



December 8, 2020 E-Mail

Mr. Jeff Pabst
 Education and Outreach Coordinator
 Missouri Local Government
 Employees Retirement System
 P.O. Box 1665
 Jefferson City, Missouri 65102

Re: City of Hannibal (#1961) – Police and Fire Departments

Dear Jeff:

As you requested, we have determined the initial computed employer contribution rate for the City of Hannibal Police and Fire departments based upon the benefit provisions being considered by the subdivision (L-11, 5 year FAC, 0%, 2%, 4%, 6% member contribution rates, and regular retirement). The cost to the employer is shown assuming that **only new members** would be covered under LAGERS.

	New Employees Only							
	0% Member Contribution Rate		2% Member Contribution Rate		4% Member Contribution Rate		6% Member Contribution Rate	
	Police	Fire	Police	Fire	Police	Fire	Police	Fire
As of October 31, 2020								
Normal Cost Rate	15.0%	19.0%	13.1%	17.1%	11.2%	15.2%	9.3%	13.3%
Casualty Rate	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.2
Prior Service Cost Rate	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>	<u>0.0</u>
Total Employer Contribution Rate	16.0%	20.2%	14.1%	18.3%	12.2%	16.4%	10.3%	14.5%
Increase in Unfunded Actuarial Accrued Liability	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

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 October 31, 2020					
Division	Number	Payroll	Avg. Payroll	Avg. Age	Avg. Service
Police	35	\$1,932,807	\$55,223	36.3 years	10.9 years
Fire	38	\$1,853,842	\$48,785	36.7 years	10.1 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 projections assume that all only new members would join LAGERS.

Police Division:

L-11 Benefit Program, 0% Member Contribution Rate, 5 year FAS, Rule of 80 Retirement

Valuation Year	Estimated Projected Payroll	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability
		As a % of Payroll	Annual Dollars	
2020	\$ 1,932,807	16.0%	\$309,249	\$ -
2021	1,995,623	16.0	319,300	-
2022	2,060,481	16.0	329,677	-
2023	2,127,447	16.0	340,392	-
2024	2,196,589	16.0	351,454	-
2025	2,267,978	16.0	362,876	-
2026	2,341,687	16.0	374,670	-
2027	2,417,792	16.0	386,847	-
2028	2,496,370	16.0	399,419	-
2029	2,577,502	16.0	412,400	-

L-11 Benefit Program, 2% Member Contribution Rate, 5 year FAS, Rule of 80 Retirement

Valuation Year	Estimated Projected Payroll	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability
		As a % of Payroll	Annual Dollars	
2020	\$ 1,932,807	14.1%	\$272,526	\$ -
2021	1,995,623	14.1	281,383	-
2022	2,060,481	14.1	290,528	-
2023	2,127,447	14.1	299,970	-
2024	2,196,589	14.1	309,719	-
2025	2,267,978	14.1	319,785	-
2026	2,341,687	14.1	330,178	-
2027	2,417,792	14.1	340,909	-
2028	2,496,370	14.1	351,988	-
2029	2,577,502	14.1	363,428	-



Police Division (continued):

L-11 Benefit Program, 4% Member Contribution Rate, 5 year FAS, Rule of 80 Retirement

Valuation Year	Estimated Projected Payroll	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability
		As a % of Payroll	Annual Dollars	
2020	\$ 1,932,807	12.2%	\$235,802	\$ -
2021	1,995,623	12.2	243,466	-
2022	2,060,481	12.2	251,379	-
2023	2,127,447	12.2	259,549	-
2024	2,196,589	12.2	267,984	-
2025	2,267,978	12.2	276,693	-
2026	2,341,687	12.2	285,686	-
2027	2,417,792	12.2	294,971	-
2028	2,496,370	12.2	304,557	-
2029	2,577,502	12.2	314,455	-

L-11 Benefit Program, 6% Member Contribution Rate, 5 year FAS, Rule of 80 Retirement

Valuation Year	Estimated Projected Payroll	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability
		As a % of Payroll	Annual Dollars	
2020	\$ 1,932,807	10.3%	\$199,079	\$ -
2021	1,995,623	10.3	205,549	-
2022	2,060,481	10.3	212,230	-
2023	2,127,447	10.3	219,127	-
2024	2,196,589	10.3	226,249	-
2025	2,267,978	10.3	233,602	-
2026	2,341,687	10.3	241,194	-
2027	2,417,792	10.3	249,033	-
2028	2,496,370	10.3	257,126	-
2029	2,577,502	10.3	265,483	-



Fire Division:

L-11 Benefit Program, 0% Member Contribution Rate, 5 year FAS, Rule of 80 Retirement

Valuation Year	Estimated Projected Payroll	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability
		As a % of Payroll	Annual Dollars	
2020	\$ 1,853,842	20.2%	\$374,476	\$ -
2021	1,914,092	20.2	386,647	-
2022	1,976,300	20.2	399,213	-
2023	2,040,530	20.2	412,187	-
2024	2,106,847	20.2	425,583	-
2025	2,175,320	20.2	439,415	-
2026	2,246,018	20.2	453,696	-
2027	2,319,014	20.2	468,441	-
2028	2,394,382	20.2	483,665	-
2029	2,472,199	20.2	499,384	-

L-11 Benefit Program, 2% Member Contribution Rate, 5 year FAS, Rule of 80 Retirement

Valuation Year	Estimated Projected Payroll	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability
		As a % of Payroll	Annual Dollars	
2020	\$ 1,853,842	18.3%	\$339,253	\$ -
2021	1,914,092	18.3	350,279	-
2022	1,976,300	18.3	361,663	-
2023	2,040,530	18.3	373,417	-
2024	2,106,847	18.3	385,553	-
2025	2,175,320	18.3	398,084	-
2026	2,246,018	18.3	411,021	-
2027	2,319,014	18.3	424,380	-
2028	2,394,382	18.3	438,172	-
2029	2,472,199	18.3	452,412	-



Fire Division (continued):

L-11 Benefit Program, 4% Member Contribution Rate, 5 year FAS, Rule of 80 Retirement

Valuation Year	Estimated Projected Payroll	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability
		As a % of Payroll	Annual Dollars	
2020	\$ 1,853,842	16.4%	\$304,030	\$ -
2021	1,914,092	16.4	313,911	-
2022	1,976,300	16.4	324,113	-
2023	2,040,530	16.4	334,647	-
2024	2,106,847	16.4	345,523	-
2025	2,175,320	16.4	356,752	-
2026	2,246,018	16.4	368,347	-
2027	2,319,014	16.4	380,318	-
2028	2,394,382	16.4	392,679	-
2029	2,472,199	16.4	405,441	-

L-11 Benefit Program, 6% Member Contribution Rate, 5 year FAS, Rule of 80 Retirement

Valuation Year	Estimated Projected Payroll	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability
		As a % of Payroll	Annual Dollars	
2020	\$ 1,853,842	14.5%	\$268,807	\$ -
2021	1,914,092	14.5	277,543	-
2022	1,976,300	14.5	286,564	-
2023	2,040,530	14.5	295,877	-
2024	2,106,847	14.5	305,493	-
2025	2,175,320	14.5	315,421	-
2026	2,246,018	14.5	325,673	-
2027	2,319,014	14.5	336,257	-
2028	2,394,382	14.5	347,185	-
2029	2,472,199	14.5	358,469	-



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.

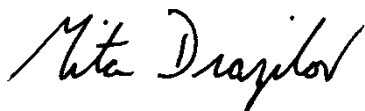
The methods and assumptions used in the initial valuation were the same as those used in the LAGERS annual actuarial valuations as of February 29, 2020. In particular, the assumed rate of investment return was 7.25% and the assumed rate of payroll growth was 3.25%.

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 Drazilov is a Member of the American Academy of Actuaries, and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.

Please call if you have any questions.

Sincerely,



Mita D. Drazilov, ASA, FCA, MAAA

MDD:rmn

cc: Judith Kermans (GRS)
Michael Gano (GRS)

