

VILLAGE OF TINLEY PARK
POLICE PENSION FUND
ACTUARIAL VALUATION
AS OF MAY 1, 2024
CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING APRIL 30, 2026



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS



October 21, 2024

Ms. Hannah Lipman
Village of Tinley Park Police Pension Fund

Re: Actuarial Valuation Report – Village of Tinley Park Police Pension Fund

Dear Ms. Lipman:

We are pleased to present to the Village this report of the annual actuarial valuation of the Village of Tinley Park 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 Village, 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.

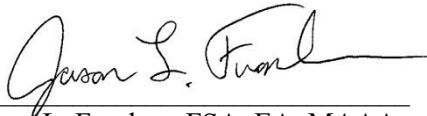
The undersigned are familiar with the immediate and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the 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 Village of Tinley Park, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Village of Tinley Park 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 Village of Tinley Park Police Pension Fund, performed as of May 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 April 30, 2026.

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

Valuation Date	5/1/2024	5/1/2023
Applicable to Fiscal Year Ending	<u>4/30/2026</u>	<u>4/30/2025</u>
Total Recommended Contribution	\$6,457,212	\$5,734,829
% of Projected Annual Payroll	64.7%	61.7%
Member Contributions (Est.)	(989,654)	(921,401)
% of Projected Annual Payroll	(9.9%)	(9.9%)
Village Recommended Contribution	5,467,558	4,813,428
% of Projected Annual Payroll	54.8%	51.8%

As you can see, the Total Recommended Contribution shows an increase when compared to the results determined in the May 1, 2023 actuarial valuation report. The increase is attributable to programming updates, the natural increase in the amortization payment due to the payroll growth assumption, and unfavorable plan experience.

Plan experience was unfavorable overall on the basis of the plan's actuarial assumptions. The primary source of unfavorable experience was an investment return of 5.30% (Actuarial Asset Basis) which fell short of the 7.00% assumption. There were no significant sources of favorable experience.

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>5/1/2024</u>	<u>5/1/2023</u>
A. Participant Data		
Number Included		
Actives	87	82
Service Retirees	58	57
Beneficiaries	7	5
Disability Retirees	7	7
Terminated Vested	<u>9</u>	<u>10</u>
Total	168	161
Total Annual Payroll	\$9,986,413	\$9,297,691
Payroll Under Assumed Ret. Age	9,986,413	9,297,691
Annual Rate of Payments to:		
Service Retirees	5,358,165	5,038,802
Beneficiaries	551,634	366,408
Disability Retirees	427,983	407,958
Terminated Vested	45,031	104,639
B. Assets		
Actuarial Value	100,870,449	96,434,418
Market Value	97,401,207	89,153,665
C. Liabilities		
Present Value of Benefits		
Actives		
Retirement Benefits	49,016,525	46,863,504
Disability Benefits	4,602,059	4,244,007
Death Benefits	669,715	639,187
Vested Benefits	2,918,798	2,692,128
Service Retirees	81,768,689	77,981,794
Beneficiaries	5,194,244	3,303,774
Disability Retirees	6,304,622	6,013,074
Terminated Vested	<u>587,185</u>	<u>1,633,865</u>
Total	151,061,837	143,371,333

C. Liabilities - (Continued)	<u>5/1/2024</u>	<u>5/1/2023</u>
Present Value of Future Salaries	107,634,392	98,654,510
Present Value of Future Member Contributions	10,666,568	9,776,662
Normal Cost (Retirement)	1,451,295	1,413,682
Normal Cost (Disability)	268,933	261,659
Normal Cost (Death)	40,404	39,614
Normal Cost (Vesting)	<u>205,014</u>	<u>192,172</u>
Total Normal Cost	1,965,646	1,907,127
Present Value of Future Normal Costs	18,812,223	18,022,625
Accrued Liability (Retirement)	34,870,103	33,277,127
Accrued Liability (Disability)	1,793,189	1,597,778
Accrued Liability (Death)	218,841	209,626
Accrued Liability (Vesting)	1,512,741	1,331,670
Accrued Liability (Inactives)	<u>93,854,740</u>	<u>88,932,507</u>
Total Actuarial Accrued Liability	132,249,614	125,348,708
Unfunded Actuarial Accrued Liability (UAAL)	31,379,165	28,914,290
Funded Ratio (AVA / AL)	76.3%	76.9%

	<u>5/1/2024</u>	<u>5/1/2023</u>
D. Actuarial Present Value of Accrued Benefits		
Vested Accrued Benefits		
Inactives	93,854,740	88,932,507
Actives	12,111,558	11,955,800
Member Contributions	<u>8,684,963</u>	<u>8,098,135</u>
Total	114,651,261	108,986,442
Non-vested Accrued Benefits	<u>1,111,063</u>	<u>1,131,354</u>
Total Present Value Accrued Benefits	115,762,324	110,117,796
Funded Ratio (MVA / PVAB)	84.1%	81.0%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:		
Plan Amendments	0	
Assumption Changes	0	
Plan Experience	4,229,700	
Benefits Paid	(6,080,597)	
Interest	7,495,425	
Other	<u>0</u>	
Total	5,644,528	

Valuation Date	5/1/2024	5/1/2023
Applicable to Fiscal Year Ending	<u>4/30/2026</u>	<u>4/30/2025</u>

E. Pension Cost

Normal Cost ¹	\$2,103,241	\$2,040,626
% of Total Annual Payroll ¹	21.1	21.9
Administrative Expenses ¹	69,308	80,600
% of Total Annual Payroll ¹	0.7	0.9
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 9 years (as of 5/1/2024) ¹	4,284,663	3,613,603
% of Total Annual Payroll ¹	42.9	38.9
Total Recommended Contribution	6,457,212	5,734,829
% of Total Annual Payroll ¹	64.7	61.7
Expected Member Contributions ¹	(989,654)	(921,401)
% of Total Annual Payroll ¹	(9.9)	(9.9)
Expected Village Contribution	5,467,558	4,813,428
% of Total Annual Payroll ¹	54.8	51.8

F. Past Contributions

Plan Years Ending:	<u>4/30/2024</u>
Total Recommended Contribution	5,090,834
Village Requirement	4,136,537
Actual Contributions Made:	
Members (excluding buyback)	954,297
Village	<u>4,172,954</u>
Total	5,127,251

G. Net Actuarial (Gain)/Loss	3,627,191
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¹ Contributions developed as of 5/1/2024 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	31,379,165
2025	29,291,043
2026	26,917,501
2028	21,214,275
2030	14,050,276
2031	9,842,723
2033	0

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	4/30/2024	5.47%	5.61%
Year Ended	4/30/2023	4.00%	5.71%
Year Ended	4/30/2022	5.02%	5.74%
Year Ended	4/30/2021	3.91%	5.57%
Year Ended	4/30/2020	4.61%	5.31%

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

		<u>Actual MVA</u>	<u>Actual AVA</u>	<u>Assumed</u>
Year Ended	4/30/2024	10.03%	5.30%	7.00%
Year Ended	4/30/2023	1.37%	4.59%	7.00%
Year Ended	4/30/2022	-8.30%	6.86%	7.00%
Year Ended	4/30/2021	28.86%	9.74%	7.00%
Year Ended	4/30/2020	0.44%	4.69%	7.00%

DEVELOPMENT OF MAY 1, 2024 AMORTIZATION PAYMENT

(1)	Unfunded Actuarial Accrued Liability as of May 1, 2023	\$28,914,290
(2)	Sponsor Normal Cost developed as of May 1, 2023	985,726
(3)	Expected administrative expenses for the year ended April 30, 2024	75,327
(4)	Expected interest on (1), (2) and (3)	2,095,638
(5)	Sponsor contributions to the System during the year ended April 30, 2024	4,172,954
(6)	Expected interest on (5)	146,053
(7)	Expected Unfunded Actuarial Accrued Liability as of April 30, 2024, (1)+(2)+(3)+(4)-(5)-(6)	27,751,974
(8)	Change to UAAL due to Assumption Change	0
(9)	Change to UAAL due to Actuarial (Gain)/Loss	3,627,191
(10)	Unfunded Accrued Liability as of May 1, 2024	31,379,165
(11)	UAAL Subject to Amortization (100% AAL less Actuarial Assets)	31,379,165

<u>Date Established</u>	<u>Years Remaining</u>	<u>5/1/2024 Amount</u>	<u>Amortization Amount</u>
5/1/2024	9	31,379,165	4,004,358

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of May 1, 2023	\$28,914,290
(2) Expected UAAL as of May 1, 2024	27,751,974
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	1,629,711
Salary Increases	312,301
Active Decrements	191,349
Inactive Mortality	(6,586)
Programming Updates	1,022,148
Other	<u>478,268</u>
Change in UAAL due to (Gain)/Loss	3,627,191
Change to UAAL due to Assumption Change	<u>0</u>
(4) Actual UAAL as of May 1, 2024	\$31,379,165

RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1) Contribution Determined as of May 1, 2023	\$ 4,813,428
(2) Summary of Contribution Impact by component:	
Change in Normal Cost	62,615
Change in Assumed Administrative Expense	(11,292)
Investment Return (Actuarial Asset Basis)	222,529
Salary Increases	42,643
New Entrants	9,680
Active Decrements	26,128
Inactive Mortality	(899)
Contributions (More) or Less than Recommended	(5,147)
Increase in Amortization Payment Due to Payroll Growth Assumption	117,442
Change in Expected Member Contributions	(68,253)
Assumption Change	-
Programming Updates	139,569
Other	<u>119,115</u>
Total Change in Contribution	654,130
(3) Contribution Determined as of May 1, 2024	\$5,467,558

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	5/1/2024	5/1/2023
Applicable to Fiscal Year Ending	<u>4/30/2026</u>	<u>4/30/2025</u>
Actuarial Accrued Liability (PUC)	127,496,859	121,207,078
Actuarial Value of Assets	<u>100,870,449</u>	<u>96,434,418</u>
Unfunded Actuarial Accrued Liability (UAAL)	26,626,410	24,772,660
UAAL Subject to Amortization	13,876,724	12,651,952
Normal Cost ¹	\$2,342,124	\$2,251,758
% of Total Annual Payroll ¹	23.4	24.2
Administrative Expenses ¹	69,308	80,600
% of Total Annual Payroll ¹	0.7	0.9
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 16 years (as of 5/1/2024) ¹	1,196,456	1,043,349
% of Total Annual Payroll ¹	12.0	11.2
Total Required Contribution	3,607,888	3,375,707
% of Total Annual Payroll ¹	36.1	36.3
Expected Member Contributions ¹	(989,654)	(921,401)
% of Total Annual Payroll ¹	(9.9)	(9.9)
Expected Village Contribution	2,618,234	2,454,306
% of Total Annual Payroll ¹	26.2	26.4

Assumptions and Methods:

Actuarial Cost Method	Projected Unit Credit
Amortization Method	90% Funding by 2040

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

¹ Contributions developed as of 5/1/2024 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	207,126	6,503,493	6,710,619
2025	433,147	6,439,418	6,872,565
2026	656,131	6,578,427	7,234,558
2027	879,107	6,707,501	7,586,608
2028	1,075,945	6,830,184	7,906,129
2029	1,280,906	6,980,874	8,261,780
2030	1,526,135	7,112,222	8,638,357
2031	1,761,904	7,214,448	8,976,352
2032	2,012,806	7,306,616	9,319,422
2033	2,314,206	7,387,088	9,701,294
2034	2,633,053	7,454,260	10,087,313
2035	2,944,799	7,506,563	10,451,362
2036	3,242,747	7,542,558	10,785,305
2037	3,537,141	7,560,906	11,098,047
2038	3,826,355	7,560,392	11,386,747
2039	4,114,952	7,539,980	11,654,932
2040	4,417,762	7,498,923	11,916,685
2041	4,745,493	7,436,664	12,182,157
2042	5,153,039	7,352,883	12,505,922
2043	5,580,569	7,272,128	12,852,697
2044	6,034,202	7,146,074	13,180,276
2045	6,566,607	6,999,298	13,565,905
2046	7,158,949	6,832,951	13,991,900
2047	7,743,102	6,648,354	14,391,456
2048	8,310,447	6,445,938	14,756,385
2049	9,055,645	6,226,778	15,282,423
2050	9,738,238	5,991,889	15,730,127
2051	10,293,257	5,742,236	16,035,493
2052	10,745,733	5,478,908	16,224,641
2053	11,111,536	5,203,147	16,314,683
2054	11,406,928	4,916,408	16,323,336
2055	11,669,746	4,620,183	16,289,929
2056	11,880,026	4,316,052	16,196,078
2057	12,041,650	4,005,747	16,047,397
2058	12,163,989	3,691,176	15,855,165
2059	12,248,260	3,374,691	15,622,951
2060	12,292,910	3,059,171	15,352,081
2061	12,297,642	2,747,920	15,045,562
2062	12,265,045	2,444,625	14,709,670
2063	12,198,144	2,153,221	14,351,365

ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate	7.00% per year compounded annually, net of investment related expenses.
Mortality Rate	<i>Active Lives:</i> 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. <i>Inactive Lives:</i> 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). <i>Beneficiaries:</i> 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). <i>Disabled Lives:</i> 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). The mortality assumptions sufficiently accommodate anticipated future mortality improvements.
Retirement Age	See table at end of this section. This is based on a 2022 experience study performed for the Illinois Police Officers' Pension Investment Fund.
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 for the Illinois Police Officers' Pension Investment Fund.

Salary Increases

See table below. This is based on a 2022 experience study performed for the Illinois Police Officers' Pension Investment Fund.

Salary Scale	
Service	Rate
0	11.00%
1	9.50%
2	8.00%
3	7.50%
4	7.00%
5	6.00%
6	5.00%
7 - 11	4.00%
12 - 29	3.75%
30+	3.50%

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 Percentage of Payroll method over a 40-year period which commenced in 1993. The initial amortization amount is 100% of the Accrued Liability less the Actuarial Value of Assets.

Payroll Growth

3.25% per year.

Administrative Expenses

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

Decrement Tables

% Terminating During the Year		% Becoming Disabled During the Year		% Retiring During the Year (Tier 1)		% Retiring During the Year (Tier 2)	
Service	Rate	Age	Rate	Age	Rate	Age	Rate
0	13.00%	20	0.000%	50 - 54	20%	50 - 54	5%
1	8.00%	25	0.029%	55 - 62	25%	55	40%
2	7.00%	30	0.133%	63	33%	56 - 62	25%
3	6.00%	35	0.247%	64	40%	63	33%
4	5.00%	40	0.399%	65 - 69	55%	64	40%
5	4.50%	45	0.561%	70+	100%	65 - 69	55%
6	4.00%	50	0.675%			70+	100%
7	3.50%	55	0.855%				
8	3.00%	60	1.093%				
9	2.50%						
10	2.25%						
11	2.00%						
12	1.75%						
13	1.50%						
14+	1.25%						

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 40-year period which commenced in 1993. 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 119.1% on May 1, 2021 to 107.4% on May 1, 2024, indicating that the plan has been 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 71.0%. 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 stayed approximately the same from May 1, 2021 to May 1, 2024.
- 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, 2021 to May 1, 2024. The current Net Cash Flow Ratio of -0.7% 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 4.42%, resulting in an LDROM of \$190,311,944. 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>5/1/2024</u>	<u>5/1/2023</u>	<u>5/1/2022</u>	<u>5/1/2021</u>
<u>Support Ratio</u>				
Total Actives	87	82	83	81
Total Inactives	81	79	73	68
Actives / Inactives	107.4%	103.8%	113.7%	119.1%

Asset Volatility Ratio

Market Value of Assets (MVA)	97,401,207	89,153,665	88,769,657	96,420,304
Total Annual Payroll	9,986,413	9,297,691	9,260,217	8,847,251
MVA / Total Annual Payroll	975.3%	958.9%	958.6%	1,089.8%

Accrued Liability (AL) Ratio

Inactive Accrued Liability	93,854,740	88,932,507	81,087,488	73,599,564
Total Accrued Liability	132,249,614	125,348,708	118,796,160	114,091,600
Inactive AL / Total AL	71.0%	70.9%	68.3%	64.5%

Funded Ratio

Actuarial Value of Assets (AVA)	100,870,449	96,434,418	93,012,885	86,687,673
Total Accrued Liability	132,249,614	125,348,708	118,796,160	114,091,600
AVA / Total Accrued Liability	76.3%	76.9%	78.3%	76.0%

Net Cash Flow Ratio

Net Cash Flow ¹	(661,514)	(826,486)	366,187	(120,492)
Market Value of Assets (MVA)	97,401,207	89,153,665	88,769,657	96,420,304
Ratio	-0.7%	-0.9%	0.4%	-0.1%

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

STATEMENT OF FIDUCIARY NET POSITION
April 30, 2024

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Checking Account	94,351
Money Market	800,000
Total Cash and Equivalents	894,351
Receivables:	
From IRS	129,321
Prepays	11,053
Total Receivable	140,374
Investments:	
Insurance Company Contracts	2,547,367
Pooled/Common/Commingled Funds	93,822,755
Total Investments	96,370,122
Total Assets	97,404,847
 <u>LIABILITIES</u>	
Liabilities:	
Payable:	
Expenses	3,640
Total Liabilities	3,640
Net Assets:	
Active and Retired Members' Equity	97,401,207
NET POSITION RESTRICTED FOR PENSIONS	97,401,207
TOTAL LIABILITIES AND NET ASSETS	97,404,847

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED April 30, 2024
Market Value Basis

ADDITIONS

Contributions:

Member	954,297
Miscellaneous Member Revenue	356,606
City	4,172,954

Total Contributions	5,483,857
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Investment Income:

Net Increase in Fair Value of Investments	8,093,048
Interest & Dividends	870,370
Less Investment Expense ¹	(54,362)

Net Investment Income	8,909,056
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Total Additions	14,392,913
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DEDUCTIONS

Distributions to Members:

Benefit Payments	6,004,570
Refund of Contributions/Transfers	76,027

Total Distributions	6,080,597
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Administrative Expenses	64,774
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Total Deductions	6,145,371
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Net Increase in Net Position	8,247,542
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NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year	89,153,665
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End of the Year	97,401,207
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¹ Investment Related expenses include investment advisory, custodial and performance monitoring fees.

ACTUARIAL ASSET VALUATION

April 30, 2024

Development of Actuarial Value of Assets

Market Value of Assets, 4/30/2024	97,401,207
(Gains)/Losses Not Yet Recognized	<u>3,469,242</u>
Actuarial Value of Assets, 4/30/2024	100,870,449
4/30/2024 Limited Actuarial Assets:	100,870,449

Development of Investment Gain/Loss

Market Value of Assets, 4/30/2023	89,153,665
Contributions Less Benefit Payments & Administrative Expenses	(661,514)
Expected Investment Earnings ¹	6,217,604
Actual Net Investment Earnings	<u>8,909,056</u>
2024 Actuarial Investment Gain/(Loss)	2,691,452

¹ Expected Investment Earnings = 7.00% x (89,153,665 + 0.5 x -661,514)

Gains/(Losses) Not Yet Recognized

Plan Year Ending	Gain/(Loss)	Amounts Not Yet Recognized by Valuation Year				
		2024	2025	2026	2027	2028
4/30/2021	16,369,491	3,273,898	0	0	0	0
4/30/2022	(14,779,072)	(5,911,629)	(2,955,814)	0	0	0
4/30/2023	(4,974,455)	(2,984,673)	(1,989,782)	(994,891)	0	0
4/30/2024	2,691,452	2,153,162	1,614,871	1,076,581	538,290	0
Total		(3,469,242)	(3,330,725)	81,690	538,290	0

Development of Asset Returns

(A) 4/30/2023 Actuarial Assets:	96,434,418
(I) Net Investment Income:	
1. Interest and Dividends	872,147
2. Realized Gains (Losses)	0
3. Change in Actuarial Value	4,279,760
4. Investment Expenses	<u>(54,362)</u>
Total	5,097,545
(B) 4/30/2024 Actuarial Assets:	100,870,449
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	5.30%
Market Value of Assets Rate of Return:	10.03%
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	(1,629,711)

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
April 30, 2024
Actuarial Asset Basis

INCOME		
Contributions:		
Member	954,297	
Miscellaneous Member Revenue	356,606	
City	4,172,954	
Total Contributions		5,483,857
Earnings from Investments		
Interest & Dividends	870,370	
Miscellaneous Income	1,777	
Change in Actuarial Value	4,279,760	
Total Earnings and Investment Gains		5,151,907
EXPENSES		
Administrative Expenses:		
Investment Related ¹	54,362	
Other	64,774	
Total Administrative Expenses		119,136
Distributions to Members:		
Benefit Payments	6,004,570	
Refund of Contributions/Transfers	76,027	
Total Distributions		6,080,597
Change in Net Assets for the Year		4,436,031
Net Assets Beginning of the Year		96,434,418
Net Assets End of the Year ²		100,870,449

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

² Net Assets may be limited for actuarial consideration.

STATISTICAL DATA

	<u>5/1/2024</u>	<u>5/1/2023</u>	<u>5/1/2022</u>	<u>5/1/2021</u>
<u>Actives - Tier 1</u>				
Number	28	30	33	39
Average Current Age	47.7	47.3	47.0	47.3
Average Age at Employment	26.2	26.4	26.2	26.6
Average Past Service	21.5	20.9	20.8	20.7
Average Annual Salary	\$130,029	\$126,290	\$123,026	\$119,541
<u>Actives - Tier 2</u>				
Number	59	52	50	42
Average Current Age	32.9	32.9	32.2	31.3
Average Age at Employment	27.1	27.7	27.2	26.7
Average Past Service	5.8	5.2	5.0	4.6
Average Annual Salary	\$107,553	\$105,942	\$103,073	\$99,647
<u>Service Retirees</u>				
Number	58	57	54	51
Average Current Age	64.5	64.6	64.1	64.2
Average Annual Benefit	\$92,382	\$88,400	\$85,709	\$83,989
<u>Beneficiaries</u>				
Number	7	5	6	4
Average Current Age	69.9	71.2	73.9	73.1
Average Annual Benefit	\$78,805	\$73,282	\$65,110	\$50,106
<u>Disability Retirees</u>				
Number	7	7	6	7
Average Current Age	59.9	58.9	61.6	63.3
Average Annual Benefit	\$61,140	\$58,280	\$54,718	\$52,361
<u>Terminated Vested</u>				
Number	9	10	7	6
Average Current Age	36.8	37.2	37.1	34.2
Average Annual Benefit ¹	\$22,516	\$34,880	\$34,880	\$22,516

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	1	0	0	0	0	0	0	0	0	0	0	1
25 - 29	4	0	2	1	2	1	0	0	0	0	0	10
30 - 34	3	2	2	0	4	15	5	0	0	0	0	31
35 - 39	1	1	0	1	1	3	7	1	0	0	0	15
40 - 44	0	0	0	0	0	2	1	8	1	0	0	12
45 - 49	0	0	0	0	0	0	0	1	4	0	0	5
50 - 54	0	0	0	0	0	0	0	3	1	4	0	8
55 - 59	0	0	0	0	0	0	0	0	0	3	0	3
60 - 64	0	0	1	0	0	0	0	0	0	1	0	2
65+	0	0	0	0	0	0	0	0	0	0	0	0
Total	9	3	5	2	7	21	13	13	6	8	0	87

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 5/1/2023	82
b. Terminations	
i. Vested (partial or full) with deferred benefits	0
ii. Non-vested or full lump sum distribution received	(2)
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	(2)
f. Continuing participants	78
g. New entrants	9
h. Total active life participants in valuation	87

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	57	5	7	10	79
Retired	3	0	0	(1)	2
Vested Deferred	0	0	0	0	0
Death, With Survivor	(2)	2	0	0	0
Death, No Survivor	0	0	0	0	0
Disabled	0	0	0	0	0
Refund of Contributions	0	0	0	0	0
Rehires	0	0	0	0	0
Expired Annuities	0	0	0	0	0
Data Corrections	0	0	0	0	0
Hired/Termed in Same Year	0	0	0	0	0
b. Number current valuation	58	7	7	9	81

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:

- 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.

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.