

GASB 67/68 Actuarial Valuation  
as of March 1, 2022

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SPRINGFIELD FIREFIGHTERS'  
PENSION FUND

For the February 28, 2023  
Financial Statement Reporting

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*LAUTERBACH & AMEN, LLP*

# GASB Statements 67 and 68 Actuarial Disclosures

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## Lauterbach & Amen, LLP

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CERTIFIED PUBLIC ACCOUNTANTS

### GASB 67: SPRINGFIELD FIREFIGHTERS' PENSION FUND

**Fiscal Year Ending: February 28, 2023**

Actuarial Valuation Date: March 1, 2022

Data Date: February 28, 2022

Measurement Date: February 28, 2023

### GASB 68: CITY OF SPRINGFIELD, ILLINOIS

**Fiscal Year Ending: February 28, 2023**

Actuarial Valuation Date: March 1, 2022

Data Date: February 28, 2022

Measurement Date: February 28, 2023

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May 9, 2023

***LAUTERBACH & AMEN, LLP***



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## ACTUARIAL CERTIFICATION

This certification provides supplemental information as required by the Governmental Accounting Standards Board. The enclosed schedules were prepared by the undersigned to assist in the preparation of the Annual Financial Report. The assumptions and methods used in the preparation of this report meet the parameters set for the disclosures presented in the financial section as required by the Governmental Accounting Standards Board. Additional information is provided solely to assist the auditors in the preparation of the required footnote disclosures.

The results in this report are based on the demographic data and financial information submitted by the City of Springfield, Illinois, and may include results from the prior Actuary. We did not prepare the Actuarial Valuations for the years prior to March 1, 2016. If applicable, those valuations were prepared by the prior Actuary whose reports have been furnished to us, and our disclosures are based on those reports. An audit of the prior Actuary's results was not performed, but high-level reviews were completed for general reasonableness, as appropriate, based on the purpose of this valuation. The accuracy of the results is dependent on the precision and completeness of the underlying information.

The valuation results summarized in this report involve actuarial calculations that require assumptions about future events. The City of Springfield, Illinois selected certain assumptions, while others were the result of guidance and/or judgment from the Plan's Actuary or Advisors. We believe that the assumptions used in this valuation are reasonable and appropriate for the purposes for which they have been used.

In preparing the results, our Actuaries used commercially available software (ProVal) developed by Winklevoss Technologies, LLC. This software is widely used for the purpose of performing Actuarial Valuations. Our Actuaries coded the plan provisions, assumptions, methods, and demographic data summarized in this report, and reviewed the liability and cost outputs for reasonableness. We are not aware of any material weaknesses or limitations in the software, and have determined it is appropriate for performing this valuation.



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To the best of our knowledge, all calculations are in accordance with the applicable accounting requirements, and the procedures followed and presentation of results conform to generally accepted actuarial principles and practices. The undersigned consultants of Lauterbach & Amen, LLP, with actuarial credentials, meet the Qualification Standards of the American Academy of Actuaries to render this Actuarial Certification. There is no relationship between the Springfield Firefighters' Pension Fund or the City of Springfield, Illinois and Lauterbach & Amen, LLP that impairs our objectivity.

Respectfully Submitted,  
LAUTERBACH & AMEN, LLP

A handwritten signature in cursive script that reads "Todd A. Schroeder".

Todd A. Schroeder, ASA, FCA, EA, MAAA

A handwritten signature in cursive script that reads "Robert L. Rietz, Jr.".

Robert L. Rietz, Jr., FCA, EA, MAAA



## PLAN FIDUCIARY NET POSITION

Statement of Plan Fiduciary Net Position  
Statement of Changes in Plan Fiduciary Net Position

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## STATEMENT OF PLAN FIDUCIARY NET POSITION

	<u>2/28/2022</u>	<u>2/28/2023</u>
<b>Assets</b>		
Cash and Cash Equivalents	\$ 8,457,721	\$ 2,183,062
Total Cash	<u>8,457,721</u>	<u>2,183,062</u>
Receivables:		
Investment Income - Accrued Interest	1,075	-
Other	14,945	12,486
Total Receivables	<u>16,020</u>	<u>12,486</u>
Investments:		
Pooled Investment Accounts	158,425,681	152,771,753
Total Investments	<u>158,425,681</u>	<u>152,771,753</u>
Total Assets	<u>166,899,422</u>	<u>154,967,301</u>
<b>Liabilities</b>		
Payables:		
Expenses Due/Unpaid	33,166	-
Total Liabilities	<u>33,166</u>	<u>-</u>
<b>Plan Fiduciary Net Position</b>	<u>\$ 166,866,256</u>	<u>\$ 154,967,301</u>

The Plan Fiduciary Net Position shown above is intended to be in accordance with GAAP and the Governmental Accounting Standards Board. The Fair Value of Investments has been provided by the reporting entity, and the results are being audited by an independent auditor. The level of the assets has been reviewed for reasonableness, but we make no representation as to the accuracy of the measurement of the Fair Value of Investments. The Statement of Plan Fiduciary Net Position for 2023 is based on audited financials.





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## STATEMENT OF CHANGES IN PLAN FIDUCIARY NET POSITION

	<u>2/28/2023</u>
<b>Additions</b>	
Contributions	
Employer	\$ 16,102,506
Members	1,830,917
Total Contributions	<u>17,933,423</u>
Investment Income	
Net Appreciation in Fair Value of Investments	(13,085,515)
Interest and Dividends	1,323,338
Less Investment Expense	<u>(102,454)</u>
Net Investment Income	<u>(11,864,631)</u>
Total Additions	<u>6,068,792</u>
<b>Deductions</b>	
Benefit Payments and Refunds of Member Contributions	17,835,899
Administrative Expense	131,848
Total Deductions	<u>17,967,747</u>
Net Increase in Net Position	<u>(11,898,955)</u>
<b>Plan Fiduciary Net Position</b>	
Beginning of Year	<u>166,866,256</u>
End of Year	<u>\$ 154,967,301</u>

The changes in Plan Fiduciary Net Position shown above is intended to be in accordance with GAAP and the Governmental Accounting Standards Board. The Plan activity has been provided by the reporting entity, and the results are being audited by an independent auditor. The cash flows have been reviewed for reasonableness, but we make no representation as to the accuracy of the measurement of the Fair Value of Investments. The Statement of Changes in Plan Fiduciary Net Position for 2023 is based on audited financials.



## ACTUARIAL PENSION LIABILITY INFORMATION

Statement of Total Pension Liability  
Statement of Changes in Total Pension Liability  
Statement of Changes in Net Pension Liability  
Deferred Outflows and Inflows of Resources  
Deferred Outflows and Inflows of Resources – Detail  
Pension Expense Development

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**STATEMENT OF TOTAL PENSION LIABILITY**

	<u>2/28/2022</u>	<u>2/28/2023</u>
Active Members	\$ 108,721,016	\$ 98,859,889
Inactive Members		
Terminated Members	1,125,021	1,068,883
Retired Members	216,350,876	214,804,698
Disabled Members	15,270,390	16,192,999
Other Beneficiaries	<u>17,056,581</u>	<u>16,761,956</u>
Total Inactive Members	<u>249,802,868</u>	<u>248,828,536</u>
Total Pension Liability	<u>\$ 358,523,884</u>	<u>\$ 347,688,425</u>

The Total Pension Liability (“TPL”) shown above is dependent on several factors such as Plan Provisions and actuarial assumptions used in this report. In addition, the calculation of the TPL may be dependent on the Plan Fiduciary Net Position shown in the prior section of this report. Changes in the Plan Fiduciary Net Position due to any factor, including adjustments on final audit, could change the TPL. The dependence of the TPL on the Plan Fiduciary Net Position is due to the role of the Plan Fiduciary Net Position (and the Plan’s Projected Fiduciary Net Position) on the determination of the Discount Rate used for the TPL.

The TPL has been determined for GASB 67/68 reporting purposes only. The resulting TPL is intended to be used in the financial statement reporting of the Plan and/or Employer. The resulting liability is not intended to be a representation of the Plan liability for other purposes, including but not limited to, determination of cash funding requirements and recommendations. The TPL is based on data as of the Actuarial Valuation - Data Date shown in this report. The TPL has been determined as of the Actuarial Valuation Date and based on the assumptions used in this report, and adjusted to the Measurement Date as needed.



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## STATEMENT OF CHANGES IN TOTAL PENSION LIABILITY

	<u>2/28/2023</u>
<b>Changes in Total Pension Liability</b>	
Service Cost	\$ 6,075,291
Interest	22,101,830
Changes of Benefit Terms*	(518,660)
Differences Between Expected and Actual Experience	6,444,519
Change in Assumptions	(27,102,540)
Benefit Payments and Refunds	<u>(17,835,899)</u>
Net Change in Total Pension Liability	(10,835,459)
Total Pension Liability - Beginning	<u>358,523,884</u>
Total Pension Liability - Ending (a)	<u>\$ 347,688,425</u>
Plan Fiduciary Net Position - Ending (b)	<u>\$ 154,967,301</u>
<b>Employer's Net Pension Liability - Ending (a) - (b)</b>	<u>\$ 192,721,124</u>
Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	44.57%
Covered-Employee Payroll	\$ 19,142,062
Employer's Net Pension Liability as a Percentage of Covered-Employee Payroll	1,006.79%

The Plan Fiduciary Net Position was detailed in the prior section of this report. The Employer's Net Pension Liability is the excess of the Total Pension Liability over the Plan Fiduciary Net Position.

Total Pension Liability may be dependent on the Plan Fiduciary Net Position. Changes in the Plan Fiduciary Net Position could change the determination of the Total Pension Liability. Any changes in the Plan Fiduciary Net Position, including adjustments on final audit, can have an impact on the Employer's Net Pension Liability that extends beyond the dollar-for-dollar change in the Plan Fiduciary Net Position.

Covered-Employee Payroll is estimated based on the prior Covered-Employee Payroll and expected increases for the Plan Members during the Fiscal Year.



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A key demographic risk is mortality improvement differing from expected. While the actuarial assumptions reflect small, continuous improvements in mortality experience and these assumptions are refined upon the completion of each actuarial experience study, the risk arises because there is a possibility of a sudden shift in mortality experience. This report reflects the impact of COVID-19 experience that has been accounted for in the underlying demographic data. This report does not reflect the ongoing impact of COVID-19, which is likely to influence demographic and economic experience, at least in the short-term. We will continue to monitor these developments and their impact on the Plan. Actual future experience will be reflected in each subsequent Actuarial Valuation, as experience emerges.

\*Late in 2022, the IDOI Public Pension Division issued an unofficial opinion that Tier II disabled Members are entitled to an initial COLA increase on the later of the January 1<sup>st</sup> after the pensioner turns age 60 or the January 1<sup>st</sup> after the benefit date anniversary equal to the lesser of 3% of the original benefit or ½ CPI-U. The prior interpretation from the IDOI Public Pension Division was that Tier II disabled members were entitled to an initial COLA increase on the later of the January 1<sup>st</sup> after the pensioner turns age 60 or the January 1<sup>st</sup> after the benefit date anniversary equal to 3% of the original monthly benefit for each full year that has passed since the pension began. In accordance with the new opinion, we have included a change in liability due to a change in the substantive plan, which includes written provisions as well as administrative interpretations. The impact of this change has been quantified as Changes of Benefit Terms in the current valuation.



## STATEMENT OF CHANGES IN NET PENSION LIABILITY

The table below illustrates the changes in Net Pension Liability (“NPL”) from the prior Measurement Date to the current Measurement Date. Under Statement 68, the difference between the NPL from the prior Measurement Date to the current Measurement Date should be recognized as a component of Pension Expense, unless permitted to be recognized as a Deferred Outflow or Inflow of Resources.

	Increase (Decrease)		
	Total Pension Liability (a)	Plan Fiduciary Net Position (b)	Net Pension Liability (a) - (b)
<b>Balances Beginning at 3/1/2022</b>	\$ 358,523,884	\$ 166,866,256	\$ 191,657,628
<b>Changes for the Year:</b>			
Service Cost	6,075,291	-	6,075,291
Interest	22,101,830	-	22,101,830
Actuarial Experience	6,444,519	-	6,444,519
Change in Assumptions	(27,102,540)	-	(27,102,540)
Changes of Benefit Terms	(518,660)	-	(518,660)
Contributions - Employer	-	16,102,506	(16,102,506)
Contributions - Members	-	1,830,917	(1,830,917)
Contributions - Other	-	-	-
Net Investment Income	-	(11,864,631)	11,864,631
Benefit Payments and Refunds	(17,835,899)	(17,835,899)	-
Administrative Expense	-	(131,848)	131,848
<b>Net Changes</b>	<u>\$ (10,835,459)</u>	<u>\$ (11,898,955)</u>	<u>\$ 1,063,496</u>
<b>Balances Ending at 2/28/2023</b>	<u>\$ 347,688,425</u>	<u>\$ 154,967,301</u>	<u>\$ 192,721,124</u>

The changes in Total Pension Liability shown above are described in the *Statement of Changes in Total Pension Liability* section of this report. The Plan Fiduciary Net Position was detailed in the prior section of this report. The Employer’s Net Pension Liability is the excess of the Total Pension Liability over the Plan Fiduciary Net Position.



## DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES

The table below shows the cumulative amounts to be shown as Deferred Outflows and Inflows of Resources. Changes in Total Pension Liability related to the differences between expected and actual experience, or changes in assumptions regarding future events, are recognized in Pension Expense over the average future working career of all Members (active and inactive) in the Pension Plan. The net difference in projected and actual earnings on Pension Plan investments over the measurement period are recognized over a 5-year period. Amounts not yet recognized are summarized below:

	Deferred Outflows of Resources	Deferred Inflows of Resources	Total Deferred Amounts
Differences Between Expected and Actual Experience	\$ 6,855,591	\$ (17,435,805)	\$ (10,580,214)
Change in Assumptions	20,748,615	(25,358,198)	(4,609,583)
Net Difference Between Projected and Actual Earnings on Pension Plan Investments	21,394,997	(5,016,450)	16,378,547
Contributions Subsequent to the Measurement Date*	-	-	-
Total	<u>\$ 48,999,203</u>	<u>\$ (47,810,453)</u>	<u>\$ 1,188,750</u>

\*Contributions Subsequent to the Measurement Date may be recognized as a reduction to the Net Pension Liability. The amount is not known as of the date of this report. Subsequent to the Measurement Date, the following amounts will be recognized in Pension Expense in the upcoming years:

### Year Ended

#### February 28:

2024	\$ 66,516
2025	462,782
2026	2,749,030
2027	(42,387)
2028	(2,047,191)
Thereafter	\$ -



## DEFERRED OUTFLOWS AND INFLOWS OF RESOURCES – DETAIL

The table below shows the annual detail amounts that have been summarized on the prior page. Under Statement 68, the level of detail shown on the prior page is sufficient for financial statement reporting. The detail shown below is primarily for tracking purposes.

Pension Expense Source	Date Established	Initial Period	Initial Balance	Remaining Period	2/28/2023 Expense Recognized	2/28/2023 Deferred Balance
Asset Loss	2/28/2023	5.00	\$ 23,544,068	5.00	\$ 4,708,814	\$ 18,835,254
Change in Assumptions Gain	2/28/2023	5.55	(27,102,540)	5.55	(4,883,341)	(22,219,199)
Actuarial Loss	2/28/2023	5.55	6,444,519	5.55	1,161,175	5,283,344
Asset Loss	2/28/2022	5.00	3,195,111	4.00	639,023	1,917,065
Change in Assumptions Loss	2/28/2022	5.99	12,376,764	4.99	2,066,238	8,244,288
Actuarial Gain	2/28/2022	5.99	(22,251,631)	4.99	(3,714,797)	(14,822,037)
Asset Gain	2/28/2021	5.00	(12,541,125)	3.00	(2,508,225)	(5,016,450)
Change in Assumptions Loss	2/28/2021	6.21	22,785,262	4.21	3,669,125	11,777,887
Actuarial Gain	2/28/2021	6.21	(4,952,431)	4.21	(797,493)	(2,559,952)
Asset Loss	2/29/2020	5.00	3,213,394	2.00	642,679	642,678
Change in Assumptions Gain	2/29/2020	6.71	(4,494,064)	3.71	(669,757)	(1,815,036)
Actuarial Loss	2/29/2020	6.71	2,679,231	3.71	399,290	1,082,071
Asset Loss	2/28/2019	5.00	7,023,467	1.00	1,404,691	-
Change in Assumptions Loss	2/28/2019	7.17	2,400,265	3.17	334,765	726,440
Actuarial Loss	2/28/2019	7.17	1,493,791	3.17	208,340	452,091
Change in Assumptions Gain	2/28/2018	7.14	(7,907,441)	2.14	(1,107,485)	(1,262,531)
Actuarial Loss	2/28/2018	7.14	238,569	2.14	33,414	38,085
Change in Assumptions Gain	2/28/2017	7.14	(3,133,319)	1.14	(438,841)	(61,432)
Actuarial Gain	2/28/2017	7.14	(2,744,644)	1.14	(384,404)	(53,816)
Change in Assumptions Loss	2/29/2016	7.04	14,101,572	0.04	80,117	-
Actuarial Loss	2/29/2016	7.04	4,164,750	0.04	23,662	-
Total			\$ 18,533,568		\$ 866,990	\$ 1,188,750

Each detail amount shown above was established as of the Fiscal Year End shown and the full amount deferred has been determined as of that time. Any events that occur in subsequent Fiscal Years do not have an impact on the prior Fiscal Year. The bases are established independently each year.





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## PENSION EXPENSE DEVELOPMENT

The table below displays the Pension Expense development for the current year. The Pension Expense includes items that change the Net Pension Liability from one year to the next, netted out for amounts that are deferred under GASB pronouncement, plus any amounts that are being recognized that were deferred previously.

See below for the Pension Expense development:

	<u>2/28/2023</u>
<b>Pension Expense/(Income) Under GASB 68</b>	
Service Cost	\$ 6,075,291
Interest	22,101,830
Changes of Benefit Terms	(518,660)
Contributions - Members	(1,830,917)
Contributions - Other	-
Expected Investment Income	(11,679,437)
Administrative Expense	131,848
Other Changes	-
Initial Pension Expense/(Income)	<u>\$ 14,279,955</u>
Recognition of Outflow/(Inflow) of Resources Due to Liabilities	(4,019,992)
Recognition of Outflow/(Inflow) of Resources Due to Assets	4,886,982
<b>Total Pension Expense/(Income)</b>	<u><u>\$ 15,146,945</u></u>



## ACTUARIAL ASSUMPTIONS INFORMATION

Statement of Significant Actuarial Assumptions  
Assumption Changes  
Actuarial Assumptions (Demographic)  
Postemployment Benefit Changes  
Expected Return on Pension Plan Investments  
Municipal Bond Rate  
Discount Rate  
Sensitivity of the Discount Rate  
Assessment and Use of Actuarial Models

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## STATEMENT OF SIGNIFICANT ACTUARIAL ASSUMPTIONS

### Actuarial Assumptions (Economic)

Discount Rate Used for the Total Pension Liability	6.82%
Expected Rate of Return on Investments	7.00%
High-Quality 20 Year Tax-Exempt G.O. Bond Rate	3.75%
Projected Individual Pay Increases	3.75% - 16.54%
Projected Total Payroll Increases	3.25%
Consumer Price Index (Urban)	2.25%
Inflation Rate	2.25%

See the *Actuarial Assumptions (Demographic)* section of this report for further details on Demographic Assumptions.

The Actuarial Assumptions (Economic) rates shown above are assumed to be annual rates, compounded on an annual basis. For more information on the selection of the actuarial assumptions, please see the Actuarial Assumption Summary document prepared for the Plan, available upon request.

### ASSUMPTION CHANGES

The assumptions were changed from the prior year.

The High-Quality 20 Year Tax-Exempt General Obligation (“G.O.”) Bond Rate assumption was changed from 2.51% to 3.75% for the current year. The underlying index used is The Bond Buyer 20-Bond G.O. Index as discussed in more detail later in this section. The choice of Index is unchanged from the prior year. The rate has been updated to the current Fiscal Year End based on changes in market conditions as reflected in the Index. The change was made to reflect our understanding of the requirements of GASB under Statement 67 and Statement 68.

The Discount Rate used in the determination of the Total Pension Liability was changed from 6.21% to 6.82%. The Discount Rate is impacted by a couple of metrics. Any change in the underlying High-Quality 20 Year Tax Exempt G.O. Bond Rate will impact the blended Discount Rate.

The assumption changes stated above were made to better reflect the future anticipated experience of the Plan.



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In addition, there are changes that can be made that impact the projection of the Plan Fiduciary Net Position. For example, changes in the Formal or Informal Funding Policy can impact the Discount Rate. Actual changes in the Plan Fiduciary Net Position from one year to the next can impact the projections as well.



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## ACTUARIAL ASSUMPTIONS (DEMOGRAPHIC)

### Projected Individual Pay Increases\*

Projected individual pay increases include a long-term average increase for inflation, average annual increases for promotions, and any additional increases for a step program. Sample rates are as follows:

Service	Rate	Service	Rate
0	16.54%	8	3.75%
1	14.75%	9	5.70%
2	13.36%	10	3.75%
3	3.75%	15	3.75%
4	6.50%	20	3.75%
5	3.75%	25	3.75%
6	3.75%	30	3.75%
7	3.75%	35	3.75%

\* Projected individual pay increases for active Members hired at age 40 or older are assumed annual increases at the ultimate rate reduced by 50 basis points, without adjustments in early service years.

### Retirement Rates

100% of the L&A Assumption Study for Firefighters 2020 Cap Age 65. Sample rates are as follows:

Age	Rate	Age	Rate
50	7.00%	58	17.15%
51	7.00%	59	17.15%
52	7.00%	60	20.00%
53	7.00%	61	20.00%
54	7.00%	62	20.00%
55	17.15%	63	25.00%
56	17.15%	64	25.00%
57	17.15%	65	100.00%



### Termination Rates

100% of the L&A Assumption Study for Firefighters 2020. Sample rates are as follows:

Age	Rate	Age	Rate
25	7.02%	40	1.25%
30	4.07%	45	0.41%
35	2.41%	50	0.00%

### Disability Rates

100% of the L&A Assumption Study for Firefighters 2020. Sample rates are as follows:

Age	Rate	Age	Rate
25	0.07%	40	0.54%
30	0.09%	45	0.75%
35	0.27%	50	0.97%

75% of active Members who become disabled are assumed to be in the Line of Duty.

### Mortality Rates

Active Mortality follows the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study. Mortality improvement uses MP-2019 Improvement Rates applied on a fully generational basis.

50% of active Member deaths are assumed to be in the Line of Duty.

Retiree Mortality follows the L&A Assumption Study for Firefighters 2020. These rates are experience weighted with the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study improved to 2017 using MP-2019 Improvement Rates. These rates are then improved fully generationally using MP-2019 Improvement Rates.

Disabled Mortality follows the L&A Assumption Study for Firefighters 2020. These rates are experience weighted with the Sex Distinct Raw Rates as developed in the PubS-2010 Study for disabled participants improved to 2017 using MP-2019 Improvement Rates. These rates are then improved fully generationally using MP-2019 Improvement Rates.



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**Mortality Rates (Continued)**

Spouse Mortality follows the Sex Distinct Raw Rates as developed in the PubS-2010(A) Study for contingent survivors. For all rates not provided there (ages 45 and younger) the PubG-2010 Study for general employees was used. Mortality improvement uses MP-2019 Improvement Rates applied on a fully generational basis.

**Marital Assumptions**

*Active Members:* 80% of active Members are assumed to be married. Female spouses are assumed to be 3 years younger than male spouses.

*Retiree and Disabled Members:* Actual spousal data was utilized for retiree and disabled Members.

**POSTEMPLOYMENT BENEFIT CHANGES**

Eligibility for postemployment benefit increases is determined based on the Illinois Pension Code. Tier I Firefighter retirees are provided with an annual increase of 3.00% of the current retirement benefits by statute when eligible. Tier II Firefighter retirees are provided postemployment benefit increases based on the lesser of 3.00% of the original retirement benefits or one-half of the Consumer Price Index (Urban) for the prior September.

The CPI-U for September 1992 was 141.30. The CPI-U for September 2022 was 296.81. The average increase in the CPI-U for September 1992 through September 2022 was 2.52% (on a compounded basis).



## EXPECTED RETURN ON PENSION PLAN INVESTMENTS

The Long-Term Expected Rate of Return is intended to represent the best estimate of future real rates of return and is shown for each of the major asset classes in the investment policy.

The table below illustrates the best estimates of target allocations and Long-Term Expected Rates of Return developed for each of the major asset classes, adjusted for expected inflation. These rates and target allocations were disclosed by Marquette Associates for the Illinois Firefighters' Pension Investment Fund, dated April 29, 2022.

There are multiple approaches seen to providing these rates. Typically, the information is either based on capital market projections, or historical rates seen for the asset classes. We do not provide an opinion on the reasonableness of the returns provided nor the reasonableness of the approach used in the determination of the rates provided. The information provided is shown below for convenience.

The rates provided in the table below are based on a geometric average. The Investment Policy Statement will provide more detail regarding the Fund's policies on asset allocation targets and acceptable ranges.

Asset Class	Long-Term Expected Rate of Return	Long-Term Inflation Expectation	Long-Term Expected Real Rate of Return	Target Allocation
U.S. Equity	7.70%	2.50%	5.20%	31.00%
Developed Market Equity (Non-US)	7.60%	2.50%	5.10%	16.00%
Emerging Market Equity	8.00%	2.50%	5.50%	8.00%
Private Equity	11.10%	2.50%	8.60%	5.00%
Public Credit	4.30%	2.50%	1.80%	3.00%
Private Credit	9.50%	2.50%	7.00%	5.00%
Cash Equivalents	1.90%	2.50%	-0.60%	0.00%
Core Investment Grade Bonds	4.10%	2.50%	1.60%	15.00%
Long-Term Treasuries	3.80%	2.50%	1.30%	3.00%
TIPS	3.30%	2.50%	0.80%	4.00%
Real Estate	7.40%	2.50%	4.90%	5.00%
Infrastructure	7.60%	2.50%	5.10%	5.00%

Long-Term Expected Real Rates of Return under GASB are expected to reflect the period of time that begins when a Plan Member begins to provide service to the employer and ends at the point when all benefits to the Plan Member have been paid. The rates provided above are intended to estimate those figures.





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The Long-Term Inflation Expectation is 2.50% and is included in the Long-Term Expected Rates of Return. The Long-Term Inflation Expectation is from the same source as the Long-Term Expected Real Rates of Return, and is not necessarily reflective of the inflation measures used for other purposes in the report.

Geometric rates of return are equal to arithmetic rates of return when the annual returns exhibit no volatility over time. When arithmetic returns are volatile on a year-to-year basis, the actual realized geometric returns over time will be lower. Higher volatility results in a greater difference.



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## **MUNICIPAL BOND RATE**

The Municipal Bond Rate assumption is based on the Bond Buyer 20-Bond G.O. Index. The rate shown earlier in this section of the report is the February 23, 2023 rate. The 20-Bond G.O. Index is based on an average of certain general obligation municipal bonds maturing in 20 years and having an average rating equivalent of Moody's Aa2 and Standard & Poor's AA.

The indices represent theoretical yields rather than actual price or yield quotations. Municipal bond traders are asked to estimate what a current-coupon bond for each issuer in the indices would yield if the bond was sold at par value. The indices are simple averages of the average estimated yields of the bonds.

## **DISCOUNT RATE**

The Discount Rate used in the determination of the Total Pension Liability is based on a combination of the Expected Rate of Return on Plan Investments and the Municipal Bond Rate.

Cash flow projections were used to determine the extent to which the Plan's Projected Fiduciary Net Position will be able to cover Projected Benefit Payments. To the extent that Projected Benefit Payments are covered by the Plan's Projected Fiduciary Net Position, the Expected Rate of Return on Plan Investments is used to determine the portion of the Net Pension Liability associated with those payments. To the extent that Projected Benefit Payments are not covered by the Plan's Projected Fiduciary Net Position, the Municipal Bond Rate is used to determine the portion of the Net Pension Liability associated with those payments.

Projected Benefit Payments are determined during the actuarial process based on the assumptions. More details on the assumptions are earlier in this section of the report. The expected contributions are based on the funding policy of the Plan. The funding policy is discussed in more detail in the *Funding Policy* section of this report.



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### SENSITIVITY OF THE DISCOUNT RATE

The Employer's Net Pension Liability has been determined using the Discount Rate listed in this section of the report. Below is a table illustrating the sensitivity of the Employer's Net Pension Liability to the Discount Rate assumption.

	<b>1% Decrease (5.82%)</b>	<b>Current Discount Rate (6.82%)</b>	<b>1% Increase (7.82%)</b>
Employer's Net Pension Liability	\$238,947,968	\$192,721,124	\$154,605,848

The sensitivity of the Employer's Net Pension Liability to the Discount Rate is based primarily on two factors:

1. The duration of the Plan's Projected Benefit Payments. Younger Plans with benefit payments further in the future will be more sensitive to changes in the Discount Rate.
2. The Percent Funded of the Plan (ratio of the Plan Fiduciary Net Position to the Total Pension Liability). The higher the Percent Funded, the higher the sensitivity to the Discount Rate.



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## ASSESSMENT AND USE OF ACTUARIAL MODELS

Actuarial Valuations rely upon the use of actuarial modeling software to predict the occurrence of future events, which include specific demographic and financial potential outcomes. Actuarial assumptions are established to provide a guideline to use for such modeling.

- The model used in this Actuarial Valuation is intended to determine the Recommended Contribution, under the selected Funding Policy, to assist in the preparation of the Annual Financial Report. The actuarial assumptions used were developed with this goal in mind.
- There are no known material limitations or inconsistencies among the actuarial assumptions or methods.
- The output from the model is reasonable based on the individual actuarial assumptions and based on the actuarial assumptions in the aggregate.
- The actuarial software used to calculate plan liabilities has been purchased from an outside vendor. We have performed thorough testing of the software, including review of sample participants, to ensure the intended purpose of the model, the operation of the model, sensitivities and dependencies, and strengths and limitations of the model are sufficient for this purpose.
- Demographic data and financial information have been provided by client professionals, financial advisors, and/or auditors, who are known to be experts in their respective fields. We rely on the fact that the information provided by these experts has been given for the intended purpose of this Actuarial Valuation.
- Where applicable, certain actuarial assumptions and Funding Policy may be required as prescribed by law. In such instances, we have followed legal guidance to ensure conformity.
- The Expected Rate of Return on Investments assumption has been chosen using input from several sources; including, but not limited to: client professionals, financial advisors, auditors, and other capital market outlooks. We have relied on the information provided, in the aggregate, to settle on the selected Expected Rate of Return on Investments assumption.



## PARTICIPANT DATA

Participant Demographic Data & Average Future Working Career

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## PARTICIPANT DEMOGRAPHIC DATA & AVERAGE FUTURE WORKING CAREER

The chart below summarizes the Member count, payroll, and average future working career as of:

<b>Actuarial Valuation - Data Date</b>	<b>2/28/2021</b>	<b>2/28/2022</b>
<b>Fiscal Year End for Reporting</b>	<b><u>(FYE 2/28/2022)</u></b>	<b><u>(FYE 2/28/2023)</u></b>
Inactive Plan Members or Beneficiaries Currently Receiving Benefits	245	252
Inactive Plan Members Entitled to But Not Yet Receiving Benefits	2	2
Active Plan Members	<u>213</u>	<u>200</u>
Total	<u><u>460</u></u>	<u><u>454</u></u>
Payroll of Active Plan Members	<u>\$ 18,785,866</u>	<u>\$ 18,106,980</u>
Average Future Working Career (In Years)		
Active Plan Members	12.93	12.60
Inactive Plan Members	0.00	0.00
Total	5.99	5.55

Member counts shown above are as of the Actuarial Valuation Date for the two most recent Fiscal Years. Payroll of Active Plan Members is the pensionable salary for active Plan Members as of the Actuarial Valuation – Data Date. For the Fiscal Year Ending February 28, 2023, a beginning of year Actuarial Valuation Date was used along with a rollforward of liabilities to the end of the Fiscal Year based on assumptions and standard rollforward techniques.

The average future working career is measured as of the Actuarial Valuation Date and is based on the demographic assumptions used in the preparation of this report.



## FUNDING POLICY

Components of the Actuarially Determined Contributions  
Formal Funding Policy  
Informal Funding Policy  
Funding Policy – Other Considerations

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## COMPONENTS OF THE ACTUARIALLY DETERMINED CONTRIBUTION

The Actuarially Determined Contribution (“ADC”) includes the determination of the Normal Cost Contribution for active Plan Members, as well as a provision for the payment towards Unfunded Liability.

The actuarial funding method used in the determination of the Normal Cost and the Actuarial Accrued Liability is the Projected Unit Credit Cost Method. The method allocates Normal Cost Contributions by Members over the working career of the Member.

Unfunded Liability is the excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. The Actuarially Determined Contribution includes a payment towards Unfunded Liability existing at the Actuarial Valuation Date. The payment towards Unfunded Liability is set up as a level percent of payroll payment that is expected to increase during the payment period and target 90% funding. The current Employer Contributions are being compared to the Actuarially Determined Contribution as developed in the March 1, 2021 Actuarial Valuation. The equivalent single amortization period as of that valuation is 19 years.

The Actuarial Value of Assets smooths gains and losses on the Fair Value of Assets over a 5-year period.

Under no circumstances will the Actuarially Determined Contribution be less than the amount determined as the Statutory Minimum Contribution under Illinois State Statutes.

## FORMAL FUNDING POLICY

There is no Formal Funding Policy that exists between the Pension Board and the City at this time.

## INFORMAL FUNDING POLICY

In determining the most appropriate Informal Funding Policy, GASB provides the following guidance in the Statement:

*Application of professional judgment should consider the most recent five-year contribution history of the employers and nonemployer contributing entities as a key indicator of future contributions from those sources and should reflect all other known events and conditions. ... the amount of projected cash flows for contributions from employers and nonemployer contributing entities should be limited to an average of contributions from those sources over the most recent five-year period and may be modified based on consideration of subsequent events. For this purpose, the basis for the average (for example, percentage of covered payroll contributed or percentage of Actuarially Determined Contributions made) should be a matter of professional judgment.*





In our review of Informal Funding Policy, the following factors are considered and described herein:

1. Five-Year Contribution History of the Employer (with a focus on the average contributions from those sources)
2. Other Known Events and Conditions
3. Consideration of Subsequent Events

Five-Year Contribution History of the Employer

Employer Contributions (under the Informal Funding Policy) should be limited to the average over the most recent five years. In determining the basis for the average, we reviewed three possibilities: (a) the average dollar contribution; (b) the average percent of pensionable pay; and (c) the average percent of the Actuarially Determined Contribution. Please see the table below for a summary of these values:

<b>Fiscal Year End</b>	<b>Employer Contributions</b>	<b>Most Applicable ADC</b>	<b>% of ADC</b>	<b>Covered- Employee Payroll</b>	<b>% of Payroll</b>
2/28/2023	\$16,102,506	\$14,466,233	111.31%	\$19,142,062	84.12%
2/28/2022	\$14,818,690	\$14,159,124	104.66%	\$18,539,527	79.93%
2/28/2021	\$13,550,355	\$13,232,121	102.41%	\$19,050,536	71.13%
2/29/2020	\$12,508,920	\$12,508,920	100.00%	\$19,027,608	65.74%
2/28/2019	\$11,916,494	\$11,916,494	100.00%	\$19,807,840	60.16%

When compared to the other policies reviewed, history suggests that a contribution as a percent of the Actuarially Determined Contribution is the least volatile, and as a result, the most stable contribution method under an Informal Funding Policy.

Other Known Events and Conditions

GASB has a provision for consideration of any other known events or conditions in the most recent five-year history in applying judgement for the Informal Funding Policy. There are no events or conditions that have been considered in the development of the Informal Funding Policy.

Consideration of Subsequent Events

GASB has a provision for modification based on consideration of subsequent events in the development of the Informal Funding Policy. There are no subsequent events that have been considered in the development of the Informal Funding Policy.



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### Informal Funding Policy – Selected

The Informal Funding Policy that has been determined for future contributions is 103.67% of the Actuarially Determined Contribution. This represents the full future contributions expected to be made.

### **FUNDING POLICY – OTHER CONSIDERATIONS**

Under GASB, the future contribution amount is not intended to include dollars contributed on behalf of future employees. Contributions are only intended to cover contributions towards the Normal Cost of current employees as of the Actuarial Valuation Date as well as payment of Unfunded Liability on behalf of the current employees. Contributions under the funding policy have been adjusted as necessary to exclude dollars that would be anticipated to be contributed on behalf of future employees hired after the Actuarial Valuation Date.

The contribution level may not pay off the Unfunded Liability during the active working career of current employees. In that case, contributions will persist beyond the working career of current employees. To the extent that a portion of the above total contribution is anticipated to pay contributions for the Normal Cost of future employees, the amount has been netted out. The remaining amount is anticipated to be paid towards the Unfunded Liability existing for current employees.

The Actuarially Determined Contribution is determined annually based on the parameters previously discussed. The funding methods and procedures are assumed to continue into the future. If applicable, the tax levy in the next December is assumed to be the Actuarially Determined Contribution. Funding is assumed to go into the Plan during the next full Fiscal Year.



## SCHEDULES OF REQUIRED SUPPLEMENTARY INFORMATION

Schedule of Changes in the Net Pension Liability  
Schedule of Total Pension Liability and Related Ratios  
Schedule of Contributions  
Notes to Schedule of Contributions

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## SCHEDULE OF CHANGES IN THE NET PENSION LIABILITY

	2/28/2023	2/28/2022	2/28/2021	2/29/2020	2/28/2019	2/28/2018	2/28/2017	2/29/2016	2/28/2015	2/28/2014
<b>Total Pension Liability</b>										
Service Cost	\$ 6,075,291	\$ 5,643,851	\$ 5,322,103	\$ 5,197,220	\$ 5,205,445	\$ 5,283,043	\$ 4,951,770	\$ 5,111,168	\$ 5,438,758	
Interest	22,101,830	21,259,437	22,140,316	21,253,481	20,465,858	19,736,353	19,481,955	17,506,592	17,749,350	
Changes of Benefit Terms	(518,660)	-	-	1,976,795	-	-	-	-	-	
Differences Between Expected and Actual Experience	6,444,519	(22,251,631)	(4,952,431)	2,679,231	1,493,791	238,569	(2,744,644)	4,164,750	-	
Change in Assumptions	(27,102,540)	12,376,764	22,785,262	(4,494,064)	2,400,265	(7,907,441)	(3,133,319)	14,101,572	-	
Benefit Payments and Refunds	(17,835,899)	(16,801,355)	(16,317,321)	(16,034,348)	(15,723,823)	(14,928,475)	(14,577,712)	(13,670,346)	(12,922,751)	
<b>Net Change in Total Pension Liability</b>	\$ (10,835,459)	\$ 227,066	\$ 28,977,929	\$ 10,578,315	\$ 13,841,536	\$ 2,422,049	\$ 3,978,050	\$ 27,213,736	\$ 10,265,357	
<b>Total Pension Liability - Beginning</b>	<u>358,523,884</u>	<u>358,296,818</u>	<u>329,318,889</u>	<u>318,740,574</u>	<u>304,899,038</u>	<u>302,476,989</u>	<u>298,498,939</u>	<u>271,285,203</u>	<u>261,019,846</u>	
<b>Total Pension Liability - Ending (a)</b>	<u>\$ 347,688,425</u>	<u>\$ 358,523,884</u>	<u>\$ 358,296,818</u>	<u>\$ 329,318,889</u>	<u>\$ 318,740,574</u>	<u>\$ 304,899,038</u>	<u>\$ 302,476,989</u>	<u>\$ 298,498,939</u>	<u>\$ 271,285,203</u>	
<b>Plan Fiduciary Net Position</b>										
Contributions - Employer	\$ 16,102,506	\$ 14,818,690	\$ 13,550,355	\$ 12,508,920	\$ 11,916,494	\$ 11,184,141	\$ 10,395,154	\$ 9,786,645	\$ 9,973,179	
Contributions - Members	1,830,917	1,760,624	1,807,386	1,818,701	1,700,670	1,696,447	1,718,845	1,696,300	1,704,162	
Net Investment Income	(11,864,631)	7,942,634	22,177,023	6,097,536	2,271,252	11,568,713	14,904,623	(5,946,400)	7,144,916	
Benefit Payments and Refunds	(17,835,899)	(16,801,355)	(16,317,321)	(16,034,348)	(15,723,823)	(14,928,475)	(14,577,712)	(13,670,346)	(12,922,751)	
Administrative Expense	(131,848)	(151,998)	(110,520)	(133,450)	(132,495)	(165,250)	(137,137)	(109,969)	(133,317)	
<b>Net Change in Plan Fiduciary Net Position</b>	\$ (11,898,955)	\$ 7,568,595	\$ 21,106,923	\$ 4,257,359	\$ 32,098	\$ 9,355,576	\$ 12,303,773	\$ (8,243,770)	\$ 5,766,189	
<b>Plan Fiduciary Net Position - Beginning</b>	<u>166,866,256</u>	<u>159,297,661</u>	<u>138,190,738</u>	<u>133,933,379</u>	<u>133,901,281</u>	<u>124,545,705</u>	<u>112,241,932</u>	<u>120,485,702</u>	<u>114,719,513</u>	
<b>Plan Fiduciary Net Position - Ending (b)</b>	<u>\$ 154,967,301</u>	<u>\$ 166,866,256</u>	<u>\$ 159,297,661</u>	<u>\$ 138,190,738</u>	<u>\$ 133,933,379</u>	<u>\$ 133,901,281</u>	<u>\$ 124,545,705</u>	<u>\$ 112,241,932</u>	<u>\$ 120,485,702</u>	
<b>Employer's Net Pension Liability - Ending (a) - (b)</b>	<u>\$ 192,721,124</u>	<u>\$ 191,657,628</u>	<u>\$ 198,999,157</u>	<u>\$ 191,128,151</u>	<u>\$ 184,807,195</u>	<u>\$ 170,997,757</u>	<u>\$ 177,931,284</u>	<u>\$ 186,257,007</u>	<u>\$ 150,799,501</u>	

The current year information was developed in the completion of this report.



## SCHEDULE OF TOTAL PENSION LIABILITY AND RELATED RATIOS

	2/28/2023	2/28/2022	2/28/2021	2/29/2020	2/28/2019	2/28/2018	2/28/2017	2/29/2016	2/28/2015	2/28/2014
<b>Total Pension Liability - Ending (a)</b>	<u>\$ 347,688,425</u>	<u>\$ 358,523,884</u>	<u>\$ 358,296,818</u>	<u>\$ 329,318,889</u>	<u>\$ 318,740,574</u>	<u>\$ 304,899,038</u>	<u>\$ 302,476,989</u>	<u>\$ 298,498,939</u>	<u>\$ 271,285,203</u>	
<b>Plan Fiduciary Net Position - Ending (b)</b>	<u>\$ 154,967,301</u>	<u>\$ 166,866,256</u>	<u>\$ 159,297,661</u>	<u>\$ 138,190,738</u>	<u>\$ 133,933,379</u>	<u>\$ 133,901,281</u>	<u>\$ 124,545,705</u>	<u>\$ 112,241,932</u>	<u>\$ 120,485,702</u>	
<b>Employer's Net Pension Liability - Ending (a) - (b)</b>	<u>\$ 192,721,124</u>	<u>\$ 191,657,628</u>	<u>\$ 198,999,157</u>	<u>\$ 191,128,151</u>	<u>\$ 184,807,195</u>	<u>\$ 170,997,757</u>	<u>\$ 177,931,284</u>	<u>\$ 186,257,007</u>	<u>\$ 150,799,501</u>	
<b>Plan Fiduciary Net Position as a Percentage of the Total Pension Liability</b>	44.57%	46.54%	44.46%	41.96%	42.02%	43.92%	41.18%	37.60%	44.41%	
<b>Covered-Employee Payroll</b>	\$ 19,142,062	\$ 18,539,527	\$ 19,050,536	\$ 19,027,608	\$ 19,807,840	\$ 19,991,231	\$ 19,361,967	\$ 16,982,730	\$ 16,985,797	
<b>Employer's Net Pension Liability as a Percentage of Covered-Employee Payroll</b>	1,006.79%	1,033.78%	1,044.59%	1,004.48%	933.00%	855.36%	918.97%	1,096.74%	887.80%	

Covered-Employee Payroll shown above for the current year is estimated based on the prior Covered-Employee Payroll and expected increases for the Plan Members during the Fiscal Year.



## SCHEDULE OF CONTRIBUTIONS

	2/28/2023	2/28/2022	2/28/2021	2/29/2020	2/28/2019	2/28/2018	2/28/2017	2/29/2016	2/28/2015	2/28/2014
Actuarially Determined Contribution	\$ 14,466,233	\$ 14,159,124	\$ 13,232,121	\$ 12,508,920	\$ 11,916,494	\$ 11,184,141	\$ 10,395,154	\$ 9,786,645	\$ 9,473,179	
Contributions in Relation to the Actuarially Determined Contribution	16,102,506	14,818,690	13,550,355	12,508,920	11,916,494	11,184,141	10,395,154	9,786,645	9,473,179	
Contribution Deficiency/(Excess)	\$ (1,636,273)	\$ (659,566)	\$ (318,234)	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
Covered-Employee Payroll	\$ 19,142,062	\$ 18,539,527	\$ 19,050,536	\$ 19,027,608	\$ 19,807,840	\$ 19,991,231	\$ 19,361,967	\$ 16,982,730	\$ 16,985,797	
Contributions as a Percentage of Covered-Employee Payroll	84.12%	79.93%	71.13%	65.74%	60.16%	55.95%	53.69%	57.63%	55.77%	

## NOTES TO SCHEDULE OF CONTRIBUTIONS

The Actuarially Determined Contribution shown above for the current year is the Statutory Minimum Contribution from the March 1, 2021 Actuarial Valuation completed by Lauterbach & Amen, LLP for the December 2021 tax levy, if applicable. The methods and assumptions shown below are based on the same Actuarial Valuation. For more detail on the age-based and service-based rates disclosed below, please see the Actuarial Valuation.

Actuarial Cost Method	Projected Unit Credit
Amortization Method	Level % Pay (Closed)
Equivalent Single Amortization Period	90% Funded Over 19 Years
Asset Valuation Method	5-Year Smoothed Fair Value
Inflation (CPI-U)	2.25%
Total Payroll Increases	3.25%
Individual Pay Increases	3.75% - 16.54%
Expected Rate of Return on Investments	7.00%
Mortality Rates	Pub-2010 Adjusted for Plan Status, Demographics, and Illinois Public Pension Data, as Described
Retirement Rates	100% of L&A 2020 Illinois Firefighters Retirement Rates Capped at Age 65
Termination Rates	100% of L&A 2020 Illinois Firefighters Termination Rates
Disability Rates	100% of L&A 2020 Illinois Firefighters Disability Rates



# GASB METHODS AND PROCEDURES

GASB Methods and Procedures

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## GASB METHODS AND PROCEDURES

	<u>Statement 67</u> <u>Pension Plan Financials</u>	<u>Statement 68</u> <u>Employer Financials</u>
Fiscal Year End for Reporting	<b>February 28, 2023</b>	<b>February 28, 2023</b>
Measurement Date	February 28, 2023	February 28, 2023
Actuarial Valuation Date	March 1, 2022	March 1, 2022
Actuarial Valuation - Data Date	February 28, 2022	February 28, 2022
Asset Valuation Method	Fair Value	Fair Value
Actuarial Cost Method	Entry Age Normal (Level %)	Entry Age Normal (Level %)

### **Methodology Used in the Determination of Deferred Outflows and Inflows of Resources**

Amortization Method	Straight Line	Straight Line
Amortization Period		
Actuarial Experience	5.55 Years	5.55 Years
Change in Assumptions	5.55 Years	5.55 Years
Asset Experience	5.00 Years	5.00 Years





## SUPPLEMENTARY TABLES

GASB Projections – Summary and Procedure

GASB Projections – Limitations

Projection of Contributions

Notes to Projection of Contributions

Projection of the Pension Plan's Fiduciary Net Position

Notes to Projection of the Pension Plan's Fiduciary Net Position

Actuarial Present Value of Projected Benefit Payments

Notes to Actuarial Present Value of Projected Benefit Payments

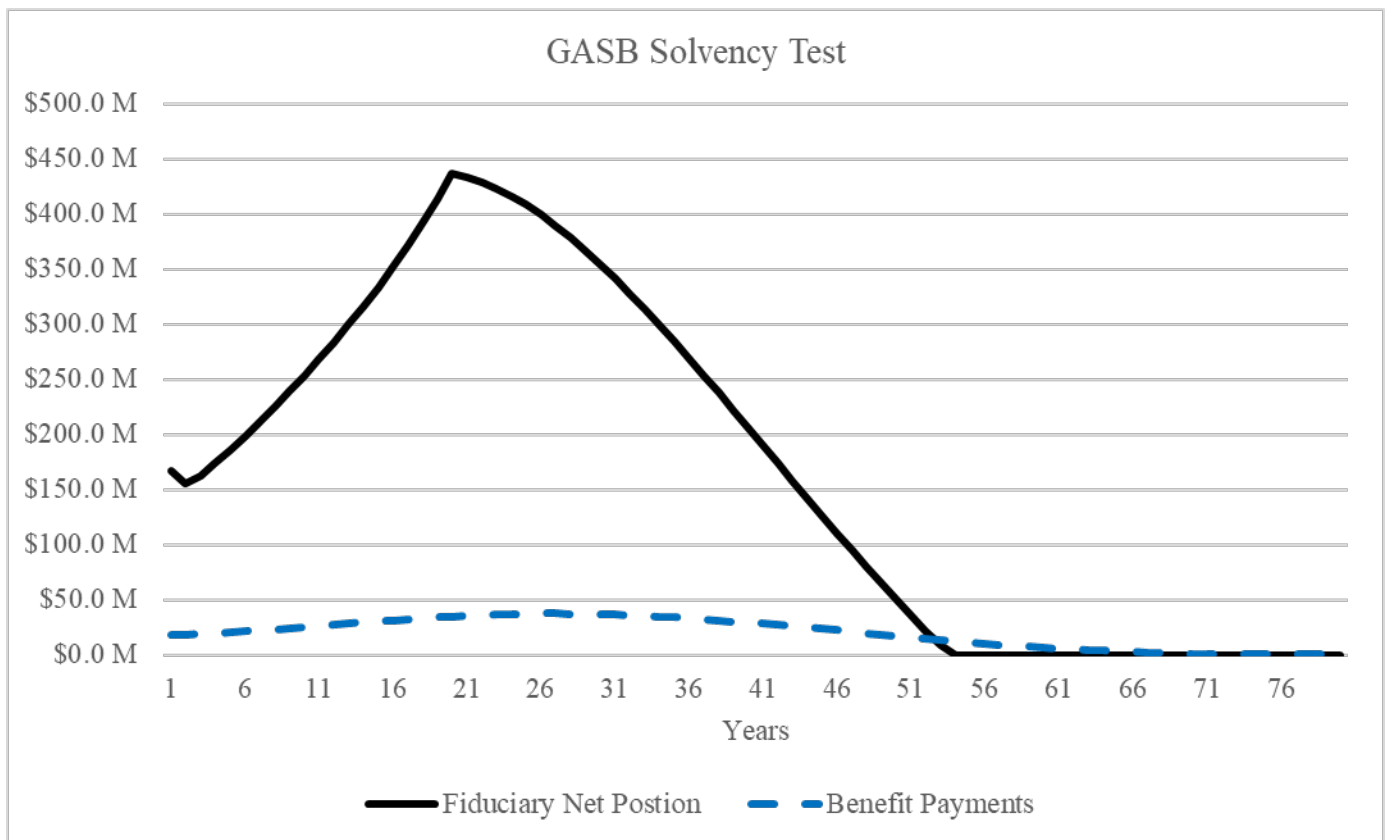
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## GASB PROJECTIONS – SUMMARY AND PROCEDURE

GASB requires a solvency test to use in the determination of the Discount Rate each year. The Plan Fiduciary Net Position is projected forward. To the extent that the Plan Fiduciary Net Position is anticipated to be greater than \$0, Projected Benefit Payments are discounted based on the Expected Rate of Return on Plan Investments.

If the Plan Fiduciary Net Position is anticipated to reach \$0 prior to the payment of Projected Benefit Payments for employees who are in the Plan as of the Actuarial Valuation Date, then the remaining Projected Benefit Payments are discounted using the High-Quality Municipal Bond Rate, as described in the *Actuarial Assumptions Information* section of this report. The chart below is a high-level summary of the projections:



The Plan's Projected Fiduciary Net Position is anticipated to cover Projected Benefit Payments in full for the current employees through 2076.



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## **GASB PROJECTIONS – LIMITATIONS**

Projections of any type require assumptions about future events. The projections required for GASB reporting are deterministic in nature. That means that values are projected forward under one set of assumptions which can be thought of as the average result. Actual results could vary, and projections of one deterministic assumption set do not necessarily provide a framework for making risk management or funding policy decisions. Projections that deal with risk management are outside the scope of this report.

In addition, GASB requirements create results that are specific only to financial statement reporting, and should not be used or interpreted for other purposes. For example, GASB cash flow projections do not entail the total expected cash flows of the Plan, but rather a subset of cash flows specific to employees who are in the Plan as of the Actuarial Valuation Date. While the likely expectation may be that future employees are hired to replace the current employees, cash flows attributable to their benefits are not considered. Under GASB, when the Plan Fiduciary Net Position reaches \$0, that represents the Plan Fiduciary Net Position for the assets attributable to the current employees.

Also, GASB mandates certain assumptions that are made in the projection process. Most notably, Projected Contributions under an Informal Funding Policy. In proposing an Informal Funding Policy, GASB suggests a focus be placed on the average contributions over the past 5 years. Projected Contributions in this section may be based on the five-year average, unless a Formal Funding Policy is in place.

Contributions reflecting an Informal Funding Policy are applied under GASB, whether or not the projected results dictate a need for more or less contributions. This would not be the case with other uses for projections. Any events that are taken into account (past or future) in the Informal Funding Policy are discussed in the *Funding Policy* section of this report.

Projections further into the future are more sensitive to assumption changes. For projections that run out close to 80 years, a small change in an assumption may have a dramatic impact on the projections. If the solvency of the Plan as determined by GASB remains constant, then dramatic changes in the projection results may not necessarily lead to big changes in the determination of the Total Pension Liability.

We recommend the projections are not used for any other purposes, other than providing information for purposes of the financial statement report.

The following pages provide the detail behind the chart shown on the prior page.



## PROJECTION OF CONTRIBUTIONS – YEARS 1 TO 30

Year	Projected Pensionable Payroll			Projected Contributions			
	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Contributions from Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Payroll of Future Employees (f) - Notes	Total Contributions (g) = (d) + (e) + (f)
1	\$ 18,106,979	\$ -	\$ 18,106,979	\$ 1,830,917	\$ 16,102,506	\$ -	\$ 17,933,423
2	18,349,271	346,186	18,695,456	1,734,924	13,588,737	-	15,323,661
3	18,476,702	826,357	19,303,059	1,746,972	17,305,970	-	19,052,942
4	18,422,826	1,507,582	19,930,408	1,741,878	17,851,800	-	19,593,678
5	18,375,990	2,202,157	20,578,146	1,737,450	18,384,458	-	20,121,908
6	18,206,995	3,039,941	21,246,936	1,721,471	18,944,540	-	20,666,011
7	17,937,627	3,999,834	21,937,461	1,696,003	19,505,172	-	21,201,175
8	17,525,673	5,124,756	22,650,429	1,657,052	20,076,368	-	21,733,420
9	17,091,184	6,295,384	23,386,568	1,615,971	20,649,437	-	22,265,408
10	16,671,648	7,474,983	24,146,631	1,576,304	21,249,782	-	22,826,086
11	16,147,647	8,783,750	24,931,397	1,526,760	21,889,551	-	23,416,311
12	15,347,089	10,394,579	25,741,667	1,451,067	22,552,274	-	24,003,341
13	14,595,202	11,983,070	26,578,271	1,379,976	23,199,113	-	24,579,089
14	13,818,681	13,623,384	27,442,065	1,306,556	23,896,980	-	25,203,536
15	13,040,892	15,293,041	28,333,932	1,233,016	24,638,374	-	25,871,390
16	12,235,228	17,019,557	29,254,785	1,156,841	25,429,753	-	26,586,594
17	11,373,531	18,832,035	30,205,566	1,075,367	26,272,407	-	27,347,774
18	10,437,863	20,749,384	31,187,247	986,900	27,170,889	-	28,157,789
19	9,559,571	22,641,261	32,200,832	903,857	28,114,957	-	29,018,814
20	8,662,889	24,584,470	33,247,359	819,076	1,420,662	-	2,239,738
21	7,689,601	26,638,298	34,327,898	727,052	1,281,903	-	2,008,955
22	6,693,153	28,750,402	35,443,555	632,838	1,127,796	-	1,760,634
23	5,846,234	30,749,236	36,595,471	552,761	956,976	-	1,509,737
24	4,979,476	32,805,347	37,784,823	470,809	836,829	-	1,307,638
25	4,184,204	34,828,626	39,012,830	395,616	705,490	-	1,101,106
26	3,429,955	36,850,792	40,280,747	324,302	594,634	-	918,936
27	2,797,708	38,792,163	41,589,871	264,523	480,738	-	745,261
28	2,201,538	40,740,004	42,941,542	208,155	396,288	-	604,443
29	1,756,717	42,580,426	44,337,142	166,098	302,134	-	468,232
30	1,359,743	44,418,356	45,778,099	128,564	242,990	-	371,554

Column d – Contributions from current employees to the Plan (employees in the Plan as of the Actuarial Valuation Date).  
 Column e – Employer Contributions to the Plan excluding contributions for employees hired after the Actuarial Valuation Date.  
 Column f – Contributions from future employees to the extent that contributions are assumed to be greater than their Normal Cost.



## PROJECTION OF CONTRIBUTIONS – YEARS 31 TO 60

Year	Projected Pensionable Payroll			Projected Contributions			
	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Contributions from Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Payroll of Future Employees (f) - Notes	Total Contributions (g) = (d) + (e) + (f)
31	\$ 995,539	\$ 46,270,348	\$ 47,265,888	\$ 94,128	\$ 192,246	\$ -	\$ 286,374
32	683,520	48,118,509	48,802,029	64,627	145,632	-	210,259
33	468,446	49,919,649	50,388,095	44,292	99,593	-	143,885
34	292,591	51,733,117	52,025,708	27,664	71,891	-	99,555
35	173,651	53,542,893	53,716,544	16,419	46,127	-	62,546
36	97,804	55,364,528	55,462,331	9,247	27,886	-	37,133
37	67,048	57,197,809	57,264,857	6,339	14,208	-	20,547
38	33,600	59,092,364	59,125,965	3,177	11,308	-	14,485
39	25,297	61,022,262	61,047,559	2,392	4,458	-	6,850
40	10,665	63,020,939	63,031,604	1,008	4,486	-	5,494
41	-	65,080,131	65,080,131	-	2,494	-	2,494
42	-	67,195,236	67,195,236	-	-	-	-
43	-	69,379,081	69,379,081	-	-	-	-
44	-	71,633,901	71,633,901	-	-	-	-
45	-	73,962,003	73,962,003	-	-	-	-
46	-	76,365,768	76,365,768	-	-	-	-
47	-	78,847,655	78,847,655	-	-	-	-
48	-	81,410,204	81,410,204	-	-	-	-
49	-	84,056,036	84,056,036	-	-	-	-
50	-	86,787,857	86,787,857	-	-	-	-
51	-	89,608,462	89,608,462	-	-	-	-
52	-	92,520,737	92,520,737	-	-	-	-
53	-	95,527,661	95,527,661	-	-	-	-
54	-	98,632,310	98,632,310	-	-	-	-
55	-	101,837,860	101,837,860	-	-	-	-
56	-	105,147,591	105,147,591	-	-	-	-
57	-	108,564,888	108,564,888	-	-	-	-
58	-	112,093,246	112,093,246	-	-	-	-
59	-	115,736,277	115,736,277	-	-	-	-
60	-	119,497,706	119,497,706	-	-	-	-

Column d – Contributions from current employees to the Plan (employees in the Plan as of the Actuarial Valuation Date).  
 Column e – Employer Contributions to the Plan excluding contributions for employees hired after the Actuarial Valuation Date.  
 Column f – Contributions from future employees to the extent that contributions are assumed to be greater than their Normal Cost.



## PROJECTION OF CONTRIBUTIONS – YEARS 61 TO 80

Year	Projected Pensionable Payroll			Projected Contributions			
	Payroll for Current Employees (a)	Payroll for Future Employees (b)	Total Employee Payroll (c) = (a) + (b)	Contributions from Current Employees (d) - Notes	Employer Contributions for Current Employees (e) - Notes	Contributions Related to Payroll of Future Employees (f) - Notes	Total Contributions (g) = (d) + (e) + (f)
61	\$ -	\$ 123,381,381	\$ 123,381,381	\$ -	\$ -	\$ -	\$ -
62	-	127,391,276	127,391,276	-	-	-	-
63	-	131,531,493	131,531,493	-	-	-	-
64	-	135,806,266	135,806,266	-	-	-	-
65	-	140,219,970	140,219,970	-	-	-	-
66	-	144,777,119	144,777,119	-	-	-	-
67	-	149,482,375	149,482,375	-	-	-	-
68	-	154,340,552	154,340,552	-	-	-	-
69	-	159,356,620	159,356,620	-	-	-	-
70	-	164,535,711	164,535,711	-	-	-	-
71	-	169,883,121	169,883,121	-	-	-	-
72	-	175,404,323	175,404,323	-	-	-	-
73	-	181,104,963	181,104,963	-	-	-	-
74	-	186,990,874	186,990,874	-	-	-	-
75	-	193,068,078	193,068,078	-	-	-	-
76	-	199,342,790	199,342,790	-	-	-	-
77	-	205,821,431	205,821,431	-	-	-	-
78	-	212,510,628	212,510,628	-	-	-	-
79	-	219,417,223	219,417,223	-	-	-	-
80	-	226,548,283	226,548,283	-	-	-	-

### NOTES TO PROJECTION OF CONTRIBUTIONS

Total Employee Payroll is projected to increase annually at the Projected Total Payroll Increases rate shown in the *Actuarial Assumptions Information* section of this report. Payroll for current employees (employees in the Plan as of the Actuarial Valuation Date) are projected on an employee-by-employee basis, using the Projected Individual Pay Increases and probability of remaining an employee in the future.

Employer Contributions are related to current employees in the Plan as of the Actuarial Valuation Date. To the extent that Projected Contributions under the Funding Policy are made to cover the Normal Cost of benefit payments for future employees, those contributions are excluded for purposes of these projections and this report.

Contributions are based on the Funding Policy as described in the *Funding Policy* section of this report. The contributions do not factor in changes in the Funding Policy based on an assumed Employer decision; if, the projections were to play out in this fashion. The only future events that are considered were outlined in the *Funding Policy* section of this report. Contributions from future employees have not been included. It is assumed that contributions made by future employees will not exceed the Normal Cost of their participation in the Plan. In addition, Employer Contributions on behalf of future employees have not been included per the GASB parameters.



**PROJECTION OF THE PENSION PLAN’S FIDUCIARY NET POSITION – YEARS 1 TO 30**

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expense (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a)+(b)-(c)-(d)+(e)
1	\$ 166,866,256	\$ 17,933,423	\$ 17,835,899	\$ 131,848	\$ (11,864,631)	\$ 154,967,301
2	154,967,301	15,323,661	18,131,964	131,834	10,744,806	162,771,970
3	162,771,970	19,052,942	18,827,760	121,297	11,397,674	174,273,528
4	174,273,528	19,394,705	19,553,924	124,026	12,189,233	186,179,516
5	186,179,516	19,917,570	20,384,696	126,817	13,011,778	198,597,351
6	198,597,351	20,456,148	21,311,083	129,670	13,867,353	211,480,099
7	211,480,099	20,985,876	22,227,121	132,588	14,755,523	224,861,790
8	224,861,790	21,512,717	23,162,193	135,571	15,677,849	238,754,592
9	238,754,592	22,039,303	24,108,636	138,621	16,635,543	253,182,181
10	253,182,181	22,594,287	25,103,602	141,740	17,629,966	268,161,091
11	268,161,091	23,178,518	26,226,622	144,929	18,659,520	283,627,578
12	283,627,578	23,759,588	27,292,285	148,190	19,725,099	299,671,790
13	299,671,790	24,329,488	28,346,539	151,525	20,831,125	316,334,340
14	316,334,340	24,947,595	29,405,273	154,934	21,981,962	333,703,691
15	333,703,691	25,608,666	30,402,664	158,420	23,185,924	351,937,197
16	351,937,197	26,316,607	31,368,214	161,984	24,453,128	371,176,734
17	371,176,734	27,070,057	32,304,508	165,629	25,793,369	391,570,022
18	391,570,022	27,871,846	33,165,347	169,356	27,218,702	413,325,867
19	413,325,867	28,724,129	33,933,450	173,166	28,744,424	436,687,803
20	436,687,803	2,216,994	34,717,977	177,063	29,424,415	433,434,172
21	433,434,172	1,988,553	35,449,962	181,046	29,162,906	428,954,623
22	428,954,623	1,742,754	36,041,236	185,120	28,819,898	423,290,918
23	423,290,918	1,494,406	36,541,490	189,285	28,397,091	416,451,641
24	416,451,641	1,294,359	36,921,766	193,544	27,897,882	408,528,571
25	408,528,571	1,089,925	37,208,900	197,899	27,325,909	399,537,607
26	399,537,607	909,605	37,352,314	202,352	26,685,055	389,577,601
27	389,577,601	737,693	37,395,208	206,904	25,980,177	378,693,360
28	378,693,360	598,305	37,268,777	211,560	25,217,664	367,028,992
29	367,028,992	463,477	37,054,276	216,320	24,403,780	354,625,654
30	354,625,654	367,781	36,754,132	221,187	23,542,532	341,560,647

Column b – Contributions on behalf of current employees in the Plan as of the Actuarial Valuation Date.

Column d – Based on the average Administrative Expense in recent years, and projected to increase in the future.

Column e – Based on the Expected Rate of Return on Plan Investments, and does not factor in allocation changes.



**PROJECTION OF THE PENSION PLAN’S FIDUCIARY NET POSITION – YEARS 31 TO 60**

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expense (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a)+(b)-(c)-(d)+(e)
31	\$ 341,560,647	\$ 283,466	\$ 36,359,856	\$ 226,164	\$ 22,638,656	\$ 327,896,749
32	327,896,749	208,124	35,849,696	231,252	21,697,224	313,721,148
33	313,721,148	142,424	35,259,121	236,456	20,723,120	299,091,115
34	299,091,115	98,544	34,585,209	233,941	19,721,157	284,091,665
35	284,091,665	61,910	33,836,332	222,630	18,696,520	268,791,133
36	268,791,133	36,756	33,009,604	211,063	17,653,942	253,261,164
37	253,261,164	20,339	32,141,198	199,294	16,597,076	237,538,087
38	237,538,087	14,338	31,211,827	187,363	15,529,196	221,682,431
39	221,682,431	6,781	30,243,223	175,308	14,453,359	205,724,039
40	205,724,039	5,439	29,228,126	163,163	13,372,178	189,710,367
41	189,710,367	2,469	28,162,521	150,957	12,288,840	173,688,198
42	173,688,198	-	27,054,898	138,727	11,206,397	157,700,969
43	157,700,969	-	25,907,192	126,508	10,127,888	141,795,158
44	141,795,158	-	24,722,507	114,333	9,056,372	126,014,690
45	126,014,690	-	23,504,874	102,236	7,994,779	110,402,359
46	110,402,359	-	22,259,593	90,252	6,945,921	94,998,434
47	94,998,434	-	20,993,335	78,412	5,912,379	79,839,067
48	79,839,067	-	19,714,117	66,744	4,896,405	64,954,609
49	64,954,609	-	18,430,725	55,275	3,899,813	50,368,422
50	50,368,422	-	17,152,750	44,025	2,923,902	36,095,551
51	36,095,551	-	15,889,373	33,008	1,969,405	22,142,575
52	22,142,575	-	14,648,460	22,232	1,036,506	8,508,389
53	8,508,389	-	13,438,044	11,701	124,846	-
54	-	-	12,265,731	-	-	-
55	-	-	11,138,386	-	-	-
56	-	-	10,061,780	-	-	-
57	-	-	9,040,254	-	-	-
58	-	-	8,076,969	-	-	-
59	-	-	7,174,485	-	-	-
60	-	-	6,334,839	-	-	-

Column b – Contributions on behalf of current employees in the Plan as of the Actuarial Valuation Date.  
 Column d – Based on the average Administrative Expense in recent years, and projected to increase in the future.  
 Column e – Based on the Expected Rate of Return on Plan Investments, and does not factor in allocation changes.





**PROJECTION OF THE PENSION PLAN’S FIDUCIARY NET POSITION – YEARS 61 TO 80**

Year	Projected Beginning Fiduciary Net Position (a)	Projected Total Contributions (b)	Projected Benefit Payments (c)	Projected Administrative Expense (d)	Projected Investment Earnings (e)	Projected Ending Fiduciary Net Position (f) = (a)+(b)-(c)-(d)+(e)
61	\$ -	\$ -	\$ 5,558,690	\$ -	\$ -	\$ -
62	-	-	4,845,836	-	-	-
63	-	-	4,195,349	-	-	-
64	-	-	3,605,651	-	-	-
65	-	-	3,074,521	-	-	-
66	-	-	2,599,473	-	-	-
67	-	-	2,177,761	-	-	-
68	-	-	1,806,445	-	-	-
69	-	-	1,482,567	-	-	-
70	-	-	1,202,982	-	-	-
71	-	-	964,230	-	-	-
72	-	-	762,841	-	-	-
73	-	-	595,228	-	-	-
74	-	-	457,663	-	-	-
75	-	-	346,471	-	-	-
76	-	-	258,062	-	-	-
77	-	-	188,967	-	-	-
78	-	-	135,940	-	-	-
79	-	-	96,019	-	-	-
80	-	-	66,552	-	-	-

**NOTES TO PROJECTION OF THE PENSION PLAN’S FIDUCIARY NET POSITION**

Projected Total Contributions are Employee and Employer Contributions projected to be made under the Funding Policy on behalf of current employees in the Plan as of the Actuarial Valuation Date. The amounts shown are detailed earlier in this section.

Projected Benefit Payments shown represents current employees as of the Actuarial Valuation Date. The Plan will pay benefits in the future on behalf of employees hired after the Actuarial Valuation Date, but those benefit payments are not projected for this purpose.

Projected Investment Earnings are based on the Expected Rate of Return on Plan Investments. Administrative Expense are typically not charged on a per employee basis. Administrative Expenses shown are not projected to distinguish between current and future employees.

The Projected Fiduciary Net Position represents assets held or projected to be held on behalf of current employees in the Plan as of the Actuarial Valuation Date. The Plan will hold assets in the future on behalf of employees hired after the Actuarial Valuation Date, but those assets are not projected for this purpose.



## ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS – YEARS 1 TO 30

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Actuarial Present Values of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments (7.00%)	Present Value of "Unfunded" Benefit Payments (3.75%)	Present Value of Benefit Payments Using the Single Discount Rate (6.82%)
1	\$ 166,866,256	\$ 17,835,899	\$ 17,835,899	\$ -	\$ 17,242,614	\$ -	\$ 17,257,136
2	154,967,301	18,131,964	18,131,964	-	16,382,085	-	16,423,510
3	162,771,970	18,827,760	18,827,760	-	15,897,880	-	15,964,938
4	174,273,528	19,553,924	19,553,924	-	15,430,880	-	15,522,080
5	186,179,516	20,384,696	20,384,696	-	15,034,093	-	15,148,431
6	198,597,351	21,311,083	21,311,083	-	14,689,085	-	14,825,739
7	211,480,099	22,227,121	22,227,121	-	14,318,208	-	14,475,764
8	224,861,790	23,162,193	23,162,193	-	13,944,448	-	14,121,648
9	238,754,592	24,108,636	24,108,636	-	13,564,710	-	13,760,232
10	253,182,181	25,103,602	25,103,602	-	13,200,493	-	13,413,330
11	268,161,091	26,226,622	26,226,622	-	12,888,806	-	13,118,686
12	283,627,578	27,292,285	27,292,285	-	12,535,061	-	12,780,131
13	299,671,790	28,346,539	28,346,539	-	12,167,541	-	12,426,329
14	316,334,340	29,405,273	29,405,273	-	11,796,257	-	12,067,449
15	333,703,691	30,402,664	30,402,664	-	11,398,478	-	11,680,174
16	351,937,197	31,368,214	31,368,214	-	10,991,102	-	11,281,709
17	371,176,734	32,304,508	32,304,508	-	10,578,663	-	10,876,663
18	391,570,022	33,165,347	33,165,347	-	10,150,056	-	10,453,567
19	413,325,867	33,933,450	33,933,450	-	9,705,728	-	10,012,797
20	436,687,803	34,717,977	34,717,977	-	9,280,487	-	9,590,234
21	433,434,172	35,449,962	35,449,962	-	8,856,219	-	9,167,228
22	428,954,623	36,041,236	36,041,236	-	8,414,890	-	8,725,079
23	423,290,918	36,541,490	36,541,490	-	7,973,541	-	8,281,392
24	416,451,641	36,921,766	36,921,766	-	7,529,458	-	7,833,340
25	408,528,571	37,208,900	37,208,900	-	7,091,601	-	7,390,244
26	399,537,607	37,352,314	37,352,314	-	6,653,209	-	6,945,074
27	389,577,601	37,395,208	37,395,208	-	6,225,093	-	6,509,127
28	378,693,360	37,268,777	37,268,777	-	5,798,174	-	6,072,945
29	367,028,992	37,054,276	37,054,276	-	5,387,666	-	5,652,492
30	354,625,654	36,754,132	36,754,132	-	4,994,416	-	5,248,742

The Projected Fiduciary Net Position and Benefit Payments are based on current employees in the Plan as of the Actuarial Valuation Date. The development of the Projected Fiduciary Net Position is shown in more detail earlier in this section.



## ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS – YEARS 31 TO 60

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Actuarial Present Values of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments (7.00%)	Present Value of "Unfunded" Benefit Payments (3.75%)	Present Value of Benefit Payments Using the Single Discount Rate (6.82%)
31	\$ 341,560,647	\$ 36,359,856	\$ 36,359,856	\$ -	\$ 4,617,607	\$ -	\$ 4,860,922
32	327,896,749	35,849,696	35,849,696	-	4,254,970	-	4,486,725
33	313,721,148	35,259,121	35,259,121	-	3,911,098	-	4,131,073
34	299,091,115	34,585,209	34,585,209	-	3,585,369	-	3,793,405
35	284,091,665	33,836,332	33,836,332	-	3,278,257	-	3,474,317
36	268,791,133	33,009,604	33,009,604	-	2,988,933	-	3,173,028
37	253,261,164	32,141,198	32,141,198	-	2,719,908	-	2,892,299
38	237,538,087	31,211,827	31,211,827	-	2,468,468	-	2,629,346
39	221,682,431	30,243,223	30,243,223	-	2,235,387	-	2,385,086
40	205,724,039	29,228,126	29,228,126	-	2,019,025	-	2,157,865
41	189,710,367	28,162,521	28,162,521	-	1,818,145	-	1,946,446
42	173,688,198	27,054,898	27,054,898	-	1,632,372	-	1,750,508
43	157,700,969	25,907,192	25,907,192	-	1,460,864	-	1,569,228
44	141,795,158	24,722,507	24,722,507	-	1,302,861	-	1,401,863
45	126,014,690	23,504,874	23,504,874	-	1,157,657	-	1,247,724
46	110,402,359	22,259,593	22,259,593	-	1,024,602	-	1,106,178
47	94,998,434	20,993,335	20,993,335	-	903,100	-	976,645
48	79,839,067	19,714,117	19,714,117	-	792,589	-	858,579
49	64,954,609	18,430,725	18,430,725	-	692,515	-	751,437
50	50,368,422	17,152,750	17,152,750	-	602,333	-	654,683
51	36,095,551	15,889,373	15,889,373	-	521,466	-	567,743
52	22,142,575	14,648,460	14,648,460	-	449,291	-	489,987
53	8,508,389	13,438,044	8,508,389	4,929,655	243,893	713,577	420,800
54	-	12,265,731	-	12,265,731	-	1,711,314	359,568
55	-	11,138,386	-	11,138,386	-	1,497,858	305,673
56	-	10,061,780	-	10,061,780	-	1,304,172	258,498
57	-	9,040,254	-	9,040,254	-	1,129,413	217,425
58	-	8,076,969	-	8,076,969	-	972,596	181,855
59	-	7,174,485	-	7,174,485	-	832,696	151,222
60	-	6,334,839	-	6,334,839	-	708,669	124,999

The Projected Fiduciary Net Position and Benefit Payments are based on current employees in the Plan as of the Actuarial Valuation Date. The development of the Projected Fiduciary Net Position is shown in more detail earlier in this section.



## ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS – YEARS 61 TO 80

Year	Projected Beginning Fiduciary Net Position	Projected Benefit Payments	Projected Benefit Payments		Actuarial Present Values of Projected Benefit Payments		
			"Funded" Portion of Benefit Payments	"Unfunded" Portion of Benefit Payments	Present Value of "Funded" Benefit Payments (7.00%)	Present Value of "Unfunded" Benefit Payments (3.75%)	Present Value of Benefit Payments Using the Single Discount Rate (6.82%)
61	\$ -	\$ 5,558,690	\$ -	\$ 5,558,690	\$ -	\$ 599,366	\$ 102,681
62	-	4,845,836	-	4,845,836	-	503,617	83,798
63	-	4,195,349	-	4,195,349	-	420,254	67,918
64	-	3,605,651	-	3,605,651	-	348,128	54,644
65	-	3,074,521	-	3,074,521	-	286,118	43,620
66	-	2,599,473	-	2,599,473	-	233,166	34,526
67	-	2,177,761	-	2,177,761	-	188,279	27,078
68	-	1,806,445	-	1,806,445	-	150,532	21,027
69	-	1,482,567	-	1,482,567	-	119,077	16,155
70	-	1,202,982	-	1,202,982	-	93,129	12,272
71	-	964,230	-	964,230	-	71,948	9,208
72	-	762,841	-	762,841	-	54,864	6,820
73	-	595,228	-	595,228	-	41,262	4,982
74	-	457,663	-	457,663	-	30,579	3,586
75	-	346,471	-	346,471	-	22,313	2,541
76	-	258,062	-	258,062	-	16,019	1,772
77	-	188,967	-	188,967	-	11,306	1,215
78	-	135,940	-	135,940	-	7,839	818
79	-	96,019	-	96,019	-	5,337	541
80	-	66,552	-	66,552	-	3,565	351

### NOTES TO THE ACTUARIAL PRESENT VALUE OF PROJECTED BENEFIT PAYMENTS

The Projected Fiduciary Net Position and Benefit Payments are based on current employees in the Plan as of the Actuarial Valuation Date. The development of the Projected Fiduciary Net Position is shown in more detail earlier in this section.

The Funded and Unfunded Portion of Benefit Payments are split based on the time that the Projected Fiduciary Net Position is to reach \$0 (based on assets for current employees).

The Present Value ("PV") of the Funded and Unfunded Portion of Benefit Payments are determined separately. The PV of the Funded Portion of Benefit Payments uses the Expected Rate of Return on Plan Investments. The PV of the Unfunded Portion of Benefit Payments are determined using the High-Quality Municipal Bond Rate as of the Measurement Date, as described in the *Actuarial Assumptions Information* section of this report.

The Discount Rate used for GASB purposes is the rate such that when applied to the Total Projected Benefit Payments results in a Present Value that equals the sum of the Present Value of the Funded and Unfunded Portion of Benefit Payments. The Discount Rate is rounded to four decimal places; therefore, the resulting Present Value comparisons may show a slight difference due to rounding.



## SUMMARY OF PRINCIPAL PLAN PROVISIONS

Establishment of the Fund  
Administration  
Member Contributions  
Regular Retirement Pension Benefit  
Early Retirement Pension Benefit  
Surviving Spouse Benefit  
Termination Benefit – Vested  
Disability Benefit

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## **ESTABLISHMENT OF THE FUND**

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

## **ADMINISTRATION**

The Firefighters' Pension Fund is administered by a Board of Trustees whose duties are to manage the Pension Fund, determine applications for pensions, authorize payment of pensions, establish rules, pay expenses, and keep records.

## **MEMBER CONTRIBUTIONS**

Members contribute 9.455% of their pensionable salary.

## **REGULAR RETIREMENT PENSION BENEFIT**

### Tier I

*Eligibility:* Age 50 with at least 20 years of creditable service.

*Benefit:* 50% of final salary for the first 20 years of service, plus an additional 2.5% of final salary for each year of service beyond 20 years of service, pro-rated monthly, and not to exceed 75% of final salary. "Final salary" is based on the firefighter's pensionable salary attached to rank held on the last day of service.

*Annual Increase in Benefit:* A firefighter is entitled to receive an initial increase equal to 1/12 of 3% of the original monthly benefit for each full month that has passed since the pension began. The initial increase date will be the later of the first day of the month after the pensioner turns age 55 or the first day of the month after the benefit date anniversary. Subsequent increases of 3% of the current monthly benefit will be granted every January 1<sup>st</sup> thereafter.



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## REGULAR RETIREMENT PENSION BENEFIT - CONTINUED

### Tier II

*Eligibility:* Age 55 with at least 10 years of creditable service.

*Benefit:* 2.5% of final average salary for each year of service, and not to exceed 75% of final average salary. "Final average salary" is determined by dividing the total pensionable salary during 48 consecutive months of service within the last 60 months of service in which total pensionable salary was the highest, by the number of months of service in that period (or by dividing the total pensionable salary during 96 consecutive months of service within the last 120 months of service in which total pensionable salary was the highest, by the number of months of service in that period, if greater). Annual salary for this purpose will not exceed the salary cap, indexed by the lesser of 3% or the CPI-U for the 12 months ending with the September preceding each November 1<sup>st</sup>. The salary cap will not decrease.

*Annual Increase in Benefit:* The initial increase date will be the later of the January 1<sup>st</sup> after the pensioner turns age 60 or the January 1<sup>st</sup> after the benefit date anniversary. Subsequent increases will be granted every January 1<sup>st</sup> thereafter. The initial increase and subsequent increases will be the lesser of 3% of the original benefit or ½ of the CPI-U for the 12 months ending with the September preceding each November 1<sup>st</sup>.

## EARLY RETIREMENT PENSION BENEFIT

### Tier I

None.

### Tier II

*Eligibility:* Age 50 with at least 10 years of creditable service.

*Benefit:* The regular retirement pension benefit reduced by ½ of 1% for each month that the firefighters' age is between 50 and 55.

*Annual Increase in Benefit:* The initial increase date will be the later of the January 1<sup>st</sup> after the pensioner turns age 60 or the January 1<sup>st</sup> after the benefit date anniversary. Subsequent increases will be granted every January 1<sup>st</sup> thereafter. The initial increase and subsequent increases will be the lesser of 3% of the original benefit or ½ of the CPI-U for the 12 months ending with the September preceding each November 1<sup>st</sup>.



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## **SURVIVING SPOUSE BENEFIT**

### Tier I

*Eligibility:* Married to an active firefighter, a disabled pensioner at the time of death, or a retired pensioner (at least 12 months prior to the time of death if married post-retirement).

*Active Line of Duty Death Benefit:* An eligible surviving spouse is entitled to receive 100% of the firefighter's final pensionable salary attached to rank held on the last day of service.

#### *Non-Duty Death Benefit:*

*Disabled or Retired Pensioner:* An eligible surviving spouse is entitled to receive the greater of the pensioner's benefit at the time of death or 54% of the pensioner's final pensionable salary attached to rank held on the last day of service.

*Active Member:* An eligible surviving spouse is entitled to receive the greater of the firefighter's eligible benefit at the time of death or 54% of the firefighter's final pensionable salary attached to rank held on the last day of service.

*Annual Increase in Benefit:* None.

### Tier II

*Eligibility:* Married to an active firefighter, a disabled pensioner at the time of death, or a retired pensioner (at least 12 months prior to the time of death if married post-retirement).

*Active Line of Duty Death Benefit:* An eligible surviving spouse is entitled to receive 100% of the firefighter's final pensionable salary attached to rank held on the last day of service.

#### *Non-Duty Death Benefit:*

*Disabled or Retired Pensioner and Active Member:* An eligible surviving spouse is entitled to receive the greater of 66 $\frac{2}{3}$ % of the firefighter's earned pension benefit at the time of death or 54% of the firefighter's monthly salary at the time of death.

*Annual Increase in Benefit:* The initial increase date will be the January 1<sup>st</sup> after the surviving spouse turns age 60. Subsequent increases will be granted every January 1<sup>st</sup> thereafter. The initial increase and subsequent increases will be the lesser of 3% of the original benefit or  $\frac{1}{2}$  of the CPI-U for the 12 months ending with the September preceding each November 1<sup>st</sup>.





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## TERMINATION BENEFIT – VESTED

### Tier I

*Eligibility:* Age 60 with at least 10 but less than 20 years of creditable service.

*Benefit:* An accrual factor times final salary for each year of service. “Accrual factor” is a factor of 1.5% at 10 years of service, increasing ratably up to 2.4% at 19 years of service. “Final salary” is based on the firefighter’s pensionable salary attached to rank held on the last day of service.

*Annual Increase in Benefit:* A firefighter is entitled to receive an initial increase equal to 1/12 of 3% of the original monthly benefit for each full month that has passed since the pension began. The initial increase date will be the first day of the month after the benefit date anniversary. Subsequent increases of 3% of the current monthly benefit will be granted every January 1<sup>st</sup> thereafter.

### Tier II

None.



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## DISABILITY BENEFIT

### Tier I

*Eligibility:* Duty Disability, Non-Duty Disability with at least 7 years of creditable service, or Occupational Disease Disability with at least 5 years of creditable service.

*Benefit:* For a duty disability or an occupational disease disability with at least 5 years of creditable service, a firefighter is entitled to receive the greater of 65% of final salary or the regular retirement pension benefit at the time of disability. For a non-duty disability with at least 7 years of creditable service, a firefighter is entitled to receive 50% of their final salary. “Final salary” is based on the firefighter’s pensionable salary attached to rank held on the last day of service.

*Annual Increase in Benefit:* A firefighter is entitled to receive an initial increase equal to 3% of the original monthly benefit for each full year that has passed since the pension began. The initial increase date will be the later of the January 1<sup>st</sup> after following pensioner turns age 60 or the January 1<sup>st</sup> after the benefit date anniversary. Subsequent increases of 3% of the original monthly benefit will be granted every January 1<sup>st</sup> thereafter.

### Tier II

*Eligibility:* Duty Disability, Non-Duty Disability with at least 7 years of creditable service, or Occupational Disease Disability with at least 5 years of creditable service.

*Benefit:* For a duty disability or an occupational disease disability with at least 5 years of creditable service, a firefighter is entitled to receive the greater of 65% of final salary or the regular retirement pension benefit at the time of disability. For a non-duty disability, a firefighter is entitled to receive 50% of their final salary. “Final salary” is based on the firefighter’s pensionable salary attached to rank held on the last day of service.

*Annual Increase in Benefit:* The initial increase date will be the later of the January 1<sup>st</sup> after the pensioner turns age 60 or the January 1<sup>st</sup> after the benefit date anniversary. Subsequent increases will be granted every January 1<sup>st</sup> thereafter. The initial increase and subsequent increases will be the lesser of 3% of the original benefit or ½ of the CPI-U for the 12 months ending with the September preceding each November 1<sup>st</sup>.



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