysis of the potential range of such future measurements.

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.

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.

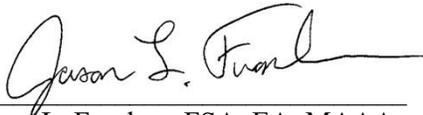
The undersigned are familiar with the immediate and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the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

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

Respectfully submitted,

Foster & Foster, Inc.

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

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

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Enclosures

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SUMMARY OF REPORT

The regular annual actuarial valuation of the City of Evanston Police 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	<u>12/31/2025</u>	<u>12/31/2024</u>
Total Recommended Contribution	\$17,477,635	\$14,620,908
% of Projected Annual Payroll	102.3%	103.1%
Member Contributions (Est.)	(1,692,209)	(1,405,907)
% of Projected Annual Payroll	(9.9%)	(9.9%)
City Recommended Contribution	15,785,426	13,215,001
% of Projected Annual Payroll	92.4%	93.2%

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 and programming updates.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. Sources of unfavorable experience included an average salary increase of 19.97% which exceeded the 4.02% assumption and more retirements than expected. These losses were offset in part by a gain associated with an investment return of 8.36% (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

	<u>1/1/2024</u>	<u>1/1/2023</u>
A. Participant Data		
Number Included		
Actives	136	130
Service Retirees	147	147
Beneficiaries	38	33
Disability Retirees	18	17
Terminated Vested	<u>24</u>	<u>22</u>
Total	363	349
Total Annual Payroll	\$17,075,768	\$14,186,746
Payroll Under Assumed Ret. Age	17,075,768	14,186,746
Annual Rate of Payments to:		
Service Retirees	12,995,661	12,195,459
Beneficiaries	2,074,646	1,661,694
Disability Retirees	974,907	847,713
Terminated Vested	295,131	215,697
B. Assets		
Actuarial Value	178,489,755	165,419,891
Market Value	176,258,820	150,950,058
C. Liabilities		
Present Value of Benefits		
Actives		
Retirement Benefits	115,880,384	99,077,399
Disability Benefits	8,020,408	6,805,582
Death Benefits	953,860	800,167
Vested Benefits	6,520,834	5,460,570
Service Retirees	177,045,426	167,383,223
Beneficiaries	16,287,824	13,531,666
Disability Retirees	13,440,124	11,202,762
Terminated Vested	<u>4,075,699</u>	<u>1,932,245</u>
Total	342,224,559	306,193,614

C. Liabilities - (Continued)	<u>1/1/2024</u>	<u>1/1/2023</u>
Present Value of Future Salaries	148,893,464	121,998,065
Present Value of Future Member Contributions	14,755,342	12,090,008
Normal Cost (Retirement)	3,053,538	2,639,236
Normal Cost (Disability)	537,739	445,649
Normal Cost (Death)	56,669	45,953
Normal Cost (Vesting)	<u>394,099</u>	<u>322,618</u>
Total Normal Cost	4,042,045	3,453,456
Present Value of Future Normal Costs	31,777,926	27,108,958
Accrued Liability (Retirement)	91,415,271	77,874,450
Accrued Liability (Disability)	3,544,637	3,131,554
Accrued Liability (Death)	421,491	383,121
Accrued Liability (Vesting)	4,216,161	3,645,635
Accrued Liability (Inactives)	<u>210,849,073</u>	<u>194,049,896</u>
Total Actuarial Accrued Liability	310,446,633	279,084,656
Unfunded Actuarial Accrued Liability (UAAL)	131,956,878	113,664,765
Funded Ratio (AVA / AL)	57.5%	59.3%

	<u>1/1/2024</u>	<u>1/1/2023</u>
D. Actuarial Present Value of Accrued Benefits		
Vested Accrued Benefits		
Inactives	210,849,073	194,049,896
Actives	35,833,125	26,609,160
Member Contributions	<u>15,644,993</u>	<u>15,398,289</u>
Total	262,327,191	236,057,345
Non-vested Accrued Benefits	<u>5,808,038</u>	<u>5,751,505</u>
Total Present Value Accrued Benefits	268,135,229	241,808,850
Funded Ratio (MVA / PVAB)	65.7%	62.4%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:		
Plan Amendments	0	
Assumption Changes	0	
Plan Experience	27,325,293	
Benefits Paid	(16,190,304)	
Interest	15,191,390	
Other	<u>0</u>	
Total	26,326,379	

Valuation Date	1/1/2024	1/1/2023
Applicable to Fiscal Year Ending	<u>12/31/2025</u>	<u>12/31/2024</u>

E. Pension Cost

Normal Cost ¹	\$4,304,778	\$3,677,931
% of Total Annual Payroll ¹	25.2	25.9
Administrative Expenses ¹	121,486	47,685
% of Total Annual Payroll ¹	0.7	0.3
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 17 years (as of 1/1/2024) ¹	13,051,371	10,895,292
% of Total Annual Payroll ¹	76.4	76.9
Total Recommended Contribution	17,477,635	14,620,908
% of Total Annual Payroll ¹	102.3	103.1
Expected Member Contributions ¹	(1,692,209)	(1,405,907)
% of Total Annual Payroll ¹	(9.9)	(9.9)
Expected City Contribution	15,785,426	13,215,001
% of Total Annual Payroll ¹	92.4	93.2

F. Past Contributions

Plan Years Ending:	<u>12/31/2023</u>
Total Recommended Contribution	13,259,529
City	11,548,482
Actual Contributions Made:	
Members (excluding buyback)	1,711,047
City	<u>13,556,390</u>
Total	15,267,437

G. Net Actuarial (Gain)/Loss 22,674,006

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:

<u>Year</u>	<u>Projected Unfunded Accrued Liability</u>
2024	131,956,878
2025	127,482,705
2026	122,717,710
2030	100,352,536
2034	71,580,491
2037	44,711,356
2041	0

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	12/31/2023	19.97%	4.02%
Year Ended	12/31/2022	4.43%	3.88%
Year Ended	12/31/2021	4.09%	4.19%
Year Ended	12/31/2020	3.87%	4.30%
Year Ended	12/31/2019	2.39%	4.33%

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

		<u>Actual MVA</u>	<u>Actual AVA</u>	<u>Assumed</u>
Year Ended	12/31/2023	17.29%	8.36%	6.50%
Year Ended	12/31/2022	-15.53%	6.06%	6.25%
Year Ended	12/31/2021	16.79%	12.38%	6.25%
Year Ended	12/31/2020	12.53%	10.40%	6.25%
Year Ended	12/31/2019	21.49%	7.44%	6.25%

DEVELOPMENT OF JANUARY 1, 2024 AMORTIZATION PAYMENT

(1)	Unfunded Actuarial Accrued Liability as of January 1, 2023	\$113,664,765
(2)	Sponsor Normal Cost developed as of January 1, 2023	2,047,549
(3)	Expected administrative expenses for the year ended December 31, 2023	44,775
(4)	Expected interest on (1), (2) and (3)	7,522,756
(5)	Sponsor contributions to the System during the year ended December 31, 2023	13,556,390
(6)	Expected interest on (5)	440,583
(7)	Expected Unfunded Actuarial Accrued Liability as of December 31, 2023, (1)+(2)+(3)+(4)-(5)-(6)	109,282,872
(8)	Change to UAAL due to Benefits/Assumption Change	0
(9)	Change to UAAL due to Actuarial (Gain)/Loss	22,674,006
(10)	Unfunded Accrued Liability as of January 1, 2024	131,956,878
(11)	UAAL Subject to Amortization (100% AAL less Actuarial Assets)	131,956,878

<u>Date Established</u>	<u>Years Remaining</u>	<u>1/1/2024 Amount</u>	<u>Amortization Amount</u>
1/1/2024	17	131,956,878	12,254,808

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of January 1, 2023	\$113,664,765
(2) Expected UAAL as of January 1, 2024	109,282,872
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	(3,067,937)
Salary Increases	11,724,611
Active Decrements	1,956,119
Inactive Mortality	3,405,623
Programming Updates	7,707,917
Other	<u>947,673</u>
Change in UAAL due to (Gain)/Loss	22,674,006
Change to UAAL due to Benefits/Assumption Change	<u>0</u>
(4) Actual UAAL as of January 1, 2024	\$131,956,878

RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1) Contribution Determined as of January 1, 2023	\$ 13,215,001
(2) Summary of Contribution Impact by component:	
Change in Normal Cost	626,847
Change in Assumed Administrative Expense	73,801
Investment Return (Actuarial Asset Basis)	(303,438)
Salary Increases	1,159,638
New Entrants	12,880
Active Decrements	193,473
Inactive Mortality	336,838
Contributions (More) or Less than Recommended	(205,049)
Increase in Amortization Payment Due to Payroll Growth Assumption	-
Change in Expected Member Contributions	(286,302)
Benefits/Assumption Change	-
Programming Updates	762,362
Other	199,375
Total Change in Contribution	2,570,425
(3) Contribution Determined as of January 1, 2024	\$15,785,426

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	<u>12/31/2025</u>	<u>12/31/2024</u>
Actuarial Accrued Liability (PUC)	298,004,334	268,361,259
Actuarial Value of Assets	<u>178,489,755</u>	<u>165,419,891</u>
Unfunded Actuarial Accrued Liability (UAAL)	119,514,579	102,941,368
UAAL Subject to Amortization	89,714,146	76,105,242
Normal Cost ¹	\$5,555,301	\$4,721,320
% of Total Annual Payroll ¹	32.5	33.3
Administrative Expenses ¹	121,486	47,685
% of Total Annual Payroll ¹	0.7	0.3
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 17 years (as of 1/1/2024) ¹	7,245,310	7,295,038
% of Total Annual Payroll ¹	42.4	51.4
Total Required Contribution	12,922,097	12,064,043
% of Total Annual Payroll ¹	75.6	85.0
Expected Member Contributions ¹	(1,692,209)	(1,405,907)
% of Total Annual Payroll ¹	(9.9)	(9.9)
Expected City Contribution	11,229,888	10,658,136
% of Total Annual Payroll ¹	65.7	75.1
Assumptions and Methods:		
Actuarial Cost Method	Projected Unit Credit	
Amortization Method	90% Funding by 2040	
Payroll Growth Assumption	3.00%	

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	293,140	16,149,709	16,442,849
2025	668,160	15,948,711	16,616,871
2026	1,078,379	16,120,612	17,198,991
2027	1,606,475	16,201,392	17,807,867
2028	2,212,614	16,274,356	18,486,970
2029	2,847,697	16,290,454	19,138,151
2030	3,616,227	16,321,618	19,937,845
2031	4,416,463	16,363,770	20,780,233
2032	5,252,948	16,336,771	21,589,719
2033	6,067,054	16,243,079	22,310,133
2034	7,000,240	16,109,702	23,109,942
2035	7,859,581	15,944,096	23,803,677
2036	8,625,034	15,756,515	24,381,549
2037	9,350,511	15,494,988	24,845,499
2038	10,067,742	15,188,758	25,256,500
2039	10,732,410	14,865,278	25,597,688
2040	11,356,545	14,474,885	25,831,430
2041	11,969,136	14,092,924	26,062,060
2042	12,627,101	13,723,746	26,350,847
2043	13,276,903	13,243,151	26,520,054
2044	14,014,765	12,743,870	26,758,635
2045	14,745,592	12,231,395	26,976,987
2046	15,514,980	11,711,822	27,226,802
2047	16,187,471	11,189,790	27,377,261
2048	16,862,690	10,669,020	27,531,710
2049	17,482,092	10,151,964	27,634,056
2050	18,044,739	9,640,041	27,684,780
2051	18,525,400	9,133,514	27,658,914
2052	18,990,209	8,631,936	27,622,145
2053	19,482,588	8,134,492	27,617,080
2054	19,943,086	7,640,496	27,583,582
2055	20,358,232	7,149,588	27,507,820
2056	20,689,620	6,661,873	27,351,493
2057	20,946,362	6,177,952	27,124,314
2058	21,127,273	5,699,312	26,826,585
2059	21,249,961	5,228,327	26,478,288
2060	21,318,504	4,768,108	26,086,612
2061	21,319,715	4,322,425	25,642,140
2062	21,253,160	3,895,040	25,148,200
2063	21,114,563	3,489,476	24,604,039

ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate	6.50% per year compounded annually, net of investment related expenses.
Mortality Rate	<p>Active Lives: PubS-2010 Employee mortality, unadjusted, with generational improvements with most recent projection scale (currently Scale MP-2021). 10% of active deaths are assumed to be in the line of duty.</p> <p>Inactive Lives: PubS-2010 Healthy Retiree mortality, adjusted by a factor of 1.15 for male retirees and unadjusted for female retirees, with generational improvements with most recent projection scale (currently Scale MP-2021).</p> <p>Beneficiaries: PubS-2010 Survivor mortality, unadjusted for male beneficiaries and adjusted by a factor of 1.15 for female beneficiaries, with generational improvements with most recent projection scale (currently Scale MP-2021).</p> <p>Disabled Lives: PubS-2010 Disabled mortality, adjusted by a factor of 1.08 for male disabled members and unadjusted for female disabled members, with generational improvements with most recent projection scale (currently Scale MP-2021).</p> <p>The mortality assumptions sufficiently accommodate anticipated future mortality improvements.</p>
Retirement Age	See table at end of this section. This is based on a 2022 experience study performed using actual Evanston Police experience.
Disability Rate	See table at end of this section. 60% of the disabilities are assumed to be in the line of duty. This is based on a 2022 experience study performed for the Illinois Police Officers' Pension Investment Fund.
Termination Rate	See table at end of this section. This is based on a 2022 experience study performed using actual Evanston Police experience.

Salary Increases

See table below. This is based on a 2022 experience study performed using actual Evanston Police experience.

Salary Scale	
Service	Rate
0	9.00%
1	8.00%
2	7.00%
3	6.50%
4	6.00%
5	5.00%
6 - 9	4.00%
10 - 17	3.50%
18+	3.00%

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.

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

<u>% Terminating During the Year</u>		<u>% Becoming Disabled During the Year</u>		<u>% Retiring During the Year (Tier 1)</u>		<u>% Retiring During the Year (Tier 2)</u>	
<u>Service</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>	<u>Age</u>	<u>Rate</u>
0	15.00%	20	0.000%	50	25%	50 - 54	5%
1	10.00%	25	0.029%	51	15%	55	25%
2 - 4	5.00%	30	0.133%	52	20%	56	60%
5 - 7	4.00%	35	0.247%	53	50%	57 - 64	25%
8 - 13	3.00%	40	0.399%	54	20%	65 - 66	40%
14 - 16	2.00%	45	0.561%	55	25%	67+	100%
17 - 20	1.50%	50	0.675%	56	60%		
21+	1.25%	55	0.855%	57 - 64	25%		
		60	1.093%	65 - 66	40%		
				67+	100%		

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 decreased from 69.5% on January 1, 2021 to 59.9% on January 1, 2024, 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 67.9%. 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 52.6% on January 1, 2021 to 57.5% on January 1, 2024, due mainly to assumption changes and favorable 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, stayed approximately the same from January 1, 2021 to January 1, 2024. The current Net Cash Flow Ratio of -0.4% indicates that contributions are not currently 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 \$440,972,943. 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

	<u>1/1/2024</u>	<u>1/1/2023</u>	<u>1/1/2022</u>	<u>1/1/2021</u>
<u>Support Ratio</u>				
Total Actives	136	130	132	146
Total Inactives	227	219	219	210
Actives / Inactives	59.9%	59.4%	60.3%	69.5%
 <u>Asset Volatility Ratio</u>				
Market Value of Assets (MVA)	176,258,820	150,950,058	182,575,170	158,136,437
Total Annual Payroll	17,075,768	14,186,746	14,065,216	15,135,330
MVA / Total Annual Payroll	1,032.2%	1,064.0%	1,298.1%	1,044.8%
 <u>Accrued Liability (AL) Ratio</u>				
Inactive Accrued Liability	210,849,073	194,049,896	199,987,742	187,689,292
Total Accrued Liability	310,446,633	279,084,656	285,794,453	273,132,875
Inactive AL / Total AL	67.9%	69.5%	70.0%	68.7%
 <u>Funded Ratio</u>				
Actuarial Value of Assets (AVA)	178,489,755	165,419,891	159,419,588	143,692,247
Total Accrued Liability	310,446,633	279,084,656	285,794,453	273,132,875
AVA / Total Accrued Liability	57.5%	59.3%	55.8%	52.6%
 <u>Net Cash Flow Ratio</u>				
Net Cash Flow ¹	(726,747)	(3,555,721)	(1,944,953)	(821,224)
Market Value of Assets (MVA)	176,258,820	150,950,058	182,575,170	158,136,437
Ratio	-0.4%	-2.4%	-1.1%	-0.5%

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

STATEMENT OF FIDUCIARY NET POSITION
December 31, 2023

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Checking Account	164,914
Money Market	6,332,878
Total Cash and Equivalents	6,497,792
Receivables:	
From City	155,330
Accrued Past Due Interest	348,984
Total Receivable	504,314
Investments:	
Corporate Bonds	10,604,326
U.S. Gov't and Agency Obligations	33,392,872
Insurance Company Contracts	1,210,129
Stocks	54,221,395
Mutual Funds	69,827,992
Total Investments	169,256,714
Total Assets	176,258,820
<u>LIABILITIES</u>	
Total Liabilities	0
Net Assets:	
Active and Retired Members' Equity	176,258,820
NET POSITION RESTRICTED FOR PENSIONS	176,258,820
TOTAL LIABILITIES AND NET ASSETS	176,258,820

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

ADDITIONS

Contributions:

Member	1,711,047
Miscellaneous Member Revenue	310,191
City	13,556,390

Total Contributions 15,577,628

Investment Income:

Miscellaneous Income	136,459
Net Realized Gain (Loss)	1,051,108
Unrealized Gain (Loss)	21,244,411
Net Increase in Fair Value of Investments	22,431,978
Interest & Dividends	3,974,324
Less Investment Expense ¹	(370,793)

Net Investment Income 26,035,509

Total Additions 41,613,137

DEDUCTIONS

Distributions to Members:

Benefit Payments	15,444,056
Refund of Contributions/Transfers	746,248

Total Distributions 16,190,304

Administrative Expenses 114,071

Total Deductions 16,304,375

Net Increase in Net Position 25,308,762

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year 150,950,058

End of the Year 176,258,820

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	176,258,820
(Gains)/Losses Not Yet Recognized	2,230,935
Actuarial Value of Assets, 12/31/2023	178,489,755
12/31/2023 Limited Actuarial Assets:	178,489,755

Development of Investment Gain/Loss

Market Value of Assets, 12/31/2022	150,950,058
Contributions Less Benefit Payments & Administrative Expenses	(726,747)
Expected Investment Earnings ¹	9,788,134
Actual Net Investment Earnings	26,035,509
2023 Actuarial Investment Gain/(Loss)	16,247,375

¹ Expected Investment Earnings = 6.50% x (150,950,058 + 0.5 x -726,747)

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	8,841,618	1,768,324	0	0	0	0
12/31/2021	16,560,938	6,624,375	3,312,188	0	0	0
12/31/2022	(39,369,223)	(23,621,534)	(15,747,689)	(7,873,845)	0	0
12/31/2023	16,247,375	12,997,900	9,748,425	6,498,950	3,249,475	0
Total		(2,230,935)	(2,687,076)	(1,374,895)	3,249,475	0

Development of Asset Returns

(A) 12/31/2022 Actuarial Assets:	165,419,891
(I) Net Investment Income:	
1. Interest and Dividends	4,110,783
2. Realized Gains (Losses)	1,051,108
3. Change in Actuarial Value	9,005,513
4. Investment Expenses	(370,793)
Total	13,796,611
(B) 12/31/2023 Actuarial Assets:	178,489,755
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	8.36%
Market Value of Assets Rate of Return:	17.29%
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	3,067,937

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

INCOME		
Contributions:		
Member	1,711,047	
Miscellaneous Member Revenue	310,191	
City	13,556,390	
Total Contributions		15,577,628
Earnings from Investments		
Interest & Dividends	3,974,324	
Miscellaneous Income	136,459	
Net Realized Gain (Loss)	1,051,108	
Change in Actuarial Value	9,005,513	
Total Earnings and Investment Gains		14,167,404
EXPENSES		
Administrative Expenses:		
Investment Related ¹	370,793	
Other	114,071	
Total Administrative Expenses		484,864
Distributions to Members:		
Benefit Payments	15,444,056	
Refund of Contributions/Transfers	746,248	
Total Distributions		16,190,304
Change in Net Assets for the Year		13,069,864
Net Assets Beginning of the Year		165,419,891
Net Assets End of the Year ²		178,489,755

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

² Net Assets may be limited for actuarial consideration.

STATISTICAL DATA

	<u>1/1/2024</u>	<u>1/1/2023</u>	<u>1/1/2022</u>	<u>1/1/2021</u>
<u>Actives - Tier 1</u>				
Number	73	81	87	99
Average Current Age	46.0	45.5	44.7	44.5
Average Age at Employment	26.3	26.7	27.0	27.5
Average Past Service	19.7	18.8	17.7	17.0
Average Annual Salary	\$141,046	\$119,675	\$114,946	\$111,500
<u>Actives - Tier 2</u>				
Number	63	49	45	47
Average Current Age	34.1	34.6	34.3	33.5
Average Age at Employment	29.0	28.9	28.3	28.0
Average Past Service	5.1	5.7	6.0	5.5
Average Annual Salary	\$107,610	\$91,696	\$90,331	\$87,167
<u>Service Retirees</u>				
Number	147	147	149	142
Average Current Age	70.2	70.3	70.2	70.0
Average Annual Benefit	\$88,406	\$82,962	\$80,879	\$79,325
<u>Beneficiaries</u>				
Number	38	33	29	32
Average Current Age	74.2	72.6	76.1	77.0
Average Annual Benefit	\$54,596	\$50,354	\$49,262	\$46,009
<u>Disability Retirees</u>				
Number	18	17	18	18
Average Current Age	66.0	66.5	65.4	64.4
Average Annual Benefit	\$54,162	\$49,865	\$47,745	\$47,080
<u>Terminated Vested</u>				
Number	24	22	23	18
Average Current Age	41.4	41.4	41.6	43.4
Average Annual Benefit ¹	\$36,891	\$26,962	\$33,533	\$26,378

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	6	1	2	0	0	1	0	0	0	0	0	10
30 - 34	5	5	1	0	1	7	1	0	0	0	0	20
35 - 39	1	2	1	3	0	8	5	4	0	0	0	24
40 - 44	1	1	0	0	0	2	8	18	6	0	0	36
45 - 49	0	0	0	0	0	0	2	11	14	0	0	27
50 - 54	0	0	0	0	0	1	0	4	3	3	0	11
55 - 59	0	0	0	0	0	0	0	0	3	2	0	5
60 - 64	0	0	0	0	0	0	0	0	0	0	0	0
65+	0	0	0	0	0	0	0	0	0	0	0	0
Total	16	9	4	3	1	19	16	37	26	5	0	136

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 1/1/2023	130
b. Terminations	
i. Vested (partial or full) with deferred benefits	(4)
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	(1)
e. Retired	<u>(5)</u>
f. Continuing participants	120
g. New entrants	<u>16</u>
h. Total active life participants in valuation	136

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	147	33	17	22	219
Retired	5	0	0	0	5
Vested Deferred	0	0	0	4	4
Death, With Survivor	(3)	3	0	0	0
Death, No Survivor	(2)	0	0	0	(2)
Disabled	0	0	1	0	1
Refund of Contributions	0	0	0	(1)	(1)
Transfer Service to New Fund	0	0	0	(3)	(3)
Rehires	0	0	0	0	0
Expired Annuities	0	0	0	0	0
Data Corrections	0	2	0	0	2
Hired/Termed in Same Year	0	0	0	2	2
b. Number current valuation	147	38	18	24	227

SUMMARY OF CURRENT PLAN

Article 3 Pension Fund

The Plan is established and administered as prescribed by “Article 3. Police Pension Fund – Municipalities 500,000 and Under” of the Illinois Pension Code.

Plan Administration

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

- a.) Two members appointed by the Municipality,
- b.) Two active Members of the Police Department elected by the Membership, and
- c.) One retired Member of the Police Department elected by the Membership.

Credited Service

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

Normal Retirement

Date

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

Tier 2: Age 55 with 10 years of Credited Service.

Benefit

Tier 1: 50% of annual salary attached to rank on last day of service plus 2.50% of annual salary for each year of service over 20 years, up to a maximum of 75% of salary. The minimum monthly benefit is \$1,000 per month.

Tier 2: 2.50% per year of service times the average salary for the 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 \$1,000 per month.

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%.

Form of Benefit

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

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

Early Retirement

Date	Tier 1: Age 60 and 8 years of Credited Service. Tier 2: Age 50 with 10 years of Credited Service.
Benefit	Tier 1: Normal Retirement benefit with no minimum. Tier 2: Normal Retirement benefit, reduced 6.00% each year before age 55, with no minimum benefit.
Form of Benefit	Same as Normal Retirement

Disability Benefit

Eligibility	Total and permanent as determined by the Board of Trustees.
Benefit Amount	A maximum of: <ul style="list-style-type: none">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: <ul style="list-style-type: none">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.

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

Vesting (Termination)

Vesting Service Requirement	Tier 1: 8 years. Tier 2: 10 years.
Non-Vested Benefit	Refund of Member Contributions.
Vested Benefit	Either the termination benefit, payable upon reaching age 60 (55 for Tier 2), provided contributions are not withdrawn, or a refund of member contributions. The termination benefit is 2.50% of annual salary held in the year prior to termination (4-year final average salary for Tier 2) times creditable service.

Contributions

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