

VILLAGE OF WINNETKA
FIREFIGHTERS' PENSION FUND

ACTUARIAL VALUATION
AS OF JANUARY 1, 2022

CONTRIBUTIONS APPLICABLE TO THE
PLAN/FISCAL YEAR ENDING DECEMBER 31, 2023

GASB 67/68 DISCLOSURE INFORMATION
AS OF DECEMBER 31, 2021



FOSTER & FOSTER
ACTUARIES AND CONSULTANTS



July 1, 2022

Mr. Timothy Sloth
Village of Winnetka Firefighters' Pension Fund

Re: Actuarial Valuation Report (including GASB Statements No. 67 and No. 68) – Village of Winnetka Firefighters' Pension Fund

Dear Mr. Sloth:

We are pleased to present to the Village this report of the annual actuarial valuation of the Village of Winnetka Firefighters' Pension Fund. Included are the related results for GASB Statements No. 67 and No. 68. 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. The calculation of the liability for GASB results was performed for the purpose of satisfying the requirements of GASB Statements No. 67 and No. 68. Use of the results for other purposes may not be applicable and could produce significantly different results.

The valuations have 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 reflect laws and regulations issued to date pursuant to the provisions of Article 4, Illinois Pension Code, as well as applicable federal laws and regulations. In our opinion, the assumptions used in this valuation, as adopted by the Board of Trustees, represent reasonable expectations of anticipated plan experience. Future actuarial measurements may differ significantly from the current measurements presented in this report for a variety of reasons including: changes in applicable laws, changes in plan provisions, changes in assumptions, or plan experience differing from expectations. Due to the limited scope of the valuations, 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 valuations, 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.

The total pension liability, net pension liability, and certain sensitivity information shown in the GASB results are based on an actuarial valuation performed as of the valuation date.

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.

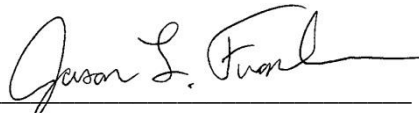
The undersigned are familiar with the immediate and long-term aspects of pension valuations and meet the Qualification Standards of the American Academy of Actuaries necessary to render the actuarial opinions contained herein. All of the sections of this report are considered an integral part of the 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 Winnetka, nor does anyone at Foster & Foster, Inc. act as a member of the Board of Trustees of the Village of Winnetka Firefighters' Pension Fund. Thus, there is no relationship existing that might affect our capacity to prepare and certify this actuarial report.

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

Respectfully submitted,

Foster & Foster, Inc.

By: 
Jason L. Franken, 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 Winnetka Firefighters' Pension Fund, performed as of January 1, 2022, has been completed and the results are presented in this report. The contribution amounts set forth herein are applicable to the plan/fiscal year ended December 31, 2023.

The contribution requirements, compared with those set forth in the January 1, 2021 actuarial report, are as follows:

Valuation Date	1/1/2022	1/1/2021
Applicable to Fiscal Year Ending	<u>12/31/2023</u>	<u>12/31/2022</u>
Total Recommended Contribution	\$1,826,721	\$2,198,406
% of Projected Annual Payroll	77.0%	83.3%
Member Contributions (Est.)	(224,434)	(249,394)
% of Projected Annual Payroll	(9.5%)	(9.5%)
Village Recommended Contribution	1,602,287	1,949,012
% of Projected Annual Payroll	67.5%	73.8%

As you can see, the Total Recommended Contribution shows a decrease when compared to the results determined in the January 1, 2021 actuarial valuation report. The decrease is attributable to favorable plan experience and changes to the actuarial assumptions and amortization method.

Plan experience was favorable overall on the basis of the plan's actuarial assumptions. Sources of favorable experience included an investment return of 10.49% (Actuarial Asset Basis) which exceeded the 6.25% assumption and more turnover than expected. These gains were offset in part by losses associated with more retirements than expected and lower than expected inactive mortality.

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

Based on the results of the 2021 experience study performed for the Illinois Firefighters' Pension Investment Fund, the following assumption changes were made:

- Updated mortality, retirement, and termination rate tables.
- Updated assumed salary increase rates.
- Reduced assumed payroll growth rate from 3.50% to 3.25%.
- Reduced the inflation assumption of 2.50% to 2.25%.

In addition, the interest rate was increased from 6.25% to 6.75% to reflect the movement to the new investment portfolio under the Illinois Firefighters' Pension Investment Fund.

The amortization of the unfunded liability will move to an open methodology amortized over 15 years.

COMPARATIVE SUMMARY OF PRINCIPAL VALUATION RESULTS

	New Asmp/Mthd <u>1/1/2022</u>	Old Asmp/Mthd <u>1/1/2022</u>	<u>1/1/2021</u>
A. Participant Data			
Number Included			
Actives	21	21	24
Service Retirees	26	26	23
Beneficiaries	8	8	8
Disability Retirees	2	2	2
Terminated Vested	<u>4</u>	<u>4</u>	<u>3</u>
Total	61	61	60
Total Annual Payroll	\$2,373,707	\$2,373,707	\$2,674,991
Payroll Under Assumed Ret. Age	2,373,707	2,373,707	2,637,699
Annual Rate of Payments to:			
Service Retirees	2,170,053	2,170,053	1,930,430
Beneficiaries	245,283	245,283	245,283
Disability Retirees	107,656	107,656	106,968
Terminated Vested	16,040	16,040	11,011
B. Assets			
Actuarial Value	36,148,063	36,148,063	33,439,312
Market Value	39,436,864	39,436,864	36,060,701
C. Liabilities			
Present Value of Benefits			
Actives			
Retirement Benefits	17,536,750	19,133,569	20,612,808
Disability Benefits	1,697,194	1,991,229	2,103,851
Death Benefits	199,391	240,234	270,994
Vested Benefits	473,469	511,011	649,079
Service Retirees	30,965,631	32,743,640	29,088,568
Beneficiaries	1,895,227	2,005,565	2,065,766
Disability Retirees	1,600,306	1,712,378	1,706,676
Terminated Vested	<u>56,127</u>	<u>64,073</u>	<u>45,944</u>
Total	54,424,095	58,401,699	56,543,686

C. Liabilities - (Continued)	New Asmp/Mthd <u>1/1/2022</u>	Old Asmp/Mthd <u>1/1/2022</u>	<u>1/1/2021</u>
Present Value of Future Salaries	23,756,719	25,756,043	27,636,991
Present Value of Future Member Contributions	2,246,198	2,435,234	2,613,077
Normal Cost (Retirement)	495,807	566,043	627,693
Normal Cost (Disability)	98,950	113,421	121,239
Normal Cost (Death)	13,386	16,600	20,101
Normal Cost (Vesting)	<u>28,584</u>	<u>29,981</u>	<u>34,527</u>
Total Normal Cost	636,727	726,045	803,560
Present Value of Future Normal Costs	5,834,931	7,208,831	7,737,356
Accrued Liability (Retirement)	12,984,915	13,485,373	14,547,374
Accrued Liability (Disability)	754,924	835,570	888,043
Accrued Liability (Death)	62,023	58,700	69,263
Accrued Liability (Vesting)	270,011	287,569	394,696
Accrued Liability (Inactives)	<u>34,517,291</u>	<u>36,525,656</u>	<u>32,906,954</u>
Total Actuarial Accrued Liability	48,589,164	51,192,868	48,806,330
Unfunded Actuarial Accrued Liability (UAAL)	12,441,101	15,044,805	15,367,018
Funded Ratio (AVA / AL)	74.4%	70.6%	68.5%

	New Asmp/Mthd <u>1/1/2022</u>	Old Asmp/Mthd <u>1/1/2022</u>	<u>1/1/2021</u>
D. Actuarial Present Value of Accrued Benefits			
Vested Accrued Benefits			
Inactives	34,517,291	36,525,656	32,906,954
Actives	6,117,492	6,566,917	6,678,563
Member Contributions	<u>2,381,817</u>	<u>2,381,817</u>	<u>2,718,090</u>
Total	43,016,600	45,474,390	42,303,607
Non-vested Accrued Benefits	<u>316,159</u>	<u>285,680</u>	<u>856,481</u>
Total Present Value Accrued Benefits	43,332,759	45,760,070	43,160,088
Funded Ratio (MVA / PVAB)	91.0%	86.2%	83.6%
Increase (Decrease) in Present Value of Accrued Benefits Attributable to:			
Plan Amendments	0	0	
Assumption Changes	(2,427,311)	0	
Plan Experience	0	2,477,524	
Benefits Paid	0	(2,497,016)	
Interest	0	2,619,474	
Other	<u>0</u>	<u>0</u>	
Total	(2,427,311)	2,599,982	

	New Asmp/Mthd	Old Asmp/Mthd	
Valuation Date	1/1/2022	1/1/2022	1/1/2021
Applicable to Fiscal Year Ending	<u>12/31/2023</u>	<u>12/31/2023</u>	<u>12/31/2022</u>

E. Pension Cost

Normal Cost ¹	\$679,706	\$771,423	\$853,783
% of Total Annual Payroll ¹	28.7	32.5	32.4
Administrative Expenses ¹	40,430	40,241	45,161
% of Total Annual Payroll ¹	1.7	1.7	1.7
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 15 years (as of 1/1/2022) ¹	1,106,585	1,272,215	1,299,462
% of Total Annual Payroll ¹	46.6	53.6	49.2
Total Recommended Contribution	1,826,721	2,083,879	2,198,406
% of Total Annual Payroll ¹	77.0	87.8	83.3
Expected Member Contributions ¹	(224,434)	(224,434)	(249,394)
% of Total Annual Payroll ¹	(9.5)	(9.5)	(9.5)
Expected Village Contribution	1,602,287	1,859,445	1,949,012
% of Total Annual Payroll ¹	67.5	78.3	73.8

F. Past Contributions

Plan Years Ending:	<u>12/31/2021</u>
Total Recommended Contribution	2,231,611
Village Requirement	1,991,435
Actual Contributions Made:	
Members (excluding buyback)	240,176
Village	<u>1,385,927</u>
Total	1,626,103

G. Net Actuarial (Gain)/Loss (486,048)

¹ Contributions developed as of 1/1/2022 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>
2022	12,441,101
2023	12,174,290
2024	11,913,201
2027	11,163,052
2031	10,235,810
2034	9,591,283
2037	8,987,341

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

		<u>Actual</u>	<u>Assumed</u>
Year Ended	12/31/2021	4.99%	5.46%
Year Ended	12/31/2020	4.07%	5.28%
Year Ended	12/31/2019	3.39%	5.03%
Year Ended	12/31/2018	3.50%	4.69%
Year Ended	12/31/2017	5.83%	4.22%

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

		<u>Actual MVA</u>	<u>Actual AVA</u>	<u>Assumed</u>
Year Ended	12/31/2021	11.59%	10.49%	6.25%
Year Ended	12/31/2020	15.16%	9.51%	6.25%
Year Ended	12/31/2019	8.60%	6.58%	6.25%
Year Ended	12/31/2018	3.00%	6.37%	6.25%
Year Ended	12/31/2017	13.08%	7.79%	6.25%

DEVELOPMENT OF JANUARY 1, 2022 AMORTIZATION PAYMENT

(1)	Unfunded Actuarial Accrued Liability as of January 1, 2021	\$15,367,018
(2)	Sponsor Normal Cost developed as of January 1, 2021	554,166
(3)	Expected administrative expenses for the year ended December 31, 2021	42,504
(4)	Expected interest on (1), (2) and (3)	996,402
(5)	Sponsor contributions to the System during the year ended December 31, 2021	1,385,927
(6)	Expected interest on (5)	43,310
(7)	Expected Unfunded Actuarial Accrued Liability as of December 31, 2021, (1)+(2)+(3)+(4)-(5)-(6)	15,530,853
(8)	Change to UAAL due to Assumption/Method Change	(2,603,704)
(9)	Change to UAAL due to Actuarial (Gain)/Loss	(486,048)
(10)	Unfunded Accrued Liability as of January 1, 2022	12,441,101
(11)	UAAL Subject to Amortization (100% AAL less Actuarial Assets)	12,441,101

<u>Date</u> <u>Established</u>	<u>Years</u> <u>Remaining</u>	<u>1/1/2022</u> <u>Amount</u>	<u>Amortization</u> <u>Amount</u>
1/1/2022	15	12,441,101	1,036,614

DETAILED ACTUARIAL (GAIN)/LOSS ANALYSIS

(1) Unfunded Actuarial Accrued Liability (UAAL) as of January 1, 2021	\$15,367,018
(2) Expected UAAL as of January 1, 2022	15,530,853
(3) Summary of Actuarial (Gain)/Loss, by component:	
Investment Return (Actuarial Asset Basis)	(1,401,210)
Salary Increases	120,175
Active Decrements	358,087
Inactive Mortality	291,126
Other	<u>145,774</u>
Change in UAAL due to (Gain)/Loss	(486,048)
Change to UAAL due to Assumption/Method Change	<u>(2,603,704)</u>
(4) Actual UAAL as of January 1, 2022	\$12,441,101

RECONCILIATION OF CHANGES IN CONTRIBUTION REQUIREMENT

(1) Contribution Determined as of January 1, 2021	\$ 1,949,012
(2) Summary of Contribution Impact by component:	
Change in Normal Cost	(82,360)
Change in Assumed Administrative Expense	(4,920)
Investment Return (Actuarial Asset Basis)	(118,489)
Salary Increases	10,162
New Entrants	-
Active Decrements	30,280
Inactive Mortality	24,618
Contributions (More) or Less than Recommended	52,803
Increase in Amortization Payment Due to Payroll Growth Assumption	45,481
Application of Open Amortization Method	(69,866)
Change in Expected Member Contributions	24,960
Assumption Change	(257,158)
Other	<u>(2,236)</u>
Total Change in Contribution	(346,725)
(3) Contribution Determined as of January 1, 2022	\$1,602,287

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.

	New Asmp/Mthd	Old Asmp/Mthd	
Valuation Date	1/1/2022	1/1/2022	1/1/2021
Applicable to Fiscal Year Ending	<u>12/31/2023</u>	<u>12/31/2023</u>	<u>12/31/2022</u>
Actuarial Accrued Liability (PUC)	47,586,956	50,390,697	48,141,709
Actuarial Value of Assets	<u>36,148,063</u>	<u>36,148,063</u>	<u>33,439,312</u>
Unfunded Actuarial Accrued Liability (UAAL)	11,438,893	14,242,634	14,702,397
UAAL Subject to Amortization	6,680,197	9,203,564	9,888,226
Normal Cost ¹	\$781,810	\$847,632	\$925,170
% of Total Annual Payroll ¹	32.9	35.7	35.1
Administrative Expenses ¹	40,430	40,241	45,161
% of Total Annual Payroll ¹	1.7	1.7	1.7
Payment Required to Amortize Unfunded Actuarial Accrued Liability over 19 years (as of 1/1/2022) ¹	498,297	644,998	666,278
% of Total Annual Payroll ¹	21.0	27.2	25.2
Total Required Contribution	1,320,537	1,532,871	1,636,609
% of Total Annual Payroll ¹	55.6	64.6	62.0
Expected Member Contributions ¹	(224,434)	(224,434)	(249,394)
% of Total Annual Payroll ¹	(9.5)	(9.5)	(9.5)
Expected Village Contribution	1,096,103	1,308,437	1,387,215
% of Total Annual Payroll ¹	46.1	55.1	52.5

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 1/1/2022 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
2022	44,487	2,503,844	2,548,331
2023	123,616	2,539,024	2,662,640
2024	209,188	2,576,636	2,785,824
2025	309,891	2,610,950	2,920,841
2026	416,967	2,650,185	3,067,152
2027	520,524	2,678,968	3,199,492
2028	622,198	2,703,053	3,325,251
2029	716,845	2,721,978	3,438,823
2030	815,111	2,735,359	3,550,470
2031	931,809	2,742,920	3,674,729
2032	1,047,389	2,744,147	3,791,536
2033	1,159,197	2,738,434	3,897,631
2034	1,269,530	2,725,800	3,995,330
2035	1,385,325	2,705,648	4,090,973
2036	1,515,730	2,677,639	4,193,369
2037	1,641,154	2,641,485	4,282,639
2038	1,754,069	2,596,887	4,350,956
2039	1,855,373	2,569,719	4,425,092
2040	1,962,437	2,509,164	4,471,601
2041	2,067,313	2,439,568	4,506,881
2042	2,179,629	2,360,953	4,540,582
2043	2,285,650	2,273,505	4,559,155
2044	2,408,246	2,188,459	4,596,705
2045	2,541,535	2,084,685	4,626,220
2046	2,656,303	1,973,982	4,630,285
2047	2,787,127	1,857,511	4,644,638
2048	2,902,619	1,741,647	4,644,266
2049	2,994,083	1,618,065	4,612,148
2050	3,077,388	1,493,587	4,570,975
2051	3,166,470	1,369,856	4,536,326
2052	3,241,996	1,248,534	4,490,530
2053	3,303,703	1,131,247	4,434,950
2054	3,352,920	1,019,463	4,372,383
2055	3,391,829	914,256	4,306,085
2056	3,420,154	816,503	4,236,657
2057	3,439,093	726,754	4,165,847
2058	3,447,531	645,226	4,092,757
2059	3,446,203	571,898	4,018,101
2060	3,435,289	506,430	3,941,719
2061	3,415,094	448,284	3,863,378

ACTUARIAL ASSUMPTIONS AND METHODS

Interest Rate	6.75% per year compounded annually, net of investment related expenses.
Mortality Rate	<p>Active Lives: PubS-2010 Employee mortality, unadjusted, with generational improvements with the most recent projection scale (currently Scale MP-2021). 20% of active deaths are assumed to be in the line of duty.</p> <p>Inactive Lives: PubS-2010 Healthy Retiree mortality, adjusted by a factor of 1.081 for male retirees and unadjusted for female retirees, with generational improvements with the most recent projection scale (currently Scale MP-2021).</p> <p>Beneficiaries: PubS-2010 Survivor mortality, unadjusted for male beneficiaries and adjusted by a factor of 1.098 for female beneficiaries, with generational improvements with the most recent projection scale (currently Scale MP-2021).</p> <p>Disabled Lives: PubS-2010 Disabled mortality, adjusted by a factor of 1.178 for male disabled members and unadjusted for female disabled members, with generational improvements with the most recent projection scale (currently Scale MP-2021).</p> <p>The mortality assumptions sufficiently accommodate anticipated future mortality improvements.</p>
Retirement Age	See table later in this section. This is based on a 2021 experience study performed for the Illinois Firefighters' Pension Investment Fund.
Disability Rate	See table later in this section. 80% of the disabilities are assumed to be in the line of duty. This is based on a 2021 experience study performed for the Illinois Firefighters' Pension Investment Fund.
Termination Rate	See table later in this section. This is based on a 2021 experience study performed for the Illinois Firefighters' Pension Investment Fund.
Inflation	2.25%.

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: 1.125% per year after the later of attainment of age 60 or first anniversary of retirement.

Salary Increases See table below, inclusive of inflation. This is based on a 2021 experience study performed for the Illinois Firefighters’ Pension Investment Fund.

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%

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 an open period of 15 years. 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)	
Age	Rate	Age	Rate	Age	Rate	Age	Rate
20	10.00%	20	0.010%	50-51	12%	50-54	3%
25	8.00%	25	0.016%	52-53	15%	55	30%
30	4.00%	30	0.068%	54-55	20%	56-59	20%
35	2.50%	35	0.220%	56-59	20%	60-62	25%
40	1.20%	40	0.420%	60-62	25%	63-64	33%
45+	1.00%	45	0.650%	63-64	33%	65-69	50%
		50	0.900%	65-69	50%	70+	100%
		55	1.240%	70+	100%		
		60	1.580%				

GLOSSARY

Total Annual Payroll is the projected annual rate of pay for the fiscal year following the valuation date of all covered members.

Present Value of Benefits is the single sum value on the valuation date of all future benefits to be paid to current Members, Retirees, Beneficiaries, Disability Retirees and Vested Terminations.

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

Unfunded Accrued Liability is a liability which arises when a pension plan is initially established or improved and such establishment or improvement is applicable to all years of past service.

Total Recommended Contribution is equal to the Normal Cost plus an amount sufficient to amortize the Unfunded Accrued Liability over a 15-year rolling amortization period each year. 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. The unfunded accrued liability equals the total accrued liability less the actuarial value of assets.
- (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 65.7% on January 1, 2019 to 52.5% on January 1, 2022, 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 increased from 62.0% on January 1, 2019 to 74.4% on January 1, 2022, despite the shortfall in Actual Sponsor Contributions. The increase is due mainly to plan experience and adjustments to plan assumptions.
- 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, decreased from -0.8% on January 1, 2019 to -1.9% on January 1, 2022. The current Net Cash Flow Ratio of -1.9% indicates that contributions are not currently covering the plan's benefit payments and administrative expenses.

It is important to note that the actuary has identified the risks above as the most significant risks based on the characteristics of the plan and the nature of the project, however, it is not an exhaustive list of potential risks that could be considered. Additional advanced modeling, as well as the identification of additional risks, can be provided at the request of the audience addressed on page 2 of this report.

PLAN MATURITY MEASURES AND OTHER RISK METRICS

	<u>1/1/2022</u>	<u>1/1/2021</u>	<u>1/1/2020</u>	<u>1/1/2019</u>
<u>Support Ratio</u>				
Total Actives	21	24	24	23
Total Inactives	40	36	36	35
Actives / Inactives	52.5%	66.7%	66.7%	65.7%

Asset Volatility Ratio

Market Value of Assets (MVA)	39,436,864	36,060,701	31,451,349	29,212,617
Total Annual Payroll	2,373,707	2,674,991	2,571,425	2,428,840
MVA / Total Annual Payroll	1,661.4%	1,348.1%	1,223.1%	1,202.7%

Accrued Liability (AL) Ratio

Inactive Accrued Liability	34,517,291	32,906,954	33,164,053	33,765,302
Total Accrued Liability	48,589,164	48,806,330	47,493,441	46,829,159
Inactive AL / Total AL	71.0%	67.4%	69.8%	72.1%

Funded Ratio

Actuarial Value of Assets (AVA)	36,148,063	33,439,312	30,675,533	29,034,471
Total Accrued Liability	48,589,164	48,806,330	47,493,441	46,829,159
AVA / Total Accrued Liability	74.4%	68.5%	64.6%	62.0%

Net Cash Flow Ratio

Net Cash Flow ¹	(758,706)	(147,230)	(259,930)	(235,156)
Market Value of Assets (MVA)	39,436,864	36,060,701	31,451,349	29,212,617
Ratio	-1.9%	-0.4%	-0.8%	-0.8%

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

STATEMENT OF FIDUCIARY NET POSITION
December 31, 2021

<u>ASSETS</u>	MARKET VALUE
Cash and Cash Equivalents:	
Checking Account	854,862
Certificates of Deposit	302,213
Cash	674,408
Total Cash and Equivalents	1,831,483
Receivables:	
Accrued Past Due Interest	40,173
Total Receivable	40,173
Investments:	
Corporate Bonds	2,782,325
U.S. Gov't and Agency Obligations	8,926,674
Insurance Company Contracts	1,883,646
Stocks	6,144,329
Mutual Funds	17,828,234
Total Investments	37,565,208
Total Assets	39,436,864
<u>LIABILITIES</u>	
Total Liabilities	0
Net Assets:	
Active and Retired Members' Equity	39,436,864
NET POSITION RESTRICTED FOR PENSIONS	39,436,864
TOTAL LIABILITIES AND NET ASSETS	39,436,864

STATEMENT OF CHANGES IN FIDUCIARY NET POSITION
FOR THE YEAR ENDED December 31, 2021
Market Value Basis

ADDITIONS

Contributions:

Member	240,176
Miscellaneous Member Revenue	150,081
Village	1,385,927

Total Contributions 1,776,184

Investment Income:

Net Realized Gain (Loss)	3,319,990	
Unrealized Gain (Loss)	(1,278,962)	
Net Increase in Fair Value of Investments		2,041,028
Interest & Dividends		2,201,511
Less Investment Expense ¹		(107,670)

Net Investment Income 4,134,869

Total Additions 5,911,053

DEDUCTIONS

Distributions to Members:

Benefit Payments	2,411,979
Refund of Contributions/Transfers	85,037

Total Distributions 2,497,016

Administrative Expenses 37,874

Total Deductions 2,534,890

Net Increase in Net Position 3,376,163

NET POSITION RESTRICTED FOR PENSIONS

Beginning of the Year	36,060,699
Adjustment to beginning of year	2

End of the Year 39,436,864

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

ACTUARIAL ASSET VALUATION

December 31, 2021

Development of Actuarial Value of Assets

Market Value of Assets, 12/31/2021	39,436,864
(Gains)/Losses Not Yet Recognized	<u>(3,288,801)</u>
Actuarial Value of Assets, 12/31/2021	36,148,063
12/31/2021 Limited Actuarial Assets:	36,148,063

Development of Investment Gain/Loss

Market Value of Assets, 12/31/2020	36,060,701
Contributions Less Benefit Payments & Administrative Expenses	(758,706)
Expected Investment Earnings ¹	2,230,084
Actual Net Investment Earnings	<u>4,134,869</u>
2021 Actuarial Investment Gain/(Loss)	1,904,785

¹ Expected Investment Earnings = 6.25% x (36,060,701 + 0.5 x -758,706)

Gains/(Losses) Not Yet Recognized

Plan Year Ending	Gain/(Loss)	Amounts Not Yet Recognized by Valuation Year				
		2021	2022	2023	2024	2025
12/31/2018	(925,956)	(185,191)	0	0	0	0
12/31/2019	682,199	272,880	136,440	0	0	0
12/31/2020	2,795,474	1,677,284	1,118,190	559,095	0	0
12/31/2021	1,904,785	1,523,828	1,142,871	761,914	380,957	0
Total		3,288,801	2,397,501	1,321,009	380,957	0

Development of Asset Returns

(A) 12/31/2020 Actuarial Assets:	33,439,312
(I) Net Investment Income:	
1. Interest and Dividends	2,201,511
2. Realized Gains (Losses)	3,319,990
3. Change in Actuarial Value	(1,946,374)
4. Investment Expenses	<u>(107,670)</u>
Total	3,467,457
(B) 12/31/2021 Actuarial Assets:	36,148,063
Actuarial Asset Rate of Return = (2 x I) / (A + B - I):	10.49%
Market Value of Assets Rate of Return:	11.59%
Actuarial Gain/(Loss) due to Investment Return (Actuarial Asset Basis)	1,401,210

CHANGES IN NET ASSETS AVAILABLE FOR BENEFITS
December 31, 2021
Actuarial Asset Basis

INCOME		
Contributions:		
Member	240,176	
Miscellaneous Member Revenue	150,081	
Village	1,385,927	
Total Contributions		1,776,184
Earnings from Investments		
Interest & Dividends	2,201,511	
Net Realized Gain (Loss)	3,319,990	
Change in Actuarial Value	(1,946,374)	
Total Earnings and Investment Gains		3,575,127
EXPENSES		
Administrative Expenses:		
Investment Related ¹	107,670	
Other	37,874	
Total Administrative Expenses		145,544
Distributions to Members:		
Benefit Payments	2,411,979	
Refund of Contributions/Transfers	85,037	
Total Distributions		2,497,016
Change in Net Assets for the Year		2,708,751
Net Assets Beginning of the Year		33,439,312
Net Assets End of the Year ²		36,148,063

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

² Net Assets may be limited for actuarial consideration.

STATISTICAL DATA

	<u>1/1/2022</u>	<u>1/1/2021</u>	<u>1/1/2020</u>	<u>1/1/2019</u>
<u>Actives - Tier 1</u>				
Number	12	14	14	14
Average Current Age	48.2	48.3	47.3	46.3
Average Age at Employment	27.3	28.0	28.0	28.0
Average Past Service	20.9	20.3	19.3	18.3
Average Annual Salary	\$129,429	\$121,578	\$117,371	\$114,788
<u>Actives - Tier 2</u>				
Number	9	10	10	9
Average Current Age	33.5	36.5	35.2	35.4
Average Age at Employment	29.4	31.5	31.1	31.3
Average Past Service	4.1	5.0	4.1	4.1
Average Annual Salary	\$91,174	\$93,560	\$89,319	\$91,312
<u>Service Retirees</u>				
Number	26	23	23	23
Average Current Age	69.1	69.5	68.5	67.5
Average Annual Benefit	\$83,464	\$83,932	\$81,567	\$79,493
<u>Beneficiaries</u>				
Number	8	8	9	9
Average Current Age	52.1	51.1	55.0	79.6
Average Annual Benefit	\$30,660	\$30,660	\$30,200	\$39,339
<u>Disability Retirees</u>				
Number	2	2	2	2
Average Current Age	57.4	56.4	55.4	54.4
Average Annual Benefit	\$53,828	\$53,484	\$53,140	\$53,167
<u>Terminated Vested</u>				
Number	4	3	2	1
Average Current Age	32.8	33.0	34.2	36.8
Average Annual Benefit ¹	\$8,020	\$11,011	\$11,011	N/A

¹ Average Annual Benefit for Terminated Vested members reflects the benefit for members entitled to a future annual benefit from the plan.

AGE AND SERVICE DISTRIBUTION

PAST SERVICE

AGE	0	1	2	3	4	5-9	10-14	15-19	20-24	25-29	30+	Total
15 - 19	0	0	0	0	0	0	0	0	0	0	0	0
20 - 24	0	0	0	0	0	0	0	0	0	0	0	0
25 - 29	1	0	0	0	0	0	0	0	0	0	0	1
30 - 34	1	1	0	2	1	0	0	0	0	0	0	5
35 - 39	0	0	0	0	0	1	0	0	0	0	0	1
40 - 44	0	0	0	1	0	0	4	1	0	0	0	6
45 - 49	0	0	0	0	0	0	0	0	4	0	0	4
50 - 54	0	0	0	0	0	0	0	1	1	0	0	2
55 - 59	0	0	0	0	0	0	0	0	0	0	0	0
60 - 64	0	0	0	0	0	0	0	0	0	0	2	2
65+	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	1	0	3	1	1	4	2	5	0	2	21

VALUATION PARTICIPANT RECONCILIATION

1. Active lives

a. Number in prior valuation 1/1/2021	24
b. Terminations	
i. Vested (partial or full) with deferred benefits	(1)
ii. Non-vested or full lump sum distribution received	(1)
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	<u>(3)</u>
f. Continuing participants	19
g. New entrants	<u>2</u>
h. Total active life participants in valuation	21

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	23	8	2	3	36
Retired	3	0	0	0	3
Vested Deferred	0	0	0	1	1
Death, With Survivor	0	0	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	26	8	2	4	40

SUMMARY OF CURRENT PLAN

Article 4 Pension Fund

The Plan is established and administered as prescribed by “Article 4. Firefighters’ Pension Fund – Municipalities 500,000 and Under” of the Illinois Pension Code.

Plan Administration

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

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

Credited Service

Years and fractional parts of years of service (except as noted below) as a sworn Firefighter employed by the Municipality.

Salary

Annual salary, including longevity, attached to firefighter’s rank, as established by the municipality appropriation ordinance, excluding overtime pay, bonus pay and holiday pay except for the base 8 hours of the 10 pensionable holidays which is included.

For Tier 2 participants, the salary is capped at a rate of \$106,800 as of 2011, indexed annually at a rate of CPI-U, but not to exceed 3.00%.

Normal Retirement

Date

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

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

Benefit

Tier 1: 50% of annual salary attached to rank on last day of service plus 2.50% of annual salary for each year of service over 20 years, up to a maximum of 75% of salary. The minimum monthly benefit is \$1,159.27 per month.

Tier 2: 2.50% per year of service times the average salary for the 48 consecutive months of service within the last 60 months of service in which the total salary was the highest prior to retirement times the number of years of service, up to a maximum of 75% of average salary. The minimum monthly benefit is \$1,159.27 per month.

Form of Benefit

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

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

Early Retirement

Date	Tier 1: Age 60 and 10 years of Credited Service. Tier 2: Age 50 and 10 years of Credited Service.
Benefit	Tier 1: 1.50% plus 0.10% for each year of service in excess of 10 years, times salary x service (complete years). Tier 2: Normal Retirement Benefit, reduced 6.00% for each year before age 55, with no minimum benefit.
Form of Benefit	Same as Normal Retirement.

Disability Benefit

Eligibility	Total and permanent as determined by the Board of Trustees. Seven years of service required for non-service connected disability.
Benefit Amount	A maximum of:

- a.) 65% of salary attached to the rank held by Member on last day of service, and;
- b.) The monthly retirement pension that the Member is entitled to receive if he or she retired immediately.

For non-service connected disabilities, a benefit of 50% of salary attached to rank held by Member on last day of service.

Cost-of-Living Adjustment

Tier 1:

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

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

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

Pre-Retirement Death Benefit

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

Vesting (Termination)

Vesting Service Requirement	10 years.
Non-Vested Benefit	Refund of Member Contributions.
Vested Benefit	Either the termination benefit, payable upon reaching age 60 (55 for Tier 2), provided contributions are not withdrawn, or a refund of member contributions.
Termination Benefit	Based on the monthly salary attached to the Member's rank at separation from service and equals: Tier 1: 1.50% plus 0.10% for each year of service in excess of 10 years, times salary x service (based on complete years). Tier 2: 2.50% of 4-year final average salary times creditable service.

Contributions

Employee	9.455% of Salary.
Municipality	Remaining amount necessary for payment of Normal (current year's) Cost and amortization of the accrued past service liability.

SUMMARY

Valuation Date	1/1/2022	1/1/2021
Measurement Date	12/31/2021	12/31/2020
Plan Membership:		
Inactives Currently Receiving Benefits	36	33
Inactives Not Yet Receiving Benefits	4	3
Active Plan Members	<u>21</u>	<u>24</u>
Total	61	60
Covered Payroll	\$ 2,540,201	\$ 2,674,991
Net Pension Liability		
Total Pension Liability	\$ 48,348,347	\$ 48,522,264
Plan Fiduciary Net Position	<u>39,436,864</u>	<u>36,060,699</u>
Net Pension Liability	\$ 8,911,483	\$ 12,461,565
Plan Fiduciary Net Position		
As a Percentage of Total Pension Liability	81.57%	74.32%
Net Pension Liability		
As a Percentage of Covered Payroll	350.82%	465.85%
Total Pension Expense	\$ (164,768)	\$ 1,042,954
Development of Single Discount Rate		
Single Discount Rate	6.75%	6.25%
Long-Term Expected Rate of Return	6.75%	6.25%
High-quality Municipal Bond Rate	2.25%	1.93%
Number of Years Future Benefit Payments		
Are Expected to be Paid	99	99

SCHEDULE OF CHANGES IN NET PENSION LIABILITY
PLAN AND VILLAGE REPORTING

GASB 68 Reporting Period Ending	12/31/2021	12/31/2020
Measurement Date	12/31/2021	12/31/2020
Total Pension Liability		
Service Cost	819,686	804,634
Interest	3,005,840	2,930,142
Changes of Benefit Terms	-	-
Differences Between Expected and Actual Experience	944,049	(144,597)
Changes of Assumptions	(2,596,557)	-
Contributions - Buy Back	150,081	-
Benefit Payments, Including Refunds of Employee Contributions	(2,497,016)	(2,291,182)
Net Change in Total Pension Liability	(173,917)	1,298,997
Total Pension Liability - Beginning	48,522,264	47,223,267
Total Pension Liability - Ending (a)	\$ 48,348,347	\$ 48,522,264
 Plan Fiduciary Net Position		
Contributions - Employer	1,385,927	1,929,099
Contributions - Employee	240,176	257,357
Contributions - Buy Back	150,081	-
Net Investment Income	4,134,869	4,756,581
Benefit Payments, Including Refunds of Employee Contributions	(2,497,016)	(2,291,182)
Administrative Expense	(37,874)	(42,504)
Net Change in Plan Fiduciary Net Position	3,376,163	4,609,351
Plan Fiduciary Net Position - Beginning	36,060,699	31,451,348
Adjustment to beginning of year	2	-
Plan Fiduciary Net Position - Ending (b)	\$ 39,436,864	\$ 36,060,699
 Net Pension Liability - Ending (a) - (b)	\$ 8,911,483	\$ 12,461,565
 Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	81.57%	74.32%
 Covered Payroll	\$ 2,540,201	\$ 2,674,991
Net Pension Liability as a Percentage of Covered Payroll	350.82%	465.85%

STATEMENT OF CHANGES IN NET PENSION LIABILITY
VILLAGE REPORTING

	Increase (Decrease)		
	Total Pension Liability	Plan Fiduciary Net Position	Net Pension Liability
	(a)	(b)	(a)-(b)
Balances at December 31, 2020	\$ 48,522,264	\$ 36,060,699	\$ 12,461,565
Adjustment to beginning of year	-	2	(2)
Changes for a Year:			
Service Cost	819,686	-	819,686
Interest	3,005,840	-	3,005,840
Differences Between Expected and Actual Experience	944,049	-	944,049
Changes of Assumptions	(2,596,557)	-	(2,596,557)
Changes of Benefit Terms	-	-	-
Contributions - Employer	-	1,385,927	(1,385,927)
Contributions - Employee	-	240,176	(240,176)
Contributions - Buy Back	150,081	150,081	-
Net Investment Income	-	4,134,869	(4,134,869)
Benefit Payments, Including Refunds of Employee Contributions	(2,497,016)	(2,497,016)	-
Administrative Expense	-	(37,874)	37,874
Net Changes	(173,917)	3,376,163	(3,550,080)
Balances at December 31, 2021	\$ 48,348,347	\$ 39,436,864	\$ 8,911,483

Sensitivity of Net Pension Liability to changes in the Discount Rate:

	Current Discount		
	1% Decrease	Rate	1% Increase
	5.75%	6.75%	7.75%
Sponsor's Net Pension Liability	\$ 15,318,591	\$ 8,911,483	\$ 3,645,770

Pension Plan Fiduciary Net Position

Detailed information about the Pension Plan's Fiduciary Net Position is available in a separately issued Plan financial report.

PENSION EXPENSE AND DEFERRED OUTFLOWS OF RESOURCES AND DEFERRED INFLOWS OF
RESOURCES RELATED TO PENSIONS
YEAR-END DECEMBER 31, 2021

For the year ended December 31, 2021, the Sponsor will recognize a pension expense of (\$164,768).
On December 31, 2021, the Sponsor reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between actual and expected experience	1,031,784	430,395
Changes of assumptions	423,140	2,139,614
Net difference between projected and actual earnings on pension plan investments	0	3,288,774
Total	\$1,454,924	\$5,858,783

Amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year-ended December 31:

2022	(\$1,107,361)
2023	(\$1,285,568)
2024	(\$1,299,472)
2025	(\$711,458)
2026	\$0
Thereafter	\$0

COMPONENTS OF PENSION EXPENSE
YEAR-END DECEMBER 31, 2021

	Net Pension Liability	Deferred Inflows	Deferred Outflows	Pension Expense
Beginning Balance	\$ 12,461,565	\$ 4,246,276	\$ 1,841,802	
Total Pension Liability Factors:				
Service Cost	819,686	-	-	819,686
Interest	3,005,840	-	-	3,005,840
Changes in Benefit Terms	-	-	-	-
Contributions - Buy Back	150,081			150,081
Differences Between Expected and Actual Experience With Regard to Economic or Demographic Assumptions				
Current Year Amortization	-	(699,410)	(385,689)	(313,721)
Changes in Assumptions About Future Economic or Demographic Factors or Other Inputs				
Current Year Amortization	-	(581,683)	(574,856)	(6,827)
Benefit Payments, Including Refunds of Employee Contributions	(2,497,016)	-	-	-
Net Change	(173,917)	1,315,464	(16,496)	3,655,059
Plan Fiduciary Net Position:				
Contributions - Employer	1,385,927	-	-	-
Contributions - Employee	240,176	-	-	(240,176)
Contributions - Buy Back	150,081			(150,081)
Projected Net Investment Income	2,230,084	-	-	(2,230,084)
Difference Between Projected and Actual Earnings on Pension Plan Investments				
Current Year Amortization	-	(1,422,551)	(185,191)	(1,237,360)
Benefit Payments, Including Refunds of Employee Contributions	(2,497,016)	-	-	-
Administrative Expenses	(37,874)	-	-	37,874
Net Change	3,376,163	482,234	(185,191)	(3,819,827)
Adjustment to beginning of year	2	-	-	-
Ending Balance	\$ 8,911,483	\$ 6,043,974	\$ 1,640,115	\$ (164,768)

AMORTIZATION SCHEDULE – EXPERIENCE

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences between Expected and Actual Experience

Year Base Established	Differences Between Expected and Actual Experience	Recognition Period (Years)	2021	2022	2023	2024	2025	Thereafter
2021	\$ 944,049	5	\$ 188,809	\$ 188,810	\$ 188,810	\$ 188,810	\$ 188,810	\$ -
2020	\$ (144,597)	5	\$ (28,919)	\$ (28,919)	\$ (28,919)	\$ (28,919)	\$ -	\$ -
2019	\$ (859,094)	5	\$ (171,819)	\$ (171,819)	\$ (171,819)	\$ -	\$ -	\$ -
2018	\$ 663,472	6	\$ 110,579	\$ 110,579	\$ 110,579	\$ -	\$ -	\$ -
2017	\$ 332,317	6	\$ 55,386	\$ 55,386	\$ -	\$ -	\$ -	\$ -
2016	\$ (2,992,031)	6	\$ (498,672)	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 593,014	6.33	\$ 30,915	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			(313,721)	154,037	98,651	159,891	188,810	-

AMORTIZATION SCHEDULE – CHANGES OF ASSUMPTIONS

Increase (Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions

Year Base Established	Effects of Changes in Assumptions	Recognition Period (Years)	2021	2022	2023	2024	2025	Thereafter
2021	\$ (2,596,557)	5	\$ (519,313)	\$ (519,311)	\$ (519,311)	\$ (519,311)	\$ (519,311)	\$ -
2018	\$ 1,269,421	6	\$ 211,570	\$ 211,570	\$ 211,570	\$ -	\$ -	\$ -
2017	\$ (374,219)	6	\$ (62,370)	\$ (62,370)	\$ -	\$ -	\$ -	\$ -
2016	\$ 1,111,971	6	\$ 185,329	\$ -	\$ -	\$ -	\$ -	\$ -
2015	\$ 3,413,518	6.33	\$ 177,957	\$ -	\$ -	\$ -	\$ -	\$ -
Net Increase (Decrease) in Pension Expense			\$ (6,827)	\$ (370,111)	\$ (307,741)	\$ (519,311)	\$ (519,311)	\$ -

AMORTIZATION SCHEDULE – INVESTMENTS

Increase (Decrease) in Pension Expense Arising from the Recognition of the Differences Between Projected and Actual Earnings on Pension Plan Investments

Year Base Established	Differences		Increase (Decrease) in Pension Expense Arising from the Recognition of the Differences Between Projected and Actual Earnings on Pension Plan Investments						
	Between Projected and Actual Earnings	Recognition Period (Years)	2021	2022	2023	2024	2025	Thereafter	
2021	\$ (1,904,785)	5	\$ (380,957)	\$ (380,957)	\$ (380,957)	\$ (380,957)	\$ (380,957)	\$ -	
2020	\$ (2,795,474)	5	\$ (559,095)	\$ (559,095)	\$ (559,095)	\$ (559,095)	\$ -	\$ -	
2019	\$ (682,128)	5	\$ (136,426)	\$ (136,426)	\$ (136,426)	\$ -	\$ -	\$ -	
2018	\$ 925,957	5	\$ 185,191	\$ 185,191	\$ -	\$ -	\$ -	\$ -	
2017	\$ (1,730,366)	5	\$ (346,073)	\$ -	\$ -	\$ -	\$ -	\$ -	
Net Increase (Decrease) in Pension Expense			\$ (1,237,360)	\$ (891,287)	\$ (1,076,478)	\$ (940,052)	\$ (380,957)	\$ -	

SCHEDULE OF CONTRIBUTIONS

Plan Year-End	Actuarially Determined Contribution	Contributions in Relation to the Actuarially Determined Contributions	Contribution Deficiency (Excess)	Covered Payroll	Contributions as a Percentage of Covered Payroll
12/31/2021	1,991,435	1,385,927	605,508	2,540,201	54.56%
12/31/2020	1,968,569	1,929,099	39,470	2,674,991	72.12%

The following assumptions were used to determine the Actuarially Determined Contribution for the plan year ending December 31, 2021:

Calculation Timing	The Actuarially Determined Contribution is calculated using a January 1, 2020 valuation date.
Interest Rate	6.25%
Mortality Rate	<p>Active Lives: PubS-2010 Employee mortality, projected 5 years past the valuation date with Scale MP-2019. 20% of active deaths are assumed to be in the line of duty.</p> <p>Inactive Lives: PubS-2010 Healthy Retiree mortality, projected 5 years past the valuation date with Scale MP-2019.</p> <p>Beneficiaries: PubS-2010 Survivor mortality, projected 5 years past the valuation date with Scale MP-2019.</p> <p>Disabled Lives: PubS-2010 Disabled mortality, projected 5 years past the valuation date with Scale MP-2019.</p>
Assumptions	All other assumptions and methods used for determining the Actuarially Determined Contribution can be found in the January 1, 2020 Actuarial Valuation Report for the Village of Winnetka Firefighters' Pension Fund prepared by Foster & Foster Actuaries and Consultants.

SCHEDULE OF INVESTMENT RETURNS

For the year ended December 31, 2021, the annual money-weighted return on Pension Plan investments, net of pension plan investment expense, was 12.69 percent. The money-weighted rate of return expresses investment performance, net of investment expense, adjusted for the changing amounts actually invested.

Plan Year-End	Annual Money-Weighted Rate of Return Net of Investment Expense
12/31/2021	12.69%
12/31/2020	13.90%

ASSUMPTIONS – GASB PENSION LIABILITY AND PENSION EXPENSE

The GASB 67/GASB 68 Pension Liability as of December 31, 2021 and GASB 68 Pension Expense were determined as follows:

Valuation Date	January 1, 2022
Measurement Date	December 31, 2021
GASB 68 Expense Measurement Period	January 1, 2021 - December 31, 2021
Reporting Period	January 1, 2021 - December 31, 2021
Discount Rate	6.75%
Inflation	2.25%
Salary Increases	Service-based rates
Other Assumptions	A summary of complete assumptions can be found in the accompanying Actuarial Valuation as of January 1, 2022 for the Village of Winnetka Firefighters' Pension Fund prepared by Foster & Foster Actuaries and Consultants.

The GASB 67/GASB 68 Total Pension Liability and GASB 68 Pension Expense reflect the following assumption changes:

- Updated mortality, retirement, and termination rate tables.
- Updated assumed salary increase rates.
- Reduced the inflation assumption of 2.50% to 2.25%.
- The Discount rate was updated from 6.25% to 6.75%.

NOTES TO THE FINANCIAL STATEMENTS

Support for Long-Term Expected Rate of Return

The Long-Term Expected Rate of Return on Pension Plan investments can be determined using a building-block method in which best-estimate ranges of expected future real rates of return (expected returns, net of Pension Plan investment expenses and inflation) are developed for each major asset class.

These ranges are combined to produce the Long-Term Expected Rate of Return by weighting the expected future real rates of return by target asset allocation percentage and by adding expected inflation.

Best estimates of arithmetic real rates of return for each major asset class included in the Pension Plan’s target asset allocation adopted as of December 31, 2021, as provided by AndCo, are summarized in the following table:

Asset Class	Target Allocation	Long Term Expected Real Rate of Return
Domestic Equity	44.00%	7.50%
International Equity	16.00%	8.50%
Domestic Bonds	35.00%	2.50%
Real Estate	5.00%	4.50%
Total	100.00%	

Inflation rate of investment advisor 2.50%

Concentrations

The Plan did not hold investments in any one organization that represent 5 percent or more of the Pension Plan’s fiduciary net position.

Discount Rate

The Discount Rate used to measure the Total Pension Liability was 6.75 percent.

The projection of cash flows used to determine the Discount Rate assumed that Plan Member contributions will be made at the current contribution rate and that Sponsor contributions will be made at rates equal to the difference between actuarially determined contribution rates and the Member rate. Based on those assumptions, the Pension Plan’s Fiduciary Net Position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the Long-Term Expected Rate of Return on Pension Plan investments (6.75 percent) was applied to all periods of projected benefit payments to determine the Total Pension Liability.

For the purpose of this valuation, the expected rate of return on pension plan investments is 6.75 percent. The municipal bond rate is 2.25 percent (based on the daily rate closest to, but not later than the measurement date of the S&P Municipal Bond 20 Year High Grade Rate Index). The resulting single discount rate is 6.75 percent.

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.
- c.) One retired member of the Fire Department elected by the Membership.

Benefits Provided

The Plan provides retirement, termination, disability and death benefits.

A summary of the benefit provisions can be found in the accompanying Actuarial Valuation as of January 1, 2022 for the Village of Winnetka Firefighters' Pension Fund prepared by Foster & Foster Actuaries and Consultants.