

ROMEOVILLE FIREFIGHTERS' PENSION FUND

Actuarial Valuation

As of May 1, 2024 Statutory Minimum Required Contribution





November 25, 2024

Romeoville Firefighters' 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 Romeoville Firefighters' Pension Fund. The funding valuation was performed to determine whether the assets and contributions are sufficient to provide the prescribed benefits and to develop the appropriate funding requirements for the applicable plan year. Use of the results for other purposes may not be applicable and could produce significantly different results.

The valuation has been conducted in accordance with generally accepted actuarial principles and practices, including the applicable Actuarial Standards of Practice as issued by the Actuarial Standards Board, and reflects laws and regulations issued to date pursuant to the provisions of Article 4, Illinois Pension Code, as well as applicable federal laws and regulations. In our opinion, the assumptions used in this valuation, as adopted by the Firefighters' 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 Firefighters' Pension Investment Fund, plan design information as defined in Article 4 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 Romeoville Firefighters' Pension Fund. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

Respectfully submitted, Foster & Foster, Inc.

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By:

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SUMMARY OF REPORT

The regular annual actuarial valuation of the Romeoville Firefighters' Pension Fund, performed as of May 1, 2024, has been completed and the results are presented in this report. The contribution requirements are as follows:

Valuation Date	M	ay 1, 2024
Total Statutory Contribution	\$	874,399
Member Contributions (Est.)		(375,208)
Statutory Minimum Required Contribution ¹	\$	499,191

¹ This calculation is determined in accordance with Section 4-118 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 4 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 Firefighters' Pension Investment Fund.

Section 4-118 of the Illinois Pension Code provides a minimum required contribution, determined under the projected unit cost method, that is sufficient to fund the normal cost of the pension fund, or 17.5% of the salaries and wages to be paid to firefighters for the year involved, whichever is greater, plus an annual amount sufficient to bring the total assets of the pension fund up to 90% of the total actuarial liabilities of the pension fund by the end of the employer's fiscal year 2040.

A municipal or fire protection district employer may consult with its actuary if it desires to provide funding in excess of the minimum required contribution, such as through the entry age normal cost method, by using a shorter amortization period, or by using a funding schedule that amortizes 100% of the pension fund's liabilities.

Providing additional funding in excess of the minimum required contribution would reduce the total employer cost over the life of the amortization period.



CHANGES SINCE PRIOR VALUATION

PLAN CHANGES

There were no plan changes since the prior valuation.

ACTUARIAL ASSUMPTION/METHOD CHANGES SINCE PRIOR VALUATION

There were no assumption changes since the prior valuation.

There were no method changes since the prior valuation.



PRINCIPAL VALUATION RESULTS

A. PARTICIPANT DATA

В.

С.

Actives	38
Service Retirees	8
Beneficiaries	0
Disability Retirees	0
Terminated Vested Due Future Annuity	4
Terminated with Accumulated Contributions in Fund	<u>4</u>
Total	54
Total Annual Payroll	3,704,413
Annual Rate of Payments to:	
Service Retirees	428,181
Beneficiaries	0
Disability Retirees	0
Terminated Vested Due Future Annuity	118,438
Assets	
Actuarial Value (AVA)	16,248,824
Market Value (MVA)	15,925,652
Liabilities	
Present Value of Benefits (PVB)	
Actives	
Retirement Benefits	15,394,853
Death Benefits	297,351
Disability Benefits	2,418,673
Terminated Vested Benefits	865,120
Service Retirees	7,033,157
Beneficiaries	0
Disability Retirees	0
Terminated Vested Due Future Annuity	997,948
Terminated with Accumulated Contributions in Fund	<u>49,943</u>
Total	27,057,045



C. LIABILITIES (CONTINUED)

ActivesRetirement Benefits6,930,365Death Benefits127,096Disability Benefits1,037,920Terminated Vested Benefits428,818Service Retirees7,033,157Beneficiaries0Disability Retirees0Disability Retirees0Terminated Vested Due Future Annuity997,948Terminated vested Due Future Annuity997,948Terminated with Accumulated Contributions in Fund49,943Total16,605,247Normal Cost23,312Normal Cost (Retirement)570,058Normal Cost (Death)23,312Normal Cost (Centiniated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D.Amortization PaymentTotal Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824Liabilities Subject to Amortization over 16 Years0	Accrued Liability (AL)	
Death Benefits127,096Disability Benefits1,037,920Terminated Vested Benefits428,818Service Retirees7,033,157Beneficiaries0Disability Retirees0Terminated Vested Due Future Annuity997,948Terminated with Accumulated Contributions in Fund49,943Total16,605,247Normal Cost23,312Normal Cost (Retirement)570,058Normal Cost (Death)23,312Normal Cost (Terminated Vested)67,209Total67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,247Yo% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Actives	
Disability Benefits1,037,920Terminated Vested Benefits428,818Service Retirees7,033,157Beneficiaries0Disability Retirees0Terminated Vested Due Future Annuity997,948Terminated with Accumulated Contributions in Fund49,943Total16,605,247Normal Cost23,312Normal Cost (Death)23,312Normal Cost (Disability)139,658Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,247Yow Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Retirement Benefits	6,930,365
Terminated Vested Benefits428,818Service Retirees7,033,157Beneficiaries0Disability Retirees0Terminated Vested Due Future Annuity997,948Terminated with Accumulated Contributions in Fund49,943Total16,605,247Normal Cost570,058Normal Cost (Retirement)570,058Normal Cost (Death)23,312Normal Cost (Insability)139,658Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Death Benefits	127,096
Service Retirees7,033,157Beneficiaries0Disability Retirees0Terminated Vested Due Future Annuity997,948Terminated with Accumulated Contributions in Fund49,943Total16,605,247Normal Cost570,058Normal Cost (Retirement)570,058Normal Cost (Disability)139,658Normal Cost (Disability)139,658Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Disability Benefits	1,037,920
Beneficiaries0Disability Retirees0Terminated Vested Due Future Annuity997,948Terminated with Accumulated Contributions in Fund49,943Total16,605,247Normal Cost570,058Normal Cost (Retirement)570,058Normal Cost (Death)23,312Normal Cost (Death)139,658Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,247Yow Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Terminated Vested Benefits	428,818
Disability Retirees0Terminated Vested Due Future Annuity997,948Terminated with Accumulated Contributions in Fund49,943Total16,605,247Normal Cost570,058Normal Cost (Retirement)570,058Normal Cost (Death)23,312Normal Cost (Death)139,658Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,247Yow Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Service Retirees	7,033,157
Terminated Vested Due Future Annuity997,948Terminated with Accumulated Contributions in Fund49,943Total16,605,247Normal Cost570,058Normal Cost (Retirement)570,058Normal Cost (Death)23,312Normal Cost (Disability)139,658Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,247Total Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Beneficiaries	0
Terminated with Accumulated Contributions in Fund49,943 16,605,247Total16,605,247Normal Cost570,058 23,312Normal Cost (Death)23,312 139,658 Normal Cost (Disability)Normal Cost (Disability)139,658 67,209 TotalNormal Cost (Terminated Vested)67,209 800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,247 14,944,722 Actuarial Value of Assets	Disability Retirees	0
Total16,605,247Normal Cost570,058Normal Cost (Retirement)570,058Normal Cost (Death)23,312Normal Cost (Disability)139,658Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,247Total Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Terminated Vested Due Future Annuity	997,948
Normal CostS70,058Normal Cost (Retirement)570,058Normal Cost (Death)23,312Normal Cost (Disability)139,658Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. Amorrization PaymentTotal Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Terminated with Accumulated Contributions in Fund	<u>49,943</u>
Normal Cost (Retirement)570,058Normal Cost (Death)23,312Normal Cost (Disability)139,658Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. Amorrization PaymentTotal Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Total	16,605,247
Normal Cost (Death)23,312Normal Cost (Disability)139,658Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENTTotal Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Normal Cost	
Normal Cost (Disability)139,658Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENTTotal Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Normal Cost (Retirement)	570,058
Normal Cost (Terminated Vested)67,209Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,247Total Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Normal Cost (Death)	23,312
Total800,237Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,247Total Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Normal Cost (Disability)	139,658
Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) 1356,423Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,247Total Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Normal Cost (Terminated Vested)	<u>67,209</u>
Funded Ratio (AVA / AL)97.9%D. AMORTIZATION PAYMENT16,605,247Total Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Total	800,237
D. AMORTIZATION PAYMENT Total Accrued Liability 16,605,247 90% Funded Ratio Target 14,944,722 Actuarial Value of Assets 16,248,824	Unfunded Actuarial Accrued Liability (UAAL = AL - AVA) ¹	356,423
Total Accrued Liability16,605,24790% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	Funded Ratio (AVA / AL)	97.9%
90% Funded Ratio Target14,944,722Actuarial Value of Assets16,248,824	D. AMORTIZATION PAYMENT	
Actuarial Value of Assets 16,248,824	Total Accrued Liability	16,605,247
-, -, -, -, -, -, -, -, -, -, -, -, -, -	90% Funded Ratio Target	14,944,722
Liabilities Subject to Amortization over 16 Years 0	Actuarial Value of Assets	16,248,824
	Liabilities Subject to Amortization over 16 Years	0

Amortization Payment, Beginning of Year

¹ The unfunded actuarial accrued liability reflects a liability gain of \$825,183 and an asset loss of \$147,517 as of the measurement date.



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E. STATUTORY MINIMUM REQUIRED CONTRIBUTION¹

Normal Cost, Including Expense Load ²	\$ 874,399
Payment Required to Amortize UAAL Over 16 Years ²	 0
Total Statutory Contribution	\$ 874,399
Expected Member Contributions ²	 (375,208)
Statutory Minimum Required Contribution ¹	\$ 499,191

¹ This calculation is determined in accordance with Section 4-118 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 4 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 Firefighters' Pension Investment Fund.

Section 4-118 of the Illinois Pension Code provides a minimum required contribution, determined under the projected unit cost method, that is sufficient to fund the normal cost of the pension fund, or 17.5% of the salaries and wages to be paid to firefighters for the year involved, whichever is greater, plus an annual amount sufficient to bring the total assets of the pension fund up to 90% of the total actuarial liabilities of the pension fund by the end of the employer's fiscal year 2040.

A municipal or fire protection district employer may consult with its actuary if it desires to provide funding in excess of the minimum required contribution, such as through the entry age normal cost method, by using a shorter amortization period, or by using a funding schedule that amortizes 100% of the pension fund's liabilities.

Providing additional funding in excess of the minimum required contribution would reduce the total employer cost over the life of the amortization period.

² Includes one year of interest.



PROJECTION OF BENEFIT PAYMENTS¹

	Payments for	Payments for	Total
Year	Current Actives	Current Non-Actives	Payments
2025	51,911	476,332	528,243
2026	94,171	438,784	532,955
2027	122,807	454,652	577,459
2028	150,737	469,661	620,398
2029	184,835	482,745	667,580
2030	218,855	495,898	714,753
2031	269,558	509,065	778,623
2032	345,223	554,506	899,729
2033	427,901	594,866	1,022,767
2034	527,244	609,099	1,136,343
2035	640,258	623,041	1,263,299
2036	768,540	636,580	1,405,120
2037	891,921	649,576	1,541,497
2038	1,011,274	685,947	1,697,221
2039	1,126,976	697,973	1,824,949
2040	1,269,725	708,947	1,978,672
2041	1,421,684	718,655	2,140,339
2042	1,559,914	726,846	2,286,760
2043	1,717,714	765,906	2,483,620
2044	1,878,017	771,044	2,649,061
2045	2,077,583	773,860	2,851,443
2046	2,277,641	774,076	3,051,717
2047	2,502,517	771,420	3,273,937
2048	2,712,403	765,689	3,478,092
2049	2,903,487	756,702	3,660,189
2050	3,099,630	744,362	3,843,992
2051	3,316,965	728,662	4,045,627
2052	3,576,304	709,666	4,285,970
2053	3,816,871	687,555	4,504,426
2054	4,042,415	662,587	4,705,002
2055	4,263,517	635,109	4,898,626
2056	4,458,343	605,543	5,063,886
2057	4,615,644	574,357	5,190,001
2058	4,746,450	542,016	5,288,466
2059	4,855,610	508,946	5,364,556
2060	4,951,309	475,551	5,426,860
2061	5,033,462	442,143	5,475,605
2062	5,103,053	408,982	5,512,035
2063	5,158,830	376,339	5,535,169
2064	5,201,692	344,479	5,546,171

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 December 1, 2021 following a 2021 review of plan experience.

Interest Rate	7.125% per expenses.	r year compo	unded annually	y, net of inv	vestment related
Mortality Rate	improveme	Employee ments with mos		ction scale	generational (currently Scale be in the line of
	for male re generation	Healthy Retineting the second se	adjusted for fe ents with most	male retire	
	adjusted by generation	Survivor mor y a factor of 1	098 for femal ents with most	e beneficia	
	disabled m with gener	Disabled mo embers and u	unadjusted for ovements with	female dis	or of 1.178 for male abled members, nt projection scale
		ity assumptic tality improv	-	accommod	date anticipated
Retirement Age	% Retirin Year (1		% Retiring Year (T		
	Age	Rate	Age	Rate	
	50-51	12%	50-54	3%	
	52-53	15%	55	30%	
	54-55	20%	56-59	20%	
	56-59	20%	60-62	25%	

60-62

63-64

65-69

70+

25%

33%

50%

100%

63-64

65-69

70+

33%

50%

100%

Disability Rate

Sample rates included in table below. 80% of the disabilities are assumed to be in the line of duty.

% Becoming Disabled During Year	
Age	Rate
20	0.010%
25	0.016%
30	0.068%
35	0.220%
40	0.420%
45	0.650%
50	0.900%
55	1.240%
60	1.580%

Termination Rate

Sample rates included in table below.

% Terminating During Year	
Age	Rate
20	10.00%
25	8.00%
30	4.00%
35	2.50%
40	1.20%
45+	1.00%

Salary Increases

See table below.

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

Inflation

2.25%.



Cost-of-Living Adjustment	<u>Tier 1</u> : 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.
	<u>Tier 2:</u> 1.125% 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	Projected Unit Credit 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.
Funding Policy Amortization Method	The UAAL is amortized according to a Level Percentage of Payroll method over a period ending in 2040. The initial amortization amount is 90% of the Accrued Liability less the Actuarial Value of Assets.
Payroll Growth	2.75% per year.
Administrative Expenses	Administrative expenses will be estimated as 2% of the fund's total normal cost.



GLOSSARY

Total Annual Payroll	The projected annual rate of pay for the fiscal year following the valuation date of all covered members.
Present Value of Benefits	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	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	The current year's cost for benefits yet to be funded.
Market Value of Assets	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	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	The excess of the Accrued Actuarial Liability over the Actuarial Value of Assets.
Statutory Minimum Required Contribution	The amount 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)	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, using 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.

- <u>Investment Return</u>: 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.
- <u>Salary Increases</u>: 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.
- <u>Payroll Growth</u>: 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.
- <u>Demographic Assumptions</u>: 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.

To assist with determining the maturity of the plan, we have provided some relevant metrics in the table following titled "Risk Metrics".

METRICS TO HELP ASSESS RISK

Below are descriptions of some metrics that can be used to help assess risk. 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.
- <u>Asset Volatility Ratio</u>: 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.
- <u>Accrued Liability (AL) Ratio:</u> 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.
- <u>Net Cash Flow Ratio</u>: 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.

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 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 \$16,605,246. 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 may be helpful in some situations.



RISK METRICS

SUPPORT RATIO

Total Actives	38
Total Inactives	16
Actives / Inactives	237.5%
Asset Volatility Ratio	
Market Value of Assets (MVA)	15,925,652
Total Annual Payroll	3,704,413
MVA / Total Annual Payroll	429.9%
ACCRUED LIABILITY (AL) RATIO	
Inactive Accrued Liability	8,081,048
Total Accrued Liability	16,605,247
Inactive AL / Total AL	48.7%
Funded Ratio	
Actuarial Value of Assets (AVA)	16,248,824
Total Accrued Liability	16,605,247
AVA / Total Accrued Liability	97.9%
NET CASH FLOW RATIO	
Net Cash Flow ¹	517,444
Market Value of Assets (MVA)	15,925,652
Ratio	3.2%

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



ASSETS

CHANGE IN MARKET VALUE OF ASSETS

Market Value of Assets as of April 30, 2023	13,886,761
Benefit payments during fiscal year 2024	(417,459)
Administrative expense during fiscal year 2024	(16,975)
Total contributions during fiscal year 2024	<u>951,878</u>
Contributions Less Benefit Payments & Administrative Expenses	517,444
Actual Net Investment Earnings	<u>1,521,447</u>
Market Value of Assets as of April 30, 2024	15,925,652
DEVELOPMENT OF INVESTMENT GAIN/LOSS	
Expected Investment Earnings ¹	1,007,866
Actual Net Investment Earnings	<u>1,521,447</u>
Actuarial Investment Gain/(Loss)	513,581

¹ Expected Investment Earnings = 7.125% x (13,886,761 + 0.5 x 517,444)

GAINS/(LOSSES) NOT YET RECOGNIZED

Fiscal Year		Amount	s Not Yet Recognia	zed by Valuation Y	'ear
Ending	Gain/(Loss)	2024	2025	2026	2027
2021	2,247,231	449,446	0	0	0
2022	(1,760,399)	(704,160)	(352,080)	0	0
2023	(798,872)	(479,323)	(319,549)	(159,774)	0
2024	513,581	410,865	308,149	205,432	102,716
Total		(323,172)	(363,480)	45,658	102,716

DEVELOPMENT OF ACTUARIAL VALUE OF ASSETS

Market Value of Assets as of April 30, 2024	15,925,652
(Gains)/Losses Not Yet Recognized	<u>323,172</u>
Actuarial Value of Assets as of April 30, 2024	16,248,824



SUMMARY OF CURRENT PLAN

Article 4 Pension Fund	The Plan is established and administered as prescribed by "Article 4. Firefighters' Pension Fund – Municipalities 500,000 and Under" of the Illinois Pension Code.
Plan Administration	The Plan is a single employer defined benefit pension plan administered by a Board of Trustees comprised of:
	 a.) Two members appointed by the Municipality, b.) Two active Members of the Fire Department elected by the Membership, and c.) One retired Member of the Fire Department elected by the Membership.
Credited Service	Years and fractional parts of years of service (except as noted below) as a sworn Firefighter employed by the Municipality.
Salary	Annual salary, including longevity, attached to firefighter's rank, as established by the municipality appropriation ordinance, excluding overtime pay, bonus pay and holiday pay except for the base 8 hours of the 10 pensionable holidays which is included.
	For Tier 2 participants, the salary is capped at a rate of \$106,800 as of 2011, indexed annually at a rate of CPI-U, but not to exceed 3.00%.
Normal Retirement	
Date	Tier 1 : Age 50 and 20 years of Credited Service.
	Tier 2: Age 55 and 10 years of Credited Service.
Benefit	Tier 1 : 50% of annual salary attached to rank on last day of service plus 2.50% of annual salary for each year of service over 20 years, up to a maximum of 75% of salary. The minimum monthly benefit is \$1,159.27 per month.



Form of Benefit	 Tier 2: 2.50% per year of service times the average salary for the 48 consecutive months of service within the last 60 months of service in which the total salary was the highest prior to retirement times the number of years of service, up to a maximum of 75% of average salary. The minimum monthly benefit is \$1,159.27 per month. Tier 1: For married retirees, an annuity payable for the life of the
	Member; upon the death of the member, 100% of the Member's benefit payable to the spouse until death. For unmarried retirees, the normal form is a Single Life Annuity.
	Tier 2 : Same as above, but with 66 2/3% of benefit continued to spouse.
Early Retirement	
Date	Tier 1 : Age 60 and 10 years of Credited Service.
	Tier 2: Age 50 and 10 years of Credited Service.
Benefit	Tier 1 : 1.50% plus 0.10% for each year of service in excess of 10 years, times salary x service (complete years).
	Tier 2 : Normal Retirement Benefit, reduced 6.00% for each year before age 55, with no minimum benefit.
Form of Benefit	Same as Normal Retirement.
Disability Benefit	
Eligibility	Total and permanent as determined by the Board of Trustees. Seven years of service required for non-service connected disability.
Benefit Amount	A maximum of:
	a.) 65% of salary attached to the rank held by Member on last day of service, and;b.) The monthly retirement pension that the Member is entitled to receive if he or she retired immediately.
	For non-service connected disabilities, a benefit of 50% of salary attached to rank held by Member on last day of service.



Cost-of-Living Adjustment	Tier 1:
	<i>Retirees:</i> 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.
	<i>Disabled Retirees</i> : An annual increase equal to 3.00% per year of the original benefit amount beginning at age 60. Those that become disabled prior to age 60 receive an increase of 3.00% of the original benefit amount for each year since benefit commencement upon reaching age 60.
	Tier 2 : An annual increase each January 1 equal to 3.00% per year or one-half of the annual unadjusted percentage increase in the consumer price index-u for the 12 months ending with the September preceding each November 1, whichever is less, of the original pension after the attainment of age 60 or first anniversary of pension start date whichever is later.
Pre-Retirement Death Benefit	
Service Incurred	100% of salary attached to rank held by Member on last day of service.
Non-Service Incurred	 A maximum of: a.) 54% of salary attached to the rank held by Member on last day of service, and; b.) The monthly retirement pension earned by the deceased Member at the time of death, regardless of whether death occurs before or after age 50.
Vesting (Termination)	
Vesting Service Requirement	10 years.
Non-Vested Benefit	Refund of Member Contributions.
Vested Benefit	Either the termination benefit, payable upon reaching age 60 (55 for Tier 2), provided contributions are not withdrawn, or a refund of member contributions.



Termination Benefit	Based on the monthly salary attached to the Member's rank at separation from service and equals:
	Tier 1: 1.50% plus 0.10% for each year of service in excess of 10 years, times salary x service (based on complete years).
	Tier 2: 2.50% of 4-year final average salary times creditable service.
Contributions	
Employee	9.455% of Salary.
Municipality	Remaining amount necessary for payment of Normal (current year's) Cost and amortization of the accrued past service liability.

