



December 6, 2022

Alsip Police Pension Fund

Re: Actuarial Valuation Report for Statutory Minimum Required Contribution

Dear Board:

We are pleased to present to the Board this report of the annual actuarial valuation of the Alsip 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 Police Officers' Pension Investment Fund 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 information supplied by the local Board, asset information and financial reports prepared by the auditors for the Police Officers' Pension Investment Fund, plan design information as defined in Article 3 of the Illinois Pension Code, 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 plan sponsor, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Alsip Police Pension Fund. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

Respectfully submitted,

Bv

Jason L. Franken, FSA, EA, MAAA

Foster & Foster, Inc.

By:

Paul M. Baugher, FSA, EA, MAAA

Foster & Foster, Inc.

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SUMMARY OF REPORT

The regular annual actuarial valuation of the Alsip Police Pension Fund, performed as of May 1, 2022, has been completed and the results are presented in this report. The contribution requirements are as follows:

Valuation Date	May 1, 2022
Total Statutory Contribution	3,341,369
Member Contributions (Est.)	(387,337)
Statutory Minimum Contribution	2,954,032
Phase In of 2022 Assumption Changes Impact	280,864
Statutory Minimum Required Contribution (after phase-in) ¹	3,234,896

¹ This calculation is determined in accordance with Section 3-125 of the Illinois Pension Code. This report should not be relied upon for purposes other than determining the current tax levy required under the Illinois Pension Code. The assumptions have been set based on expectations for all Article 3 funds in the State of Illinois. The actuarial methods are prescribed by the Illinois Pension Code and do not necessarily represent the approach recommended by either the actuary or the Police Officers' Pension Investment Fund.

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

The actuarial assumptions have been updated from the prior valuation based on an experience study performed for the Police Officers' Pension Investment Fund dated March 4, 2022 and adopted by the Board of Trustees on September 9, 2022.

There were no method changes since the prior valuation.

SUMMARY OF PRINCIPAL VALUATION RESULTS

A. Participant data

Actives	38
Service Retirees	34
Beneficiaries	4
Disability Retirees	4
Terminated Vested Due Future Annuity	2
Terminated with Accumulated Contributions in Fund	<u>9</u>
Total	91
Total Annual Payroll	3,659,691
Annual Rate of Payments to:	
Service Retirees	3,111,950
Beneficiaries	298,904
Disability Retirees	187,205
Terminated Vested Due Future Annuity	45,813
B. Assets	
Actuarial Value (AVA)	31,242,067
Market Value (MVA)	31,202,655
C. Liabilities	
Present Value of Benefits (PVB)	
Actives	
Retirement Benefits	22,714,513
Death Benefits	234,063
Disability Benefits	1,951,940
Terminated Vested Benefits	1,285,815
Service Retirees	43,468,709
Beneficiaries	2,824,494
Disability Retirees	3,156,250
Terminated Vested Due Future Annuity	251,404
Terminated with Accumulated Contributions in Fund	<u>251,508</u>
Total	76,138,696

SUMMARY OF PRINCIPAL VALUATION RESULTS

C. Liabilities (continued)

D.

Actives Retirement Benefits 14,117,362 Death Benefits 135,638 Disability Benefits 1,165,859 Terminated Vested Benefits 873,458 Service Retirees 43,468,709 Beneficiaries 2,824,494 Disability Retirees 3,156,250 Terminated Vested Due Future Annuity 251,404 Terminated with Accumulated Contributions in Fund 251,508 Total 66,244,682 Normal Cost 814,940 Normal Cost (Death) 14,139 Normal Cost (Death) 14,139 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147 Amortization Payment, Beginning of Year 2,107,688	Accrued Liability (AL)	
Death Benefits 135,638 Disability Benefits 1,165,859 Terminated Vested Benefits 873,458 Service Retirees 43,468,709 Beneficiaries 2,824,494 Disability Retirees 3,156,250 Terminated Vested Due Future Annuity 251,404 Terminated with Accumulated Contributions in Fund 251,508 Total 66,244,682 Normal Cost 814,940 Normal Cost (Death) 14,139 Normal Cost (Disability) 98,645 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Actives	
Disability Benefits 1,165,859 Terminated Vested Benefits 873,458 Service Retirees 43,468,709 Beneficiaries 2,824,494 Disability Retirees 3,156,250 Terminated Vested Due Future Annuity 251,404 Terminated with Accumulated Contributions in Fund 251,508 Total 66,244,682 Normal Cost 814,940 Normal Cost (Death) 14,139 Normal Cost (Disability) 98,645 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 47.2% Total Accrued Liability 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Retirement Benefits	14,117,362
Terminated Vested Benefits 873,458 Service Retirees 43,468,709 Beneficiaries 2,824,494 Disability Retirees 3,156,250 Terminated Vested Due Future Annuity 251,404 Terminated with Accumulated Contributions in Fund 251,508 Total 66,244,682 Normal Cost 814,940 Normal Cost (Death) 14,139 Normal Cost (Disability) 98,645 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 47.2% Total Accrued Liability 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Death Benefits	135,638
Service Retirees 43,468,709 Beneficiaries 2,824,494 Disability Retirees 3,156,250 Terminated Vested Due Future Annuity 251,404 Terminated with Accumulated Contributions in Fund 251,508 Total 66,244,682 Normal Cost 814,940 Normal Cost (Retirement) 814,940 Normal Cost (Death) 14,139 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Disability Benefits	1,165,859
Beneficiaries 2,824,494 Disability Retirees 3,156,250 Terminated Vested Due Future Annuity 251,404 Terminated with Accumulated Contributions in Fund 251,508 Total 66,244,682 Normal Cost S14,940 Normal Cost (Retirement) 814,940 Normal Cost (Death) 14,139 Normal Cost (Disability) 98,645 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 47.2% Total Accrued Liability 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Terminated Vested Benefits	873,458
Disability Retirees 3,156,250 Terminated Vested Due Future Annuity 251,404 Terminated with Accumulated Contributions in Fund 251,508 Total 66,244,682 Normal Cost State of the contributions in Fund Normal Cost State of the contributions in Fund Normal Cost State of the contributions in Fund Normal Cost (Retirement) 814,940 Normal Cost (Death) 14,139 Normal Cost (Disability) 98,645 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Service Retirees	43,468,709
Terminated Vested Due Future Annuity 251,404 Terminated with Accumulated Contributions in Fund 251,508 Total 66,244,682 Normal Cost Normal Cost (Retirement) 814,940 Normal Cost (Death) 14,139 Normal Cost (Disability) 98,645 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Beneficiaries	2,824,494
Terminated with Accumulated Contributions in Fund $Total \qquad \qquad$	Disability Retirees	3,156,250
Total 66,244,682 Normal Cost 814,940 Normal Cost (Death) 14,139 Normal Cost (Disability) 98,645 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Terminated Vested Due Future Annuity	251,404
Normal Cost 814,940 Normal Cost (Death) 14,139 Normal Cost (Disability) 98,645 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Terminated with Accumulated Contributions in Fund	<u>251,508</u>
Normal Cost (Retirement) 814,940 Normal Cost (Death) 14,139 Normal Cost (Disability) 98,645 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Total	66,244,682
Normal Cost (Retirement) 814,940 Normal Cost (Death) 14,139 Normal Cost (Disability) 98,645 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147		
Normal Cost (Death) 14,139 Normal Cost (Disability) 98,645 Normal Cost (Terminated Vested) 73,192 Total 1,000,916 Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 35,002,615 Funded Ratio (AVA / AL) 47.2% Amortization Payment 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Normal Cost	
Normal Cost (Disability) Normal Cost (Terminated Vested) Total Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) Funded Ratio (AVA / AL) Amortization Payment Total Accrued Liability Total Accrued Liability Funded Ratio Target Actuarial Value of Assets Liabilities Subject to Amortization over 18 Years 98,645 73,192 1,000,916 47.2% 47.2%	Normal Cost (Retirement)	814,940
Normal Cost (Terminated Vested) Total Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) Funded Ratio (AVA / AL) Amortization Payment Total Accrued Liability Total Accrued Liability Funded Ratio Target Actuarial Value of Assets Liabilities Subject to Amortization over 18 Years 73,192 1,000,916 47.2% 47.2%	Normal Cost (Death)	
Total Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) Funded Ratio (AVA / AL) Amortization Payment Total Accrued Liability Total Accrued Liability 90% Funded Ratio Target Actuarial Value of Assets Liabilities Subject to Amortization over 18 Years 1,000,916 47.2% 47.2% 47.2% 47.2% 47.2% 47.2% 47.2% 47.2% 47.2% 47.2% 47.2% 47.2% 47.2% 47.2% 47.2% 47.2%	Normal Cost (Disability)	98,645
Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) Funded Ratio (AVA / AL) Amortization Payment Total Accrued Liability 90% Funded Ratio Target Actuarial Value of Assets Liabilities Subject to Amortization over 18 Years 35,002,615 47.2% 47.2% 47.2% 47.2% 28,378,147	Normal Cost (Terminated Vested)	<u></u>
Funded Ratio (AVA / AL) Amortization Payment Total Accrued Liability 90% Funded Ratio Target Actuarial Value of Assets Liabilities Subject to Amortization over 18 Years 47.2% 66,244,682 59,620,214 Actuarial Value of Assets 28,378,147	Total	1,000,916
Funded Ratio (AVA / AL) Amortization Payment Total Accrued Liability 90% Funded Ratio Target Actuarial Value of Assets Liabilities Subject to Amortization over 18 Years 47.2% 66,244,682 59,620,214 Actuarial Value of Assets 28,378,147		25.002.615
Amortization Payment Total Accrued Liability 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Unfunded Actuarial Accrued Liability (UAAL = AL - AVA)	35,002,613
Amortization Payment Total Accrued Liability 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Funded Ratio (AVA / AL)	47.2%
Total Accrued Liability 66,244,682 90% Funded Ratio Target 59,620,214 Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	2 43344 11446 (11111/112)	.,,2,
90% Funded Ratio Target59,620,214Actuarial Value of Assets31,242,067Liabilities Subject to Amortization over 18 Years28,378,147	Amortization Payment	
90% Funded Ratio Target59,620,214Actuarial Value of Assets31,242,067Liabilities Subject to Amortization over 18 Years28,378,147		
Actuarial Value of Assets 31,242,067 Liabilities Subject to Amortization over 18 Years 28,378,147	Total Accrued Liability	66,244,682
Liabilities Subject to Amortization over 18 Years 28,378,147	•	
	Actuarial Value of Assets	31,242,067
Amortization Payment, Beginning of Year 2,107,688	Liabilities Subject to Amortization over 18 Years	28,378,147
	Amortization Payment, Beginning of Year	2,107,688

SUMMARY OF PRINCIPAL VALUATION RESULTS

E. Statutory Minimum Required Contribution ¹

Normal Cost, Including Expense Load ²	1,090,358
Payment Required to Amortize UAAL Over 18 Years ²	2,251,011
Total Statutory Contribution	3,341,369
Expected Member Contributions ²	(387,337)
Statutory Minimum Required Contribution (before phase in)	2,954,032
Phase In of 2022 Assumption Changes Impact	280,864
Statutory Minimum Required Contribution (after phase in) ³	3,234,896

¹ This calculation is determined in accordance with Section 3-125 of the Illinois Pension Code. This report should not be relied upon for purposes other than determining the current tax levy required under the Illinois Pension Code. The assumptions have been set based on expectations for all Article 3 funds in the State of Illinois. The actuarial methods are prescribed by the Illinois Pension Code and do not necessarily represent the approach recommended by either the actuary or the Police Officers' Pension Investment Fund.

² Includes one year of interest.

³ Under Public Act 101-0610, the impact of any assumption changes shall be implemented in equal annual amounts over the 3 year period beginning in the fiscal year of the pension fund in which such change first occurs.

PROJECTION OF BENEFIT PAYMENTS 1

	Payments for	Payments for	Total
Year Ending	Current Actives	Current Non-Actives	Payments
		• • • • • • •	• 0 • 0 • 0 0
2023	31,701	3,818,997	3,850,698
2024	63,601	3,620,317	3,683,918
2025	101,389	3,669,502	3,770,891
2026	163,464	3,739,415	3,902,879
2027	280,482	3,799,670	4,080,152
2028	423,628	3,841,360	4,264,988
2029	618,745	3,876,775	4,495,520
2030	815,562	3,905,138	4,720,700
2031	1,016,594	3,925,660	4,942,254
2032	1,201,515	3,951,853	5,153,368
2033	1,382,173	3,955,062	5,337,235
2034	1,571,683	3,947,828	5,519,511
2035	1,728,709	3,929,307	5,658,016
2036	1,900,510	3,898,746	5,799,256
2037	2,056,717	3,878,510	5,935,227
2038	2,214,835	3,846,479	6,061,314
2039	2,361,902	3,779,029	6,140,931
2040	2,488,661	3,698,333	6,186,994
2041	2,617,483	3,604,702	6,222,185
2042	2,736,531	3,498,805	6,235,336
2043	2,856,077	3,381,574	6,237,651
2044	3,018,551	3,254,308	6,272,859
2045	3,175,649	3,118,545	6,294,194
2046	3,365,282	2,997,028	6,362,310
2047	3,532,378	2,849,922	6,382,300
2048	3,697,469	2,699,615	6,397,084
2049	3,909,603	2,548,012	6,457,615
2050	4,129,976	2,396,984	6,526,960
2051	4,320,470	2,248,085	6,568,555
2052	4,487,638	2,102,599	6,590,237
2053	4,626,125	1,961,415	6,587,540
2054	4,780,524	1,824,977	6,605,501
2055	4,909,796	1,693,441	6,603,237
2056	5,008,047	1,566,771	6,574,818
2057	5,089,045	1,444,859	6,533,904
2058	5,153,736	1,327,670	6,481,406
2059	5,201,494	1,215,130	6,416,624
2060	5,232,396	1,107,242	6,339,638
2061	5,243,419	1,004,076	6,247,495
2062	5,233,861	905,683	6,139,544

¹ This illustrates the projection of future benefit payments for the population as it exists on the valuation date without consideration for future hires.

ACTUARIAL ASSUMPTIONS AND METHODS

The assumptions shown below were adopted by the Board September 9, 2022 following a 2022 review of plan experience.

Interest Rate 6.80% per year compounded annually, net of investment related

expenses.

Mortality Rate 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.

Inactive Lives:

PubS-2010 Healthy Retiree mortality, adjusted by a factor of 1.150 for male retirees and unadjusted for female retirees, with generational improvements with most recent projection scale (currently Scale MP-2021).

Beneficiaries:

PubS-2010 Survivor mortality, unadjusted for male beneficiaries and adjusted by a factor of 1.150 for female beneficiaries, with generational improvements with most recent projection scale (currently Scale MP-2021).

Disabled Lives:

PubS-2010 Disabled mortality, adjusted by a factor of 1.080 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

Disability Rate See table at the end of this section. 60% of the disabilities are

assumed to be in the line of duty.

See table at the end of this section.

Termination Rate See table at the end of this section. Salary Increases

See table below.

	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	55 receive a	0% per year after age 55. Those that retire prior to age an increase of 1/12 of 3.00% for each full month since immencement upon reaching age 55.
		5% per year after the later of attainment of age 60 or resary of retirement.
Marital Status	80% of Me	mbers are assumed to be married.
Spouse's Age	Males are a	assumed to be three years older than females.
Funding Method	Projected U	Init Credit Cost Method.
Actuarial Asset Method	In the first y second year and in the factuarial in	gains and losses are smoothed over a 5-year period. year, 20% of the gain or loss is recognized. In the r 40%, in the third year 60%, in the fourth year 80%, ifth year 100% of the gain or loss is recognized. The vestment gain or loss is defined as the actual return ents minus the actuarial assumed investment return.
Funding Policy Amortization Method	Payroll met amortizatio	thod over a period ending in 2040. The initial amount is 90% of the Accrued Liability less the Value of Assets.

Payroll Growth

3.00% per year.

Administrative Expenses

Administrative expenses will be estimated as 2% of the fund's total normal cost.

Decrement Tables

% Terr	ninating	% Becom	ing Disabled	% R	etiring	% Re	tiring
During t	he Year	During	the Year	During the Y	Year (Tier 1)	During the Y	Tear (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.

Statutory Minimum Required Contribution is equal to the Normal Cost plus an amount sufficient to amortize the Unfunded Accrued Liability to achieve a 90% funding target by 2040. The required amount is adjusted for interest to year-end.

Projected Unit Credit Actuarial Cost Method (Level Percent of Compensation) is the method used to determine statutory minimum required contributions under the Plan. The use of this method involves the systematic funding of the Normal Cost (described above) and the Unfunded Accrued (Past Service) Liability. The actuarial accrued liability is the present value of accrued benefits, utilizing projected salary for active Plan Participants.

DISCUSSION OF RISK

Actuarial Standard of Practice 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 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.

• <u>Contribution Risk</u>: This risk results from the potential that actual employer contributions may deviate from actuarially determined contributions. 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. 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.

Metrics to Help Assess Risk

Below are descriptions of some metrics that can be used to help assess risk. To assist with determining the maturity of the plan, we have provided some relevant metrics in the table at the end of this section provides these metrics for the fund.

- <u>Support Ratio</u>: The support ratio is determined as the ratio of active to inactive members. This metric speaks to the maturity of the plan, with a low ratio indicating a more mature plan.
- Asset Volatility Ratio: The asset volatility ratio is determined as the ratio of the Market Value of Assets to Total Payroll. It is a measure of the impact of investment volatility on employer contributions which are paid as a percentage of payroll. Although Market Value of Asset growth that exceeds payroll growth may contribute to the financial stability of the plan, the amortization of changes in these higher asset values have a greater impact on contribution volatility as this ratio increases.
- Accrued Liability (AL) Ratio: The accrued liability ratio is the proportion of Total Accrued Liability attributable to inactive members. A higher ratio indicates a more mature plan. Mature plans will see increased risk since 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.

- <u>Funded Ratio</u>: The funded ratio is determined as the ratio of the Actuarial Value of Assets to the Total Accrued Liability. This ratio generally reflects the financial health of the plan but should not be considered in isolation since it is very sensitive to changes in actuarial methods and assumptions.
- Net Cash Flow Ratio: The net cash flow ratio is determined as the ratio of the Net Cash Flow (contributions minus benefit payments and administrative expenses) to the Market Value of Assets. Mature plans paying substantial retirement benefits resulting in small positive or negative cash flows may be more sensitive to near term investment volatility.

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 may be helpful in some situations.

RISK METRICS

Support Ratio

Total Actives	38
Total Inactives	53
Actives / Inactives	71.7%

Asset Volatility Ratio

Market Value of Assets (MVA)	31,202,655
Total Annual Payroll	3,659,691
MVA / Total Annual Payroll	852.6%

Accrued Liability (AL) Ratio

Inactive Accrued Liability	49,952,365
Total Accrued Liability	66,244,682
Inactive AL / Total AL	75.4%

Funded Ratio

Actuarial Value of Assets (AVA)	31,242,067
Total Accrued Liability	66,244,682
AVA / Total Accrued Liability	47.2%

Net Cash Flow Ratio

Net Cash Flow ¹	1,243,297
Market Value of Assets (MVA)	31,202,655
Ratio	4.0%

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

ASSETS

Changes in Market Value of Assets

Market Value of Assets as of April 30, 2021	31,616,506				
Benefit payments during fiscal year 2022 Administrative expense during fiscal year 2022 Total contributions during fiscal year 2022	(3,579,048) (13,844) 4,836,189				
Contributions Less Benefit Payments & Administrative Expenses	1,243,297				
Actual Net Investment Earnings	(1,657,148)				
Market Value of Assets as of April 30, 2022	31,202,655				
Development of Investment Gain/Loss					
Expected Investment Earnings ¹	2,014,885				
Actual Net Investment Earnings	(1,657,148)				

¹ Expected Investment Earnings = 6.25% x (31,616,506 + 0.5 x 1,243,297)

Actuarial Investment Gain/(Loss)

Gains/(Losses) Not Yet Recognized

Gams/(Losses) Not Tet Recognized							
Fiscal Year	Amounts Not Yet Recognized by Valuation Year						
Ending	Gain/(Loss)	2022	2023	2024	2025		
2019	(11,386)	(2,277)	0	0	0		
2020	(1,540,914)	(616,366)	(308,183)	0	0		
2021	5,861,429	3,516,857	2,344,572	1,172,286	0		
2022	(3,672,033)	(2,937,626)	(2,203,220)	(1,468,813)	<u>(734,407)</u>		
T-4-1		(20, 412)	(166 921)	(20(527)	(724 407)		
Total		(39,412)	(166,831)	(296,527)	(734,407)		

Development of Actuarial Value of Assets

Market Value of Assets as of April 30, 2022	31,202,655
(Gains)/Losses Not Yet Recognized	<u>39,412</u>
Actuarial Value of Assets as of April 30, 2022	31.242.067

(3,672,033)

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.

<u>Vesting (Termination)</u>

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.