

# City of Joplin Policemen's and Firemen's Pension Plan

Actuarial Valuation Report  
as of October 31, 2020



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February 22, 2021

Board of Trustees  
City of Joplin Policemen's and Firemen's Pension Plan  
602 S. Main  
Joplin, Missouri 64801

Dear Board Members:

The results of the October 31, 2020 Annual Actuarial Valuation of the City of Joplin Policemen's and Firemen's Pension Plan are presented in this report.

This report was prepared at the request of the City of Joplin and is intended for use by the Pension Plan and those designated or approved by the City. This report may be provided to parties other than the City only in its entirety and only with the permission of the City. GRS is not responsible for unauthorized use of this report.

The purposes of the valuation are to measure the Plan's funding progress and to determine the employer contribution rate for the fiscal year ending October 31, 2022. Information required by Statement Nos. 67 and 68 of the Governmental Accounting Standards Board (GASB) are provided in separate reports. This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

The contribution amount in this report is determined using the actuarial assumptions and methods disclosed in Section D of this report. This report includes risk measures in Section A, but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This valuation assumed the continuing ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our scope of expertise and was not performed.

The findings in this report are based on data and other information through October 31, 2020. The valuation was based upon information furnished by the City, concerning Pension Plan benefits, financial transactions, plan provisions and active members, terminated members, retirees and beneficiaries. We checked for internal reasonability and year-to-year consistency, but did not audit the data. We are not responsible for the accuracy or completeness of the information provided by the City.

This report was prepared using assumptions adopted by the Board. All actuarial assumptions used in this report are reasonable for the purposes of this valuation. Additional information about the actuarial assumptions is included in Section D of this report.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation and has no material limitations or known weaknesses. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge, the information contained in this report is accurate and fairly presents the actuarial position of the City of Joplin Policemen's and Firemen's Pension Plan as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, and with the Actuarial Standards of Practice issued by the Actuarial Standards Board.

This report does not fully reflect the recent and still developing impact of COVID-19, which is likely to influence demographic experience and economic expectations, at least in the short term. We will continue to monitor these developments and their impact.

Brad Lee Armstrong, Abra D. Hill and Derek Henning are Members of the American Academy of Actuaries (MAAA) and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

The signing actuaries are independent of the plan sponsor.

Gabriel, Roeder, Smith & Company will be pleased to review this valuation and report with the Board of Trustees and to answer any questions pertaining to the valuation.

Respectfully submitted,



Brad Lee Armstrong, ASA, EA, FCA, MAAA



Abra D. Hill, ASA, FCA, MAAA



Derek Henning, ASA, EA, MAAA

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## **SECTION A**

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### **SUMMARY OF VALUATION RESULTS**

# Introduction

This is the actuarial valuation of the City of Joplin Policemen's and Firemen's Pension Plan prepared as of October 31, 2020. Valuations are prepared annually, as of November 1 of each year, the first day of the plan year.

The primary purposes of the valuation report are to measure the Pension Plan's liabilities; to determine the required employer contribution rate based upon the Plan's funding policy and to analyze changes in the Plan's actuarial position.

## Changes Since the Last Actuarial Valuation

### Pension Plan Closure

During the 2020 plan year, fundamental changes to plan funding and plan membership occurred:

- The pension plan was closed to new hires,
- 128 Tier 2 members elected to transition to the Missouri Local Government Employees Retirement System (LAGERS), and
- Proposition B was passed, a general sales tax of ½-percent, to fund these plan changes.

These changes were reflected in a supplemental valuation of the October 31, 2019 valuation, along with updated actuarial assumptions and methods more appropriate to the new circumstances facing the plan. In particular:

- The assumed investment return was lowered to 5.75%,
- The Actuarial Cost Method utilized was the Aggregate Cost Method, and
- The Actuarial Value of Assets were restated as the Market Value of Assets less the Accumulated Contributions of transferring members.

In general, the results of the supplemental valuation are shown throughout this report, replacing those issued in the original actuarial valuation report as of October 31, 2019.

### Valuation Results

Section A of the report gives a summary of valuation results. A discussion of the results is given in the comments portion. Detailed valuation results, including the derivation of contributions, are shown in Section B.

### Plan Amendments

The principal provisions of the Plan are unchanged since the last valuation. These provisions of the Plan are summarized in Section C.

### Actuarial Assumptions and Methods

Actuarial assumptions, along with an explanation of the actuarial cost method, are set forth in Section D.



# Introduction

## Derivation of Actuarial Value of Assets

The impact of the Tier 2 members transferring to LAGERS was reflected as of the beginning of the period, October 31, 2019. For purposes of deriving the Actuarial Value of Assets, the cash-flows were likewise adjusted to reflect a transfer of assets as of the beginning of the year.

Specifically, the beginning of year Market Value of Assets was reduced by the Accumulated Contributions of transferring members (\$2,350,845) as of the same date while the Non-Investment Net Cash Flow was increased by the same amount (\$2,350,845).

This exercise is set forth on Page C-5. Otherwise, the Market Value of Assets is displayed as reported throughout this report.

## Plan Experience

Actuarial experience was unfavorable for the year ended October 31, 2020, resulting in an experience loss of \$1,129,577. The loss was primarily due to higher salary increases than expected. The market value rate of return on plan assets this year was 5.9%. The actuarial value rate of return on assets used to determine the contribution requirements and funded ratio for this valuation was 5.8% versus 5.75% expected. The aggregate experience loss resulted in a higher dollar contribution than last year. Please refer to Section B for more Gain/Loss detail.

The general sales tax of ½-percent to fund the Pension Plan took effect during the plan year. This resulted in a contribution in excess of the Actuarial Determined Contribution for the fiscal year ending 2020. The actual employer contribution of \$3,440,455 exceeded the expected contribution of \$2,921,839 by \$518,616 and served to mitigate the impact of the experience loss explained above.

## Funded Status

As of the valuation date, the Plan has an Unfunded Present Value of Future Benefits of \$32,979,725. The Plan's current funded ratio as of October 31, 2020 is 57.2% (57.3% on a market value basis) as compared to 55.3% on October 31, 2019. Valuation assets are 99.7% of market value (the market value exceeds actuarial value by \$113,454). In the absence of lower than expected investment returns in the near future, the scheduled recognition of this difference will put downward pressure on the City's contribution and assist funding progress for the next few years.

## Contribution Requirement

The Actuarially Determined Contribution (ADC) for the fiscal year ending October 31, 2022 is \$4,014,359. This compares with an ADC for the fiscal year ending October 31, 2021 of \$3,942,972.



## Summary of Valuation Results

The following is a summary of the key actuarial valuation results for the current and prior plan years.

Valuation Date:	October 31, 2020	October 31, 2019	
Fiscal Year Ending:	October 31, 2022	October 31, 2021	
<b>A. Summary of Data</b>		<i>After Transition</i>	<i>Before Transition</i>
(1) Participants			
(a) Active	57	63	192
(b) Retirees	134	130	130
(c) Disabled	3	4	4
(d) Beneficiaries	34	32	32
(e) Total Inactive	171	166	166
(f) Total Participants	228	229	358
(2) Total Annual Benefits on Valuation Date	\$ 3,724,703	\$ 3,564,860	\$ 3,564,860
(3) Refunds During Prior Plan Year	\$ 3,633,191	\$ 1,700,492	\$ 1,700,492
(4) Compensation			
(a) Current Compensation	\$ 3,600,244	\$ 3,824,339	\$ 9,342,201
(b) Average Compensation	\$ 63,162	\$ 60,704	\$ 48,657
(c) Projected Compensation to Contribution Fiscal Year	\$ 3,058,010	\$ 3,370,593	\$ 8,856,596
<b>B. Summary of Assets</b>			
(1) Market Value of Assets (MVA)	\$ 44,114,367	\$ 44,648,763	\$ 44,648,763
(2) Actuarial Value of Assets (AVA)	44,000,913	42,297,918	43,779,962
<b>C. Summary of Valuation Results</b>			
(1) Present Value of Future Benefits (PVFB)	\$ 76,980,638	\$ 76,427,319	N/A
(2) Unfunded Present Value of Future Benefits (UPVFB)	\$ 32,979,725	\$ 34,129,401	N/A
(3) Present Value of Future Member Contributions	\$ 2,868,656	\$ 3,261,652	N/A
(4) Funded Ratio (Based on AVA)	57.20%	55.30%	63.50%
<b>D. Actuarially Determined Contribution (ADC):</b>			
(1) City Normal Cost	\$ 3,928,939	\$ 3,868,938	N/A
(2) Administrative Expenses	\$ 85,420	\$ 74,034	N/A
(3) Total City Contribution	\$ 4,014,359	\$ 3,942,972	\$ 3,047,758

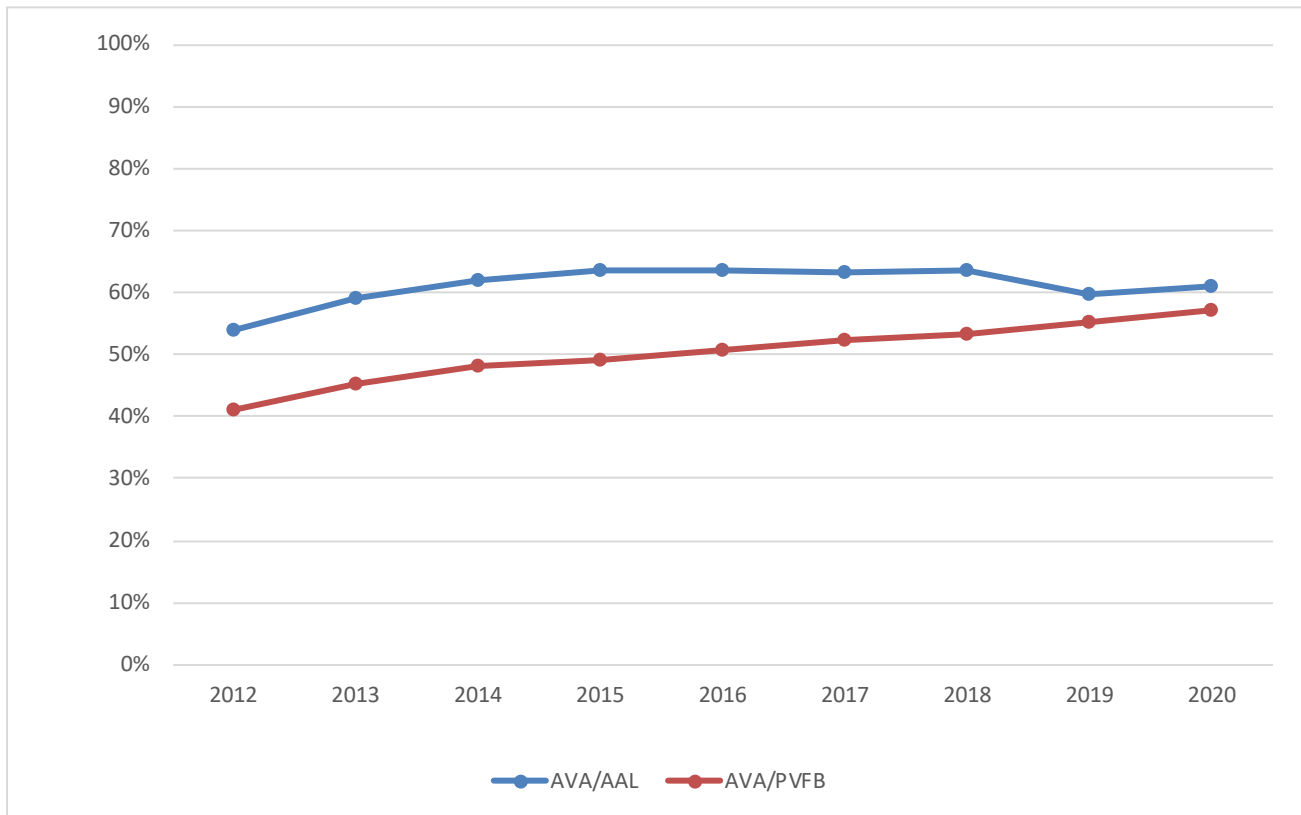




# Valuation Results - Funded Progress

## Funded Ratio

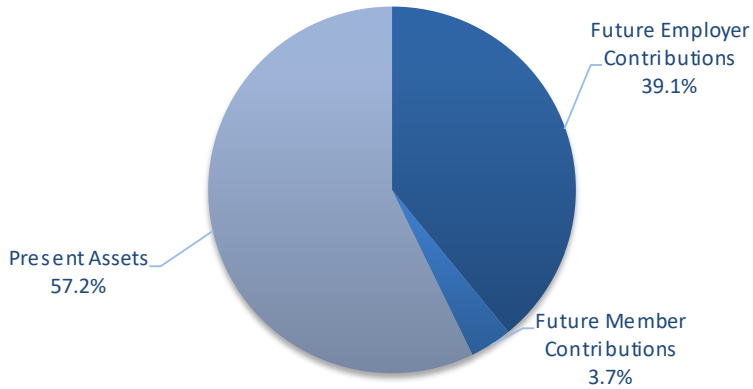
With the Fund closed to new hires, costs have been computed using the aggregate cost method. The design of the aggregate cost method is to target that all benefits are fully funded when the plan has no active members. This is being accomplished through level-dollar amortization. Under the aggregate cost method, the Present Value of Future Benefits (PVFB) is reduced by the actuarial value of assets and the present value of future member contributions. The remainder is financed by City contributions as a level dollar amount. The method does not generate an Actuarial Accrued Liability (AAL). The percentage of PVFB funded by the actuarial value of assets is shown below. For comparison purposes, the percentage of the AAL, calculated under the Entry Age Normal Cost Method, funded by the actuarial value of assets is also shown below.



# Status Measures

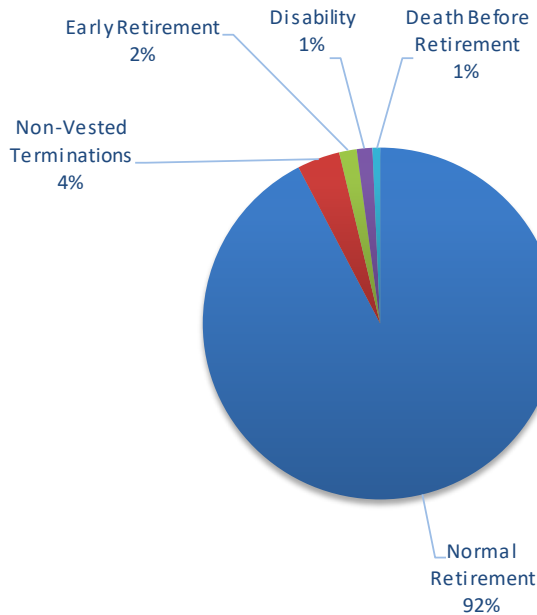
## Breakdown of Total Liability and Funding

Present assets fund 57.2% of the Present Value of Future Benefits. The remaining liability is projected to be funded by Future Employer Contributions (39.0%) and Future Member Contributions (3.8%).



## Expected Decrements for Current Active Members

The chart shows the expected future development of the present population in simplified terms. The pension fund presently covers 57 active members. About 92% of the present population is expected to receive monthly retirement benefits by retiring directly from active service. The remaining 8% of the present population is expected to become eligible for vested terminated, refunds, disability, or death-in-service benefits.



## Benefit Projection

The projection below shows the expected benefit payouts including refunds, assuming all valuation assumptions are met. It is important to understand that this projection is not a forecast, but a tool to help the plan sponsor anticipate future benefit payouts.

<u>Plan Year Beginning November 1,</u>	<u>Expected Benefit Payments</u>
2020	\$4,890,000
2021	5,068,000
2022	5,049,000
2023	4,897,000
2024	5,151,000
2025	5,437,000
2026	5,752,000
2027	6,307,000
2028	5,654,000
2029	5,379,000

No load for temporary child benefits is included.

## Risk Measures - Risks Associated with Measuring the Accrued Liability and Actuarially Determined Contribution

The determination of the accrued liability and the actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

- 1) **Investment Risk** – actual investment returns may differ from the expected returns;
- 2) **Asset/Liability Mismatch** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
- 3) **Contribution Risk** – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
- 4) **Salary and Payroll Risk** – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability and contributions differing from expected;
- 5) **Longevity Risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
- 6) **Other Demographic Risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example, if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise, if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The computed contribution shown on page B-1 may be considered as a minimum contribution rate that complies with the Board's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

## Risk Measures

(\$ in thousands)

Actuarial Valuation Date (9/30)	(1) Actuarial Value of Assets	(2) Present Value of Future Benefits (PVFB)	(3) Unfunded PVFB (UPVFB) (2) - (1)	(4) Payroll	(5) Funded Ratio (1) / (2)	(6) Retiree Liabilities (RetLiab)	(7) RetLiab / PVFB (6)/(2)	(8) PVFB / Payroll (2) / (4)	(9) Assets / Payroll (1) / (4)	(10) UPVFB / Payroll (3) / (4)	(11) Non-Invest. Cash Flow (NICF)	(12) NICF / Assets (11)/(1)	(13) Market Rate of Return	(14) 5-year Trailing Average
2016	\$ 38,952	\$ 76,938	\$ 37,986	\$ 8,906	50.6%	\$ 35,300	45.9%	863.9%	437.4%	426.5%	\$ (874)	(2.2)%	2.6%	N/A
2017 *	40,447	77,447	37,000	8,652	52.2%	38,354	49.5%	895.1%	467.5%	427.6%	(944)	(2.3)%	13.9%	N/A
2018	42,330	79,359	37,029	8,759	53.3%	38,541	48.6%	906.0%	483.3%	422.8%	7	0.0%	1.9%	4.8%
2019 *	42,298	76,427	34,129	3,824	55.3%	44,857	58.7%	1998.4%	1106.0%	892.4%	(943)	(2.2)%	11.6%	5.8%
2020	44,001	76,981	32,980	3,600	57.2%	46,986	61.0%	2,138.2%	1,222.2%	916.0%	(3,087)	(7.0)%	5.9%	7.1%

\* Revised actuarial assumptions.

(5). The funded ratio is the most widely known measure of a plan's financial strength, but the trend in the funded ratio is much more important than the absolute ratio. The funded ratio should trend to 100%. As it approaches 100%, it is important to re-evaluate the level of investment risk in the portfolio and potentially to re-evaluate the assumed rate of return.

(6) and (7). The ratio of retiree liabilities to total PVFB gives an indication of the maturity of the system. As the ratio increases, cash flow needs increase, and the liquidity needs of the portfolio change. A ratio on the order of 50% indicates a maturing system.

(8) and (9). The ratio of liabilities and assets to payroll gives an indication of both maturity and volatility. Many systems have ratios between 500% and 700%. Ratios significantly above that range may indicate difficulty in supporting the benefit level as a level % of payroll.

(10). The ratio of unfunded PVFB to payroll gives an indication of the plan sponsor's ability to actually pay off the unfunded PVFB. A ratio above approximately 300% or 400% may indicate difficulty in discharging the unfunded PVFB within a reasonable time frame

(11) and (12). A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means benefits and expenses exceed contributions, and existing funds may be used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

(13) and (14). Investment return is probably the largest single risk that most systems face. The year-by-year return and the five-year geometric average both give an indication of the reasonableness of the system's assumed return. Of course, past performance is not a guarantee of future results. Market rate shown is based on actuarial estimation method and will differ modestly from figures reported by the investment consultant.



## Other Observations

### General Implications of Contribution Allocation Procedure or Funding Policy on Future Expected Plan Contributions and Funded Status

Given the Plan's contribution allocation procedure, if all actuarial assumptions are met (including the assumption of the Plan earning 5.75% on the actuarial value of assets) and if the Actuarially Determined Contribution is made every year, it is expected that:

- 1) The unfunded actuarial accrued liabilities will be fully amortized at the end of the amortization period;
- 2) The funded status of the plan will increase gradually towards a 100% funded ratio; and
- 3) The unfunded actuarial accrued liability will decrease in all future years.

### Limitations of Funded Status Measurements

Unless otherwise indicated, a funded status measurement presented in this report is based upon the actuarial accrued liability and the actuarial value of assets. Unless otherwise indicated, with regard to any funded status measurements presented in this report:

- 1) The measurement is inappropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the Plan's benefit obligations, in other words, of transferring the obligations to an unrelated third party in an arm's length market value type transaction.
- 2) The measurement is dependent upon the actuarial cost method which, in combination with the Plan's amortization policy, affects the timing and amounts of future contributions. A funded status measurement in this report of 100% is not synonymous with no required future contributions. If the funded status were 100%, the plan would still require future normal cost contributions (i.e., contributions to cover the cost of the active membership accruing an additional year of service credit).
- 3) The measurement would produce a different result if the market value of assets were used instead of the actuarial value of assets.

### Limitations of Project Scope

Actuarial standards do not require the actuary to evaluate the ability of the Plan sponsor or other contributing entity to make required contributions to the plan when due. Such an evaluation was not within the scope of this project and is not within the actuary's domain of expertise. Consequently, the actuary performed no such evaluation.

### Risks to Future Employer Contribution Requirements

There are ongoing risks to future employer contribution requirements to which the Retirement System is exposed, such as:

- \* Actual and Assumed Investment Rate of Return
- \* Actual and Assumed Mortality Rates
- \* Amortization Policy



## **SECTION B**

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### **DETAILED VALUATION RESULTS**

## Contributions to Finance Benefits of the Pension Plan for the Fiscal Year Ending October 31

	Contribution Development for Fiscal Year Ending October 31	
	2022	2021
Development of Normal Cost		
a) Present value of future benefit payments	\$ 76,980,638	\$ 76,427,319
b) Present value of future member contributions	(2,868,656)	(3,261,652)
c) Actuarial value of assets	<u>(44,000,913)</u>	<u>(42,297,918)</u>
d) Unfunded present value of future benefit payments	30,111,069	30,867,749
e) Interest on item d) for one year	1,731,386	1,774,896
f) City contribution expected during fiscal year	(3,942,972)	(2,921,839)
g) Mid-year Interest on item f)	<u>(113,360)</u>	<u>(84,003)</u>
h) Total City present value of future normal cost	27,786,123	29,636,803
i) Closed level dollar amortization factor (9 years)	<u>7.0722</u>	<u>7.6602</u>
j) Item h) divided by item i)	3,928,939	3,868,938
Administrative Expenses	<u>85,420</u>	<u>74,034</u>
Total City Normal Cost and Administrative Expenses		
Dollar Amount	<b>\$ 4,014,359</b>	<b>\$ 3,942,972</b>
Expected Pay during Fiscal Year	<b>\$ 3,058,010</b>	<b>\$ 3,370,593</b>
Percent-of-Payroll	<b>131.27%</b>	<b>116.98%</b>

The amortization factors above assume continuous payments throughout the fiscal year.



## Derivation of Experience Gain (Loss)

### Based on Unfunded Present Value of Future Benefits (UPVFB)

	Year Ended September 30
	2020
<b>Derivation of Experience Gain (Loss)</b>	
(1) UPVFB at start of year	\$ 34,129,401
(2) Employer and Employee contributions*	4,123,153
(3) Interest accrual	1,843,900
(4) Expected UPVFB before changes:	
(1) - (2) + (3)	31,850,148
(5) Change from benefit provisions	0
(6) Change from revised actuarial assumptions	0
(7) Expected UPVFB after changes:	
(4) + (5) + (6)	31,850,148
(8) Actual UPVFB at end of year	32,979,725
(9) Gain (loss): (7) - (8)	(1,129,577)
(10) Gain (loss) as percent of present value of future benefits at start of year	(1.48)%

### Based on Entry Age Actuarial Accrued Liability (UAAL)

	Year Ended September 30
	2020
<b>Derivation of Experience Gain (Loss)</b>	
(1) UAAL at start of year	\$ 28,322,192
(2) Total Normal Cost	1,118,387
(3) Employer and Employee contributions*	4,123,153
(4) Interest accrual	1,542,139
Expected UAAL before changes:	
(5) (1) + (2) - (3) + (4)	26,859,565
(6) Change from Voluntary Separation Plan	0
(7) Change from revised actuarial assumptions	0
Expected UAAL after changes:	
(8) (4) + (5) + (6)	26,859,565
(9) Actual UAAL at end of year	27,867,906
(10) Gain (loss): (7) - (8)	(1,008,341)
(11) Gain (loss) as percent of Actuarial Accrued Liability at start of year	(1.43)%

\* Employee contributions for those who chose to remain with the City Plan was \$682,698 during the fiscal year (Source: Member data). Employer contributions was \$3,440,455 during the fiscal year.



## City Contributions: Historical Comparison

Fiscal Year Ending 10/31	Valuation Date 10/31	Estimated Contributions	Actual Contribution
2010 *	2009	\$ 2,206,690	\$ 1,797,683
2011 *	2010	2,214,118	2,653,556
2012 *	2010	2,214,118	2,473,301
2013 *	2011	2,580,017	3,718,194
2014	2012	2,737,752	2,919,862
2015	2013	2,721,986	2,662,322
2016	2014	2,708,565	2,619,993
2017	2015	2,657,867	2,601,983
2018	2016	2,706,972	2,620,298
2019	2017	2,814,812	2,999,709
2020	2018	2,921,839	3,440,455
2021	2019	3,942,972	
2022	2020	4,014,359	

\* Data for fiscal years prior to 2014 was taken from the October 31, 2011 valuation report.

## SECTION C

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### **SUMMARY OF THE PRINCIPAL PROVISIONS OF THE PLAN AND VALUATION DATA SUBMITTED BY THE PENSION PLAN**

# Summary of the Principal Provisions of the Plan as of October 31, 2020

**Covered Employees** – A person employed prior to February 1, 2020 by the City of Joplin, Missouri, in the Fire Department in active service in any capacity; or in the Police Department as a uniformed or sworn police officer in active service. Secretaries, clerks, dispatchers, jailers, animal wardens, street painters, cooks, temporary employees, seasonal employees, part-time employees, and other employees or associates are not covered.

**Credited Service** – Total time in complete and fractional years (based on the number of months) during which the Covered Employee makes the required Employee Contribution.

**Compensation** – Amounts paid by the City which constitute regular wages, longevity pay, stipends, overtime pay, sick pay, vacation pay, compensable time pay, amounts deferred, and employee salary reduction amounts contributed to the City's Flexible Benefit Plan.

**Average Monthly Compensation** – The Compensation of a participant during the highest thirty-six consecutive months out of the last sixty consecutive months immediately preceding retirement, divided by thirty-six. If the participant does not have thirty-six months in which Compensation was received, the average shall be based on the actual period (in months and days) in which Compensation was received.

**Employee Contributions** – 18.08% of Compensation for covered employees hired on or before January 31, 2009. 10.0% of Compensation for Covered Employees hired after January 31, 2009.

## **Normal Retirement:**

**Eligibility** – Age 60 with at least one year of continuous service, or any age with twenty (twenty-five if date of hire is after January 31, 2009) or more years of Credited Service.

**Monthly Amount** – A monthly benefit payable for life, equal to 50% (55% if hired after January 31, 2009) of the participant's Average Monthly Compensation, with the following adjustments:

1. For each year of Credited Service in excess of 20 (25 if hired after January 31, 2009) the participant shall receive an additional benefit of 1% of Average Monthly Compensation up to a maximum total benefit of 65% (60% if hired after January 31, 2009) of Average Monthly Compensation.
2. If the participant has less than 20 (25 if hired after January 31, 2009) years of Credited Service, the benefit shall be reduced by 1/20 (1/25 if hired after January 31, 2009) for each year less than 20 (25 if hired after January 31, 2009) years.

## **Early Retirement:**

**Eligibility** – For Participants hired after January 31, 2009, who have not attained age 60, any age with at least twenty but less than twenty-five years of Credited Service. Participants hired on or before January 31, 2009 are not eligible for an early retirement benefit.

**Monthly Amount** – A monthly benefit payable for life, equal to 2.0% of the participant's Average Monthly Compensation times the number of full years of Credited Service.



**Duty Disability Retirement:**

**Eligibility** – If a Covered Employee becomes physically or mentally unfit for the regular duties of employment as a result of disease or injury contracted or sustained while in the actual discharge and performance of the duties of employment.

**Monthly Amount** – A monthly benefit payable for life computed in the same manner as the normal retirement amount based on Credited Service and Average Monthly Compensation at time of disability. If the Covered Employee has less than 20 (25 if hired after January 31, 2009) years of service, the Covered Employee will receive an additional 10% of their monthly benefit for each Eligible Spouse and Qualified Child under age 18, up to a maximum of 130% of the monthly normal retirement benefit.

**Non-Duty Disability Retirement:**

**Eligibility** – If a Covered Employee with three or more years of Credited Service becomes physically or mentally unfit for the regular duties of employment under circumstances that do not qualify for the duty death benefit, and prior to retirement.

**Monthly Amount** – A monthly benefit payable for life for a participant with less than 20 (25 if hired after January 31, 2009) years of service shall be computed in the same manner as the normal retirement amount based on Credited Service and Average Monthly Compensation at time of disability. In addition, the covered employee will receive an additional benefit equal to 0.5% for each year of Credited Service times Average Monthly Compensation for each Eligible Spouse and Qualified Child under age 18, up to a maximum of 4% for each year of Credited Service times Average Monthly Compensation.

**Duty Death Before Retirement:**

**Eligibility** – Death as a result of a disease or injury contracted or sustained while in the actual discharge and performance of the duties of employment.

**Monthly Amount** – A monthly benefit payable for the life of the Eligible Spouse computed in the same manner as the normal retirement amount based on Credited Service and Average Monthly Compensation at time of death. In addition, a temporary benefit equal to 20% of the normal retirement amount payable to each Qualified Child under age 18. If a Covered Employee's Eligible Spouse does not survive them, then 100% of the normal retirement benefit is paid to the first Qualified Child, with an additional 20% of the normal retirement benefit for each additional Qualified Child. The maximum total monthly benefit payable to survivors is 150% of the normal retirement benefit.

**Non-Duty Death Before Retirement:**

**Eligibility** – Death of a Covered Employee after having completed three or more years of Credited Service under circumstances that do not qualify for the duty death benefit, and prior to retirement.

**Monthly Amount** – A monthly benefit payable for the life of the Eligible Spouse computed in the same manner as the normal retirement amount based on Credited Service and Average Monthly Compensation at time of death. In addition, a temporary benefit equal to 0.5% for each year of Credited Service times Average Monthly Compensation payable to each Qualified Child under age 18. If a Covered Employee's Eligible Spouse does not survive them, then 1.5% for each year of Credited Service times Average Monthly Compensation is paid to the first Qualified Child, with an additional 0.5% for each year of Credited Service times Average Monthly Compensation for each additional Qualified Child. The maximum total monthly benefit payable to survivors is 4% for each year of Credited Service times Average Monthly Compensation.



**Post-Retirement Benefit Adjustments** – The monthly retirement benefit payable to a participant who retired before April 9, 1972 shall be adjusted to one-half of the average monthly salary of all Covered Employees in the police and fire departments.

**Refund of Contributions:**

**Hired on or before January 31, 2009** – When a Covered Employee terminates employment for any reason, the Plan shall pay the participant their Accumulated Employee Contributions without interest (In addition to their monthly benefit amount).

**Hired after January 31, 2009** – When a Covered Employee attains twenty years of Credited Service or age 60, the Accumulated Employee Contributions will remain in the Plan. When a Covered Employee terminates employment without immediate eligibility for a monthly benefit amount, the Plan shall pay the participant their Accumulated Employee Contributions without interest.

**Survivor's Benefit** – Upon the death of a participant who has retired either after reaching age 60 or after acquiring 20 or more years of Credited Service, or after becoming disabled, the Eligible Spouse shall be entitled to a monthly survivor's benefit equal to 50%, plus 20% for each Qualified Child under the spouse's care, of the participant's monthly normal retirement benefit. In the event that no Eligible Spouse survives the participant, the monthly survivor's benefit payable on behalf of the surviving Qualified Children, if any, shall be equal to 40% of the participant's monthly normal retirement benefit for the first Qualified Child and an additional 15% for each additional Qualified Child. The overall maximum survivor's benefit is 100% of the participant's monthly normal retirement benefit.

*This is a brief summary of the City of Joplin, Missouri Policemen's and Firemen's Pension Plan benefit provisions. In the event that any description contained herein differs from the actual eligibility or benefit, the appropriate employee contract or governing document will prevail.*

# Financial Information Submitted by the City

## Reconciliation of Market Value of Assets

	<u>2020</u>	<u>2019</u>
Market Value BOY	\$44,648,763	\$40,913,192
Market Value Adjustment	0	0
Adjusted Market Value BOY	<u>\$44,648,763</u>	<u>\$40,913,192</u>
Employer Contributions	3,440,455	2,999,709
Employee Contributions	881,238	1,307,243
Transfers	0	0
Net Appreciation in Fair Value of Investments	1,752,952	3,548,745
Interest and Dividends	873,943	1,168,367
Change in Interest Receivable	(242)	(226)
Investment Expenses	(73,587)	(40,250)
Other Investment Income	0	1,548
Total Revenues	<u>\$ 6,874,759</u>	<u>\$ 8,985,136</u>
Benefits	3,690,544	3,475,039
Refunds of Contributions	3,633,191	1,700,492
Administrative Expenses	85,420	74,034
Conferences and Seminars	0	0
Other Expenses	0	0
Total Disbursements	<u>\$ 7,409,155</u>	<u>\$ 5,249,565</u>
Adjustment	0	0
Market Value EOY	\$44,114,367	\$44,648,763

## Statement of Assets

	<u>2020</u>	<u>2019</u>
Cash & Equivalents	\$ 1,296,623	\$ 122,968
Receivables & Accruals	13	255
Real Estate	7,352,017	6,139,561
Mutual Funds	<u>35,465,714</u>	<u>38,385,979</u>
Total Current Assets - Market Value	\$44,114,367	\$44,648,763

## Derivation of Actuarial Value of Assets

Valuation Date October 31,	2020	2021	2022	2023	2024
A. Funding Value Beginning of Year	\$42,297,918				
B. Market Value End of Year	44,114,367				
C. Market Value Beginning of Year	42,297,918 <sup>1</sup>				
D. Non-Investment Net Cash Flow	(736,617) <sup>2</sup>				
E. Investment Return:					
E1. Market Total: B-C-D	2,553,066				
E2. Assumed Rate	5.75%				
E3. Amount for Immediate Recognition	2,411,249				
E4. Amount for Phased-In Recognition	141,817				
F. Phased-In Recognition of Investment Return:					
F1. Current Year: 0.20 x E4	\$ 28,363				
F2. First Prior Year	0	\$ 28,363			
F3. Second Prior Year	0	0	\$ 28,363		
F4. Third Prior Year	0	0	0	\$ 28,363	
F5. Fourth Prior Year	0	0	0	0	\$28,365
F6. Total Recognized Investment Gain	28,363	28,363	28,363	28,363	28,365
G. Valuation Assets					
G1. Preliminary Valuation Assets: A+D+E3+F6	44,000,913				
G2. Market Value Corridor	20%				
G3. Upper Corridor Limit = (100%+G2)*B	52,937,240				
G4. Lower Corridor Limit = (100%-G2)*B	35,291,494				
G5. Adjustment to Remain within Corridor	0				
G6. Valuation Assets	44,000,913				
H. Difference Between Funding & Market Values	(113,454)				
I. Funding Value Rate of Return	5.8%				
J. Market Value Rate of Return	5.9% <sup>3</sup>				
K. Ratio of Funding Value to Market Value	99.7%				

<sup>1</sup> Decreased by the Accumulated Contributions of transferring members (\$2,350,845) as of the beginning of year.

<sup>2</sup> Increased by the Accumulated Contributions of transferring members (\$2,350,845) as of the beginning of year.

<sup>3</sup> The Market Value Rate of Return without adjustment to cashflows. The formula of  $E1 / ((B+C-E1) / 2)$ , using the adjusted cashflows above, yields 6.1%.

The Funding Value of Assets recognizes assumed investment income (line E3) fully each year. Differences between actual and assumed investment income (line E4) are phased-in over a closed five-year period. During periods when investment performance exceeds the assumed rate, the Funding Value of Assets will tend to be less than Market Value. During periods when investment performance is less than the assumed rate, the Funding Value of Assets will tend to be greater than Market Value. If assumed rates are exactly realized for four consecutive years, it will become equal to Market Value.





## Retirees and Beneficiaries as of October 31, 2020

### By Type of Benefit

Type of Benefit Being Paid	No.	Annual Benefits	Average Benefits
Normal Retirement	133	\$ 3,419,288	\$ 25,709
Duty Disability Retirement	1	17,386	17,386
Non-Duty Disability Retirement	2	37,176	18,588
Survivor Benefits	35	250,853	7,167
<b>Total</b>	<b>171</b>	<b>\$ 3,724,703</b>	<b>\$ 21,782</b>

### By Attained Age

Attained Age	No.	Annual Allowances
Under 35	1	\$ 1,200
35-39	0	0
40-44	2	55,814
45-49	15	512,045
50-54	20	618,078
55-59	20	600,501
60-64	19	490,633
65-69	26	530,374
70-74	30	544,690
75-79	9	94,196
80-84	16	151,572
85-89	8	88,059
90-94	4	32,001
90-95	1	5,540
<b>Totals</b>	<b>171</b>	<b>\$3,724,703</b>

Average Age on Valuation Date: 66.3 years

Average Age at Retirement: 49.7 years



## Active Participants as of October 31, 2020 by Nearest Age and Years of Service

Near Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
30-34		2	3					5	\$ 270,357
35-39			11	1				12	722,032
40-44			5	5				10	579,391
45-49			4	14				18	1,184,047
50-54			2	9				11	779,444
55-59									
60+			1					1	64,973
<b>Totals</b>		<b>2</b>	<b>26</b>	<b>29</b>				<b>57</b>	<b>\$ 3,600,244</b>

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 43.9 years  
Service: 15.4 years  
Annual Pay: \$63,162

## Data Reconciliation

	<u>Active</u>	<u>Retirees</u>	<u>Beneficiaries</u>	<u>Disabled</u>	<u>Total</u>
October 31, 2019	63	130	32	4	229
New Disabled Participant(s)					0
New Retired Participant(s)	(6)	6			0
Terminated Non-Vested					0
Deaths		(2)		(1)	(3)
New Entrants/Additions			2		2
Data Correction/Suspended Benefits					0
October 31, 2020	<b>57</b>	<b>134</b>	<b>34</b>	<b>3</b>	<b>228</b>

## **SECTION D**

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### **ACTUARIAL COST METHOD, ACTUARIAL ASSUMPTIONS AND DEFINITIONS OF TECHNICAL TERMS**

## Actuarial Cost Method

The actuarial cost method is a procedure for allocating the actuarial present value of pension benefits to time periods. The method used for your valuation is known as the aggregate actuarial cost method, and has the following characteristics:

- The present value of future benefits is reduced by the actuarial value of assets and the present value of future member contributions. This unfunded amount is projected to the applicable fiscal year with interest less the intervening City contribution expected from the prior valuation. The unfunded present value of future normal costs are amortized using level dollar payments over a closed 10-year period and beginning in the fiscal year ending 2021.
- The actuarial value of assets used for funding purposes is described as follows: prior year actuarial value of assets are increased by actual member and City contributions and expected investment income and decreased by actual refunds, benefit payments and administrative expenses. Added to this amount is 20% of the difference between expected and actual investment income for the current year and each of the previous four years. The Actuarial Value of Assets is limited to no less than 80% and no more than 120% of the market value of assets.

## Actuarial Assumptions Used for the Valuation

Funding objective contribution requirements and actuarial present values are calculated by applying estimates of future System activities (actuarial assumptions) to the benefit provisions and people information of the fund, using the actuarial cost method described on the previous page.

The principal areas of activity which require estimates are:

- (i) rates of inflation impacting assets of the System and active member pays
- (ii) long-term rates of investment return to be generated by the assets of the System
- (iii) rates of salary increase to members
- (iv) rates of mortality among members, retirants and beneficiaries
- (v) rates of withdrawal of active members
- (vi) rates of retirement due to age and service
- (vii) rates of disability among members

In making a valuation, the monetary effect of each activity is calculated for as long as a present covered person survives - - - a period of time which can be as long as a century.

Actual activities of the Pension Plan will not coincide exactly with estimated activities due to the nature of the activities. Each valuation provides a complete recalculation of estimated future activities and takes into account the effect of differences between estimated and actual activities to date. The result is a continual series of adjustments (usually small) to the computed contribution rate. From time-to-time one or more of the estimates are modified to reflect experience trends (but not random or temporary year to-year fluctuations).

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Rates of salary increases, retirements, terminations, and mortality were updated for the October 31, 2017 valuation in accordance with the experience study for the five-year period ending October 31, 2016. The actuarial cost method and assumed rate of interest were first used in the restatement of the October 31, 2019 valuation performed due to the Pension Plan Closure, effective February 28, 2020.

All actuarial assumptions are expectations of future experience, not market measures.

## Actuarial Assumptions Used for the Valuation

**Rates of Investment Return.** 5.75% per annum, compounded annually, net of investment expenses.

**Rates of Price Inflation.** 2.50% per annum, compounded annually. This is the rate at which growth in the supply of money and credit is estimated to exceed growth in the supply of goods and services. It may be thought of as the rate of depreciation of the purchasing power of the dollar. There are a number of indices for measuring the inflation rate. The recent inflation rate, as measured by the Consumer Price Index, has been:

	Year Ended October 31					Average for Period
	2020	2019	2018	2017	2016	
Actual	1.20%	1.80%	2.50%	2.00%	1.60%	1.82%
Assumed	2.50%	2.50%	2.50%	2.50%	2.50%	2.50%

**Rates of Real Investment Return of Prices.** 3.25% per annum, compounded annually. This is the rate of return assumed to be produced by investing a pool of assets in an inflation-free environment. Recent real investment return for the Pension Plan has been:

	Year Ended October 31					Average for Period
	2020	2019	2018	2017	2016	
Total Investment Return	5.90%	11.60%	1.90%	13.90%	2.60%	7.07%
Less Inflation Rate	1.20%	1.80%	2.50%	2.00%	1.60%	1.82%
Actual Real Investment Return	4.70%	9.80%	-0.60%	11.90%	1.00%	5.25%
Assumed Real Investment Return	3.25%	4.25%	4.25%	4.50%	4.50%	4.15%
Assumed Investment Return	5.75%	6.75%	6.75%	7.00%	7.00%	6.65%

The total investment return rate was computed using the approximate formula  $i = I$  divided by  $\frac{1}{2}(A + B - I)$ , where  $I$  is actual realized investment income plus market value adjustments,  $A$  is the beginning of year asset value, and  $B$  is the end of year asset value.

The preceding investment return rates reflect the particular characteristics of this Pension Plan and should not be used to measure an investment advisor's performance or for comparison with other retirement systems. Such use will usually mislead.

## Actuarial Assumptions Used for the Valuation

**Rates of Salary Increases.** Employee salaries are estimated to increase between the date of hire and date of retirement. Salary increases occur in recognition of (i) individual merit and seniority, (ii) inflation related depreciation of the purchasing power of salaries, and (iii) competition from other employers for personnel.

A schedule of estimated rates of increases in individual salaries for sample ages follows:

<b>Annual Rates of Salary Increases for Sample Ages</b>						
<b>Years of Service</b>	<b>Police</b>			<b>Fire</b>		
	<b>Merit &amp; Seniority</b>	<b>Wage Inflation</b>	<b>Total</b>	<b>Merit &amp; Seniority</b>	<b>Wage Inflation</b>	<b>Total</b>
0 - 4	8.5%	2.5%	11.0%	8.5%	2.5%	11.0%
5 - 9	2.0%	2.5%	4.5%	1.5%	2.5%	4.0%
10 - 14	1.0%	2.5%	3.5%	0.5%	2.5%	3.0%
15 - 19	0.8%	2.5%	3.3%	0.0%	2.5%	2.5%
20 - 24	0.5%	2.5%	3.0%	0.0%	2.5%	2.5%
25 - 29	0.5%	2.5%	3.0%	0.0%	2.5%	2.5%
30 plus	0.5%	2.5%	3.0%	0.0%	2.5%	2.5%

**Rates of Withdrawal from Active Membership.** These rates represent the probabilities of members leaving employment for reasons other than death or disability and prior to their becoming eligible to retire.

<b>Rates of Termination</b>		
<b>Years of Service</b>	<b>Terminations</b>	
	<b>Police</b>	<b>Fire</b>
0	20.0%	10.0%
1	14.0%	10.0%
2	7.0%	10.0%
3	7.0%	10.0%
4	7.0%	10.0%
5 - 9	7.0%	5.0%
10 plus	1.0%	1.0%



## Actuarial Assumptions Used for the Valuation

**Rates of Disability.** These rates represent the probabilities of active members becoming disabled.

<b>Rates of Disability</b>	
<b>Age</b>	<b>Disabilities</b>
22	0.08%
27	0.09%
32	0.12%
37	0.17%
42	0.26%
47	0.41%
52	0.68%
57	1.16%
60 plus	0.00%

**Rates of Retirement.** These rates represent the probabilities of eligible members retiring. Active members age 60 and over are assumed to retire immediately.

<b>Years of Service</b>	<b>Retirement Rates</b>			
	<b>Hired on or before January 31, 2009</b>		<b>Hired after January 31, 2009*</b>	
	<b>Police</b>	<b>Fire</b>	<b>Police</b>	<b>Fire</b>
20	80%	50%	25%	15%
21	50%	30%	15%	10%
22	50%	30%	15%	10%
23	50%	30%	15%	10%
24	50%	30%	15%	10%
25	50%	30%	75%	50%
26	50%	30%	50%	30%
27	50%	30%	50%	30%
28 plus	50%	30%	50%	30%

\* Members hired after January 31, 2009 with between 20 and 25 years of Credited Service are eligible for Early Retirement.

## Actuarial Assumptions Used for the Valuation

**Rates of Mortality.** This estimate is used to measure the probabilities of members dying before retirement and the probabilities of each benefit payment being made after retirement. The mortality tables used to measure retired life mortality are described below:

The RP-2014 tables adjusted for mortality improvement back to the observation period base years for men and women of 2017 and 2006 respectively. Future mortality improvement was modeled using the 2-dimensional MP-2016 mortality projection scales. Sample values follow:

<b>Mortality Rates</b>						
<b>2020 Age</b>	<b>Male</b>			<b>Female</b>		
	<b>Service</b>	<b>Disability</b>	<b>Death-in- Service*</b>	<b>Service</b>	<b>Disability</b>	<b>Death-in- Service*</b>
25	0.064%	0.217%	0.052%	0.032%	0.088%	0.015%
30	0.084%	0.490%	0.045%	0.060%	0.226%	0.022%
35	0.128%	0.902%	0.055%	0.108%	0.452%	0.031%
40	0.215%	1.502%	0.074%	0.165%	0.714%	0.043%
45	0.332%	2.033%	0.118%	0.209%	0.908%	0.065%
50	0.459%	2.302%	0.190%	0.263%	1.133%	0.105%
55	0.588%	2.398%	0.286%	0.368%	1.473%	0.170%
60	0.803%	2.749%	0.485%	0.554%	1.815%	0.261%
65	1.245%	3.582%	0.936%	0.829%	2.148%	0.381%

\* 75% of pre-retirement deaths are assumed to be non-duty.

<b>For Healthy Retirees Based on Ages as of 2020</b>				
<b>Sample Ages</b>	<b>Value at Retirement of \$1 Monthly for Life</b>		<b>Future Life Expectancy (Years)</b>	
	<b>Men</b>	<b>Women</b>	<b>Men</b>	<b>Women</b>
45	\$180.22	\$187.29	38.31	42.39
50	172.90	179.99	33.48	37.37
55	164.04	170.72	28.78	32.43
60	152.98	159.39	24.19	27.64
65	139.84	145.92	19.82	23.07
70	125.01	130.02	15.81	18.73
75	108.74	111.70	12.19	14.68
80	91.27	91.65	9.02	11.03



## Miscellaneous and Technical Assumptions

**Pay Increase Timing.** Beginning of (Fiscal) year. This is equivalent to assuming that reported pays represent amounts paid to members during the year ended on the valuation date.

**Decrement Timing.** Decrements of all types are assumed to occur at the middle of the year.

**Eligibility Testing.** Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

**Benefit Service.** Exact fractional service is used to determine the amount of benefit payable.

**Data Adjustments.** Prior year salaries were used for members with lower valuation pay resulting from a leave of absence. Annualized salaries were used for new members.

**Decrement Relativity.** Decrement rates are used directly, without adjustment for multiple decrement table effects.

**Decrement Operation.** Disability and withdrawal do not operate during normal retirement eligibility. Withdrawal does not operate during early retirement eligibility.

**Normal Form of Benefit.** The assumed normal form of benefit is 50% joint and survivor.

**Loads.** A 1.0% load was applied to disability and death-in-service decrements to approximate the temporary benefits for Qualified Children.

**Incidence of Contributions.** Contributions are assumed to be received continuously throughout the fiscal year.

**Financing of Present Value of Future Benefits.** Present Value of Future Benefits were amortized using 9 future level-dollar payments, taking into account the amount to be contributed one year in the future as determined in the previous valuation.

**Marital Status.** Participants are assumed to have an 85% probability of being married at time of retirement. Males are assumed to be two years older than their spouses.

**Cost-of-Living Increases.** Covered Employees retired prior to April 9, 1972 are eligible for Cost-of-Living increases. An annual increase of 2.5% is assumed. This does not apply to the any current retiree as of the valuation date.

**Data Adjustments.** Estimated annualized pay and previous year pay was used for new active members and those employees with military leave of absence respectively. One disabled retiree whose benefit is paid primarily by disability insurance is assumed to have the full benefit paid by the Plan beginning at age 65.

## Definitions of Technical Terms

**Accrued Service.** Service credited under the system which was rendered before the date of the actuarial valuation.

**Actuarial Accrued Liability.** The difference between the actuarial present value of system benefits and the actuarial present value of future normal costs. Also referred to as “past service liability.”

**Actuarial Assumptions.** Estimates of future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (salary increases and investment income) consist of an underlying rate in an inflation-free environment plus a provision for a long-term average rate of inflation.

**Actuarial Cost Method.** A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future benefits” between future normal costs and actuarial accrued liability. Sometimes referred to as the “actuarial funding method.”

**Actuarial Equivalent.** One series of payments is said to be actuarially equivalent to another series of payments if the two series have the same actuarial present value.

**Actuarial Gain (Loss).** The difference between actual unfunded actuarial accrued liabilities and anticipated unfunded actuarial accrued liabilities -- during the period between two valuation dates. It is a measurement of the difference between actual and expected experience.

**Actuarial Present Value.** The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payments.

**Amortization.** Paying off an interest-discounted amount with periodic payments of interest and (generally) principal -- as opposed to paying off with a lump sum payment.

**Normal Cost.** The portion of the actuarial present value of future benefits that is assigned to the current year by the actuarial cost method. Sometimes referred to as “current service cost.”

**Unfunded Actuarial Accrued Liabilities.** The difference between actuarial accrued liabilities and valuation assets. Sometimes referred to as “unfunded past service liability” or “unfunded supplemental present value.”