



October 22, 2019 E-Mail

Mr. Jeff Pabst  
 Education and Outreach Coordinator  
 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 Tier II members would join LAGERS and that prior service would be granted for **eligibility purposes only**. The third scenario assumes that all Tier II members would join LAGERS and that prior service would be granted for **eligibility and benefit purposes**.

	New Employees Only		Tier II Members (Prior Service for Vesting Only)		Tier II Members (Prior Service for Vesting & Benefits)	
	Police	Fire	Police	Fire	Police	Fire
<b>As of August 31, 2019</b>						
Current Service Cost	15.4%	18.6%	15.4%	18.6%	15.4%	18.6%
Disability Cost	1.0	1.2	1.0	1.2	1.0	1.2
Prior Service Cost	<u>0.0</u>	<u>0.0</u>	<u>2.2</u>	<u>2.0</u>	<u>5.5</u>	<u>6.8</u>
Total Employer Contribution Rate	16.4%	19.8%	18.6%	21.8%	21.9%	26.6%
Increase in Unfunded Actuarial Accrued Liability	\$0	\$0	\$1,162,306	\$952,365	\$2,939,725	\$3,215,576

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 Tier II Members as of August 31, 2019**

Division	Number	Payroll	Avg. Payroll	Avg. Age	Avg. Service
Police	70	\$3,036,200	\$43,374	31.6 years	3.9 years
Fire	63	\$2,692,812	\$42,743	33.0 years	5.1 years

Below are projections needed to comply with Missouri state disclosure requirements (Section 105.665 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 Tier II 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
2019	\$ 3,036,200	18.6%	\$564,733	\$ 1,162,306
2020	3,134,877	18.6	583,087	1,178,229
2021	3,236,761	18.6	602,038	1,193,086
2022	3,341,956	18.6	621,604	1,206,726
2023	3,450,570	18.6	641,806	1,218,987
2024	3,562,714	18.6	662,665	1,229,693
2025	3,678,502	18.6	684,201	1,238,651
2026	3,798,053	18.6	706,438	1,245,651
2027	3,921,490	18.6	729,397	1,250,468
2028	4,048,938	18.6	753,102	1,252,856

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
2019	\$ 2,692,812	21.8%	\$587,033	\$ 952,365
2020	2,780,328	21.8	606,112	965,412
2021	2,870,689	21.8	625,810	977,585
2022	2,963,986	21.8	646,149	988,762
2023	3,060,316	21.8	667,149	998,809
2024	3,159,776	21.8	688,831	1,007,581
2025	3,262,469	21.8	711,218	1,014,921
2026	3,368,499	21.8	734,333	1,020,657
2027	3,477,975	21.8	758,199	1,024,604
2028	3,591,009	21.8	782,840	1,026,560



The following projections correspond with the third scenario and assume that all Tier II 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
2019	\$ 3,036,200	21.9%	\$664,928	\$ 2,939,725
2020	3,134,877	21.9	686,538	2,979,999
2021	3,236,761	21.9	708,851	3,017,575
2022	3,341,956	21.9	731,888	3,052,075
2023	3,450,570	21.9	755,675	3,083,087
2024	3,562,714	21.9	780,234	3,110,164
2025	3,678,502	21.9	805,592	3,132,819
2026	3,798,053	21.9	831,774	3,150,525
2027	3,921,490	21.9	858,806	3,162,708
2028	4,048,938	21.9	886,717	3,168,747

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
2019	\$ 2,692,812	26.6%	\$716,288	\$ 3,215,576
2020	2,780,328	26.6	739,567	3,259,629
2021	2,870,689	26.6	763,603	3,300,731
2022	2,963,986	26.6	788,420	3,338,468
2023	3,060,316	26.6	814,044	3,372,390
2024	3,159,776	26.6	840,500	3,402,008
2025	3,262,469	26.6	867,817	3,426,789
2026	3,368,499	26.6	896,021	3,446,156
2027	3,477,975	26.6	925,141	3,459,482
2028	3,591,009	26.6	955,208	3,466,088



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 1.90% of payroll. A lump sum contribution of \$1,000,000 for the Fire division would reduce the computed employer contribution rate by 2.10% 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.

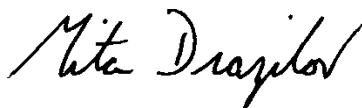
The methods and assumptions used were the same as those used in the annual actuarial valuations as of February 28, 2019. In particular, the assumed rate of investment return was 7.25% and the assumed rate of payroll growth was 3.25%.

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

