



February 28, 2019 E-Mail

Mr. Jeff Kempker
 Assistant Executive Director, Member Services
 Missouri Local Government
 Employees Retirement System
 P.O. Box 1665
 Jefferson City, Missouri 65102

Re: The City of Joplin (#3166) – Police and Fire Departments

Dear Jeff:

As you requested, we have determined the initial computed employer contribution rate for the City of Joplin Police and Fire departments based upon the benefit provisions being considered by the subdivision (L-11, 5 year FAC, non-contributory, and regular retirement). The cost to the employer is shown under three scenarios for members if the departments were to join LAGERS. The first scenario assumes that **only new members** would be covered under LAGERS. The second scenario assumes that all members would join LAGERS and that prior service would be granted for **eligibility purposes only**. The third scenario assumes that all members would join LAGERS and that prior service would be granted for **eligibility and benefit purposes**.

| As of December 31, 2018 | New Employees Only | | All Members (Prior Service for Vesting Only) | | All Members (Prior Service for Vesting & Benefits) | |
|--|--------------------|-------|--|-------------|--|--------------|
| | Police | Fire | Police | Fire | Police | Fire |
| Current Service Cost | 15.0% | 18.7% | 15.0% | 18.7% | 15.0% | 18.7% |
| Disability Cost | 1.0 | 1.2 | 1.0 | 1.2 | 1.0 | 1.2 |
| Prior Service Cost | 0.0 | 0.0 | 3.3 | 2.7 | 11.4 | 13.3 |
| Total Employer Contribution Rate | 16.0% | 19.9% | 19.3% | 22.6% | 27.4% | 33.2% |
| Increase in Unfunded Actuarial Accrued Liability | \$0 | \$0 | \$2,539,309 | \$1,749,156 | \$ 8,724,548 | \$ 8,536,609 |

The results above are based upon a 30-year amortization of the increase in the unfunded actuarial accrued liability (UAAL). A summary of the active member data used for the initial valuation is shown below:

Active Members as of December 31, 2018

| <u>Division</u> | <u>Number</u> | <u>Payroll</u> | <u>Avg. Payroll</u> | <u>Avg. Age</u> | <u>Avg. Service</u> |
|-----------------|---------------|----------------|---------------------|-----------------|---------------------|
| Police | 101 | \$4,355,062 | \$43,119 | 34.4 years | 7.6 years |
| Fire | 86 | \$3,633,205 | \$42,247 | 37.7 years | 8.9 years |

Below are projections needed to comply with Missouri state disclosure requirements (Section 105.660 of the RSMo) regarding the adoption of LAGERS benefits by a political subdivision. The following projections correspond with the second scenario and assume that all members would join LAGERS and that prior service would be granted for **eligibility purposes only**.

Police Division:

L-11 Benefit Program, Non-contributory, 5 year FAS, Normal Retirement

| Valuation Year | Estimated Projected Payroll | L-11 Benefit Program | | |
|----------------|-----------------------------|---------------------------------|----------------|--------------------|
| | | Estimated Employer Contribution | | Unfunded Actuarial |
| | | As a % of Payroll | Annual Dollars | Accrued Liability |
| 2018 | \$ 4,355,062 | 19.3% | \$840,527 | \$ 2,539,309 |
| 2019 | 4,496,602 | 19.3 | 867,844 | 2,574,097 |
| 2020 | 4,642,742 | 19.3 | 896,049 | 2,606,555 |
| 2021 | 4,793,631 | 19.3 | 925,171 | 2,636,356 |
| 2022 | 4,949,424 | 19.3 | 955,239 | 2,663,144 |
| 2023 | 5,110,280 | 19.3 | 986,284 | 2,686,533 |
| 2024 | 5,276,364 | 19.3 | 1,018,338 | 2,706,103 |
| 2025 | 5,447,846 | 19.3 | 1,051,434 | 2,721,397 |
| 2026 | 5,624,901 | 19.3 | 1,085,606 | 2,731,921 |
| 2027 | 5,807,710 | 19.3 | 1,120,888 | 2,737,138 |

Fire Division:

L-11 Benefit Program, Non-contributory, 5 year FAS, Normal Retirement

| Valuation Year | Estimated Projected Payroll | L-11 Benefit Program | | |
|----------------|-----------------------------|---------------------------------|----------------|--------------------|
| | | Estimated Employer Contribution | | Unfunded Actuarial |
| | | As a % of Payroll | Annual Dollars | Accrued Liability |
| 2018 | \$ 3,633,205 | 22.6% | \$821,104 | \$ 1,749,156 |
| 2019 | 3,751,284 | 22.6 | 847,790 | 1,773,119 |
| 2020 | 3,873,201 | 22.6 | 875,343 | 1,795,477 |
| 2021 | 3,999,080 | 22.6 | 903,792 | 1,816,005 |
| 2022 | 4,129,050 | 22.6 | 933,165 | 1,834,457 |
| 2023 | 4,263,244 | 22.6 | 963,493 | 1,850,568 |
| 2024 | 4,401,799 | 22.6 | 994,807 | 1,864,048 |
| 2025 | 4,544,857 | 22.6 | 1,027,138 | 1,874,583 |
| 2026 | 4,692,565 | 22.6 | 1,060,520 | 1,881,832 |
| 2027 | 4,845,073 | 22.6 | 1,094,986 | 1,885,425 |



The following projections correspond with the third scenario and assume that all members would join LAGERS and that prior service would be granted for **eligibility and benefit purposes**.

Police Division:

L-11 Benefit Program, Non-contributory, 5 year FAS, Normal Retirement

| Valuation Year | Estimated Projected Payroll | L-11 Benefit Program | | |
|-------------------|-----------------------------------|------------------------------------|-------------------|-----------------------|
| | | Estimated Employer Contribution | | Unfunded Actuarial |
| | | As a % of Payroll | Annual Dollars | Accrued Liability |
| 2018 | \$ 4,355,062 | 27.4% | \$1,193,287 | \$ 8,724,548 |
| 2019 | 4,496,602 | 27.4 | 1,232,069 | 8,844,073 |
| 2020 | 4,642,742 | 27.4 | 1,272,111 | 8,955,591 |
| 2021 | 4,793,631 | 27.4 | 1,313,455 | 9,057,980 |
| 2022 | 4,949,424 | 27.4 | 1,356,142 | 9,150,017 |
| 2023 | 5,110,280 | 27.4 | 1,400,217 | 9,230,376 |
| 2024 | 5,276,364 | 27.4 | 1,445,724 | 9,297,613 |
| 2025 | 5,447,846 | 27.4 | 1,492,710 | 9,350,160 |
| 2026 | 5,624,901 | 27.4 | 1,541,223 | 9,386,317 |
| 2027 | 5,807,710 | 27.4 | 1,591,313 | 9,404,240 |

Fire Division:

L-11 Benefit Program, Non-contributory, 5 year FAS, Normal Retirement

| Valuation Year | Estimated Projected Payroll | L-11 Benefit Program | | |
|-------------------|-----------------------------------|------------------------------------|-------------------|-----------------------|
| | | Estimated Employer Contribution | | Unfunded Actuarial |
| | | As a % of Payroll | Annual Dollars | Accrued Liability |
| 2018 | \$ 3,633,205 | 33.2% | \$1,206,224 | \$ 8,536,609 |
| 2019 | 3,751,284 | 33.2 | 1,245,426 | 8,653,559 |
| 2020 | 3,873,201 | 33.2 | 1,285,903 | 8,762,675 |
| 2021 | 3,999,080 | 33.2 | 1,327,695 | 8,862,858 |
| 2022 | 4,129,050 | 33.2 | 1,370,845 | 8,952,913 |
| 2023 | 4,263,244 | 33.2 | 1,415,397 | 9,031,541 |
| 2024 | 4,401,799 | 33.2 | 1,461,397 | 9,097,330 |
| 2025 | 4,544,857 | 33.2 | 1,508,893 | 9,148,745 |
| 2026 | 4,692,565 | 33.2 | 1,557,932 | 9,184,124 |
| 2027 | 4,845,073 | 33.2 | 1,608,564 | 9,201,661 |



It is our understanding that the City of Joplin is considering making a lump sum payment to cover a portion of its unfunded actuarial accrued liability. By paying off a portion of its unfunded actuarial accrued liability, the prior service cost component of the computed employer contribution rate becomes smaller. A lump sum contribution of \$1,000,000 for the Police division would reduce the computed employer contribution rate by 1.30% of payroll. A lump sum contribution of \$1,000,000 for the Fire division would reduce the computed employer contribution rate by 1.60% of payroll.

The long term cost (C) of providing retirement benefits depends only on the benefits (B) that are paid to participants, the expenses (E) of administering the plan, and the investment return (I) generated on invested assets: $C = B + E - I$. For a given level of benefits, the cost of providing those benefits is lowered if administrative expenses are lowered or investment income is increased.

The long term costs are financed by a series of employer and member contributions. The series of contributions is flexible. If more is contributed in early years, less has to be contributed in later years, and vice-versa. Over time the series of contributions has to have the same value as benefits and expenses. The actuary determines each year's contribution based on a funding method and a set of actuarial assumptions. The chosen funding method and assumptions do not affect the long term cost of providing retirement benefits, but have a strong impact on the series of contributions made to fund the benefits.

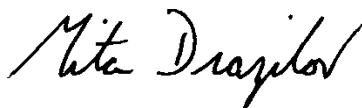
The methods and assumptions used were the same as those used in the annual actuarial valuations as of February 28, 2018. In particular, the assumed rate of investment return was 7.25% and the assumed rate of payroll growth was 3.25%.

If the City participates in LAGERS for the Police and Fire Departments, the actuarial valuations will be prepared using the LAGERS assumptions, as adopted by the LAGERS Retirement Board. If future experience follows the LAGERS assumptions, the contribution rates calculated in this report will remain approximately level. If future experience is worse than the LAGERS assumptions, the contribution rates will gradually increase over time.

Mita D. Drazilov is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the Academy of Actuaries to render the actuarial opinions herein. GRS provides consulting services to both LAGERS and the City of Joplin Policemen's and Firemen's Pension Plan although the signing actuaries are different individuals. It is my opinion that my ability to act fairly in this assignment has not been impaired.

Please call if you have any questions.

Sincerely,



Mita D. Drazilov, ASA, FCA, MAAA

MDD:rmg

