



Cass County

Supplemental Actuarial Valuation of Alternate
LAGERS Benefits
February 29, 2020



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November 3, 2020

Cass County
Harrisonville, Missouri

Ladies and Gentlemen:

Submitted in this report are the results of an actuarial valuation prepared to determine the employer contribution rates required to support, for your employees, certain benefits provided by the Missouri Local Government Employees Retirement System (LAGERS). This report contains the information needed to comply with Missouri state disclosure requirements regarding changes in LAGERS benefits by a political subdivision (Sections 105.660 - 105.685 RSMo).

The contribution requirement for benefits likely to accrue as a result of the future service of your employees is described in this report as the normal cost rate plus the casualty rate. This contribution rate, expressed as a percent of active employee payroll, will depend on the benefit plan adopted.

The contribution requirement to pay for benefits likely to result from service rendered by your employees prior to the valuation date, the liability for which is not covered by present employer account balances, is described in this report as the prior service cost rate. The prior service cost rate is the rate of contribution designed to pay for any unfunded actuarial accrued liability.

Section 70.730 of the Revised Statutes of Missouri requires participating employers to contribute the normal cost rate, casualty rate, and prior service cost rate for the benefit plan in effect. These contributions are mandatory.

The actuarial assumptions and methods used to determine the stated costs are described in Appendix I of this report. In our opinion, they do produce results which, in the aggregate, are reasonable. Additional miscellaneous and technical assumptions as well as disclosures required by the actuarial standards of practice may be found in the LAGERS Compiled Annual Actuarial Valuation report as of February 29, 2020. Annual actuarial valuation results for the political subdivision and information pertaining to those results may be found in the political subdivision's annual actuarial valuation report as of February 29, 2020.

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. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

The computed contribution rates will permit the System to continue to operate in accordance with the actuarial principles of level cost financing and the state law which governs LAGERS. Summary provisions of the law as well as benefit illustrations can be found in Appendices II and III.

In accordance with 105.675 RSMo, note that this entire report must be available as public information for at least 45 calendar days prior to the date final official action is taken by your governing body to adopt an alternate benefit plan. You may wish to make notice of this report in the official minutes of the next meeting of your governing body. This action would not be binding on your subdivision, yet would establish the beginning date of the 45 day waiting period. The statement of cost must also be provided to the Joint Committee on Public Employee Retirement. The statement can be mailed to the State Capitol, Room 219-A, Jefferson City, MO 65101 or e-mailed to JCPER@senate.mo.gov.

The valuation was based on the same data as was used in your February 29, 2020 annual actuarial valuation. If you have any questions concerning this report or LAGERS in general, please contact the LAGERS office in Jefferson City.

Mita D. 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.

Respectfully submitted,



Mita D. Drazilov, ASA, FCA, MAAA



Alternate Plan Provisions Affecting Employer Contribution Rates

The law governing LAGERS provides for a member contribution rate of 0%, 2%, 4% or 6%, with benefits based on either a 5 year or 3 year Final Average Salary (FAS).

Member Contribution Rate - 0% Plan. Under the 0% plan, there is no individual employee contribution to the plan, no individual account maintained for each employee, and no refund paid to employees who terminate before being eligible for a benefit.

Member Contribution Rate - 2%, 4% or 6% Plan. Under any plan other than 0%, each covered member contributes a percentage of compensation to LAGERS. If an employee terminates before being eligible for an immediate benefit, the member's contributions, plus any interest credited to the member's individual account, are refunded upon request.

The law further provides for nine different benefit programs (benefit formula factors) and allows an employer to elect "rule of 80" eligibility for benefits. Under the rule of 80, employees are eligible for unreduced benefits at the earlier of (i) attainment of their minimum service retirement age or (ii) such time as their years of age plus years of LAGERS credited service equals 80.

In total this allows for 144 different combinations of benefit plans, giving employers considerable latitude in designing the retirement program that best suits their particular situation.

The applicable combinations of these items may be changed from time to time, however, there are limitations on the frequency of changes. A more detailed description of plan provisions may be found in Appendix II of this report.

Cass County

Computed Employer Contribution Rates - General Employees

As of February 29, 2020

Benefit Plan Information

<u>Benefit Plans</u>	<u>Present Plan</u>	<u>Alternate Plan</u>
# Benefit Program:	L-3	L-12
Final Average Salary:	3 years	3 years
Member Contribution Rate:	0%	0%
Retirement Eligibility:	Regular	Regular

Actuarial Information

Employer Contribution Rates (as a percent of payroll)

	<u>Present Plan</u>	<u>Alternate Plan</u>
Normal Cost Rate	8.0%	11.0%
Casualty Rate	0.3	0.4
Prior Service Cost Rate ¹	<u>2.8</u>	<u>4.9</u>
Total Employer Contribution Rate	11.1%	16.3%

Increase in Employer Contribution Rate for Alternate Plan as a percent of payroll

5.2%

Increase in Actuarial Accrued Liability ¹

\$1,999,112

Employer contribution rates shown above are for the fiscal year beginning in 2021. If the alternate plan is adopted prior to the fiscal year beginning in 2021, 5.2% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

1 The increase in the actuarial accrued liability due to adoption of the alternate plan was amortized over a 20 year period to compute the increase in the Prior Service Cost Rate.

It was assumed that all service credited prior to April 1, 2011 would continue to be covered under the 2.00% benefit multiplier (i.e., L-6 benefit program).

If you have any questions, please call the LAGERS office at 1-800-447-4334.



Cass County

Projected Estimated Employer Contribution Rates - General Employees

As of February 29, 2020

Valuation Date Feb. 28/29	Estimated Projected Payroll	Present Plan			Alternate Plan			Change Due to Proposed Provisions		
		Estimated Employer Contribution		Estimated Difference	Estimated Employer Contribution		Estimated Difference	Estimated Employer Contribution		Estimated Difference
		As a % of Payroll	Annual Dollars	Between AAL and AVA	As a % of Payroll	Annual Dollars	Between AAL and AVA	As a % of Payroll	Annual Dollars	Between AAL and AVA
2020	\$6,846,572	11.1%	\$759,969	\$1,500,277	16.3%	\$1,115,991	\$3,499,389	5.2%	\$356,022	\$1,999,112
2021	7,069,086	11.1	784,669	1,407,642	16.3	1,152,261	3,401,499	5.2	367,592	1,993,857
2022	7,298,831	11.1	810,170	1,301,746	16.3	1,189,709	3,285,086	5.2	379,539	1,983,340
2023	7,536,043	11.1	836,501	1,181,416	16.3	1,228,375	3,148,437	5.2	391,874	1,967,021
2024	7,780,964	11.1	863,687	1,045,383	16.3	1,268,297	2,989,698	5.2	404,610	1,944,315
2025	8,033,845	11.1	891,757	892,283	16.3	1,309,517	2,806,873	5.2	417,760	1,914,590
2026	8,294,945	11.1	920,739	720,645	16.3	1,352,076	2,597,808	5.2	431,337	1,877,163
2027	8,564,531	11.1	950,663	528,881	16.3	1,396,019	2,360,175	5.2	445,356	1,831,294
2028	8,842,878	11.1	981,559	315,284	16.3	1,441,389	2,091,471	5.2	459,830	1,776,187
2029	9,130,272	11.1	1,013,460	78,012	16.3	1,488,234	1,788,990	5.2	474,774	1,710,978

AAL = Actuarial Accrued Liability
 AVA = Actuarial Value of Assets

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.665 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) For purposes of the above projections, it was assumed that all actuarial assumptions would be realized. In particular, it was assumed that the actuarial value of assets would earn 7.25% in each year.
- 3) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 4) Due to the estimated nature of the above projections, certain but not all aspects of the Missouri LAGERS funding policy have been incorporated in the above projections.
- 5) Differences between fiscal end dates of the employer and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 6) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.

Other disclosures required by Section 105.665 of the Revised Statutes of Missouri (RSMo):

- 1) As of February 29, 2020, the actuarial value of assets is \$10,510,802; the estimated market value of assets is \$10,584,896; the actuarial accrued liability is \$12,011,079; and the funded ratio is 87.5%. These results are based on the assets and liabilities associated with the Employer Accumulation Fund and the Member Deposit Fund for this division.
- 2) Under Section 70.730 of the Revised Statutes of Missouri, the computed employer contribution rate shall not exceed the contribution rate for the immediately preceding fiscal year by more than one percent (not including the effects of any benefit changes). As of February 29, 2020, there is no difference between the capped and uncapped employer contribution rate.



Cass County

Computed Employer Contribution Rates - Police Employees

As of February 29, 2020

Benefit Plan Information

<u>Benefit Plans</u>	<u>Present Plan</u>	<u>Alternate Plan</u>
# Benefit Program:	L-3	L-12
Final Average Salary:	3 years	3 years
Member Contribution Rate:	0%	0%
Retirement Eligibility:	Regular	Regular

Actuarial Information

Employer Contribution Rates (as a percent of payroll)

	<u>Present Plan</u>	<u>Alternate Plan</u>
Normal Cost Rate	8.0%	11.0%
Casualty Rate	0.5	0.7
Prior Service Cost Rate ¹	<u>0.5</u>	<u>3.3</u>
Total Employer Contribution Rate	9.0%	15.0%

Increase in Employer Contribution Rate for Alternate Plan as a percent of payroll

6.0%
\$1,912,403

Increase in Actuarial Accrued Liability ¹

Employer contribution rates shown above are for the fiscal year beginning in 2021. If the alternate plan is adopted prior to the fiscal year beginning in 2021, 6.0% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

¹ The increase in the actuarial accrued liability due to adoption of the alternate plan was amortized over a 20 year period to compute the increase in the Prior Service Cost Rate.

It was assumed that all service credited prior to April 1, 2011 would continue to be covered under the 2.00% benefit multiplier (i.e., L-6 benefit program).

If you have any questions, please call the LAGERS office at 1-800-447-4334.

Cass County

Projected Estimated Employer Contribution Rates - Police Employees

As of February 29, 2020

Valuation Date Feb. 28/29	Estimated Projected Payroll	Present Plan			Alternate Plan			Change Due to Proposed Provisions		
		Estimated Employer Contribution		Estimated Difference Between AAL and AVA	Estimated Employer Contribution		Estimated Difference Between AAL and AVA	Estimated Employer Contribution		Estimated Difference Between AAL and AVA
		As a % of Payroll	Annual Dollars		As a % of Payroll	Annual Dollars		As a % of Payroll	Annual Dollars	
2020	\$5,002,453	9.0%	\$450,221	\$95,121	15.0%	\$750,368	\$2,007,524	6.0%	\$300,147	\$1,912,403
2021	5,165,033	9.0	464,853	73,521	15.0	774,755	1,980,897	6.0	309,902	1,907,376
2022	5,332,897	9.0	479,961	49,429	15.0	799,935	1,946,744	6.0	319,974	1,897,315
2023	5,506,216	9.0	495,559	22,634	15.0	825,932	1,904,338	6.0	330,373	1,881,704
2024	5,685,168	9.0	511,665	(7,090)	15.0	852,775	1,852,893	6.0	341,110	1,859,983
2025	5,869,936	9.0	528,294	(39,989)	15.0	880,490	1,791,558	6.0	352,196	1,831,547
2026	6,060,709	9.0	545,464	(76,325)	15.0	909,106	1,719,418	6.0	363,642	1,795,743
2027	6,257,682	9.0	563,191	(116,382)	15.0	938,652	1,635,482	6.0	375,461	1,751,864
2028	6,461,057	9.0	581,495	(160,466)	15.0	969,159	1,538,681	6.0	387,664	1,699,147
2029	6,671,041	9.0	600,394	(208,905)	15.0	1,000,656	1,427,861	6.0	400,262	1,636,766

AAL = Actuarial Accrued Liability
 AVA = Actuarial Value of Assets

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.665 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) For purposes of the above projections, it was assumed that all actuarial assumptions would be realized. In particular, it was assumed that the actuarial value of assets would earn 7.25% in each year.
- 3) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 4) Due to the estimated nature of the above projections, certain but not all aspects of the Missouri LAGERS funding policy have been incorporated in the above projections.
- 5) Differences between fiscal end dates of the employer and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 6) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.

Other disclosures required by Section 105.665 of the Revised Statutes of Missouri (RSMo):

- 1) As of February 29, 2020, the actuarial value of assets is \$10,060,549; the estimated market value of assets is \$10,131,469; the actuarial accrued liability is \$10,155,670; and the funded ratio is 99.1%. These results are based on the assets and liabilities associated with the Employer Accumulation Fund and the Member Deposit Fund for this division.
- 2) Under Section 70.730 of the Revised Statutes of Missouri, the computed employer contribution rate shall not exceed the contribution rate for the immediately preceding fiscal year by more than one percent (not including the effects of any benefit changes). As of February 29, 2020, there is no difference between the capped and uncapped employer contribution rate.



Cass County

Computed Employer Contribution Rates - General Employees

As of February 29, 2020

Benefit Plan Information

<u>Benefit Plans</u>	<u>Present Plan</u>	<u>Alternate Plan</u>
# Benefit Program:	L-3	L-6
Final Average Salary:	3 years	3 years
Member Contribution Rate:	0%	0%
Retirement Eligibility:	Regular	Regular

Actuarial Information

Employer Contribution Rates (as a percent of payroll)

	<u>Present Plan</u>	<u>Alternate Plan</u>
Normal Cost Rate	8.0%	12.5%
Casualty Rate	0.3	0.5
Prior Service Cost Rate ¹	<u>2.8</u>	<u>6.0</u>
Total Employer Contribution Rate	11.1%	19.0%

Increase in Employer Contribution Rate for Alternate Plan as a percent of payroll

7.9%

Increase in Actuarial Accrued Liability ¹

\$2,998,536

Employer contribution rates shown above are for the fiscal year beginning in 2021. If the alternate plan is adopted prior to the fiscal year beginning in 2021, 7.9% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

¹ The increase in the actuarial accrued liability due to adoption of the alternate plan was amortized over a 20 year period to compute the increase in the Prior Service Cost Rate.

It was assumed that all service for active members would now be covered under the 2.00% benefit multiplier (i.e., L-6 benefit program). Currently only service credited prior to April 1, 2011 is covered under the 2.00% benefit multiplier.

If you have any questions, please call the LAGERS office at 1-800-447-4334.



Cass County

Projected Estimated Employer Contribution Rates - General Employees

As of February 29, 2020

Valuation Date Feb. 28/29	Estimated Projected Payroll	Present Plan			Alternate Plan			Change Due to Proposed Provisions		
		Estimated Employer Contribution		Estimated Difference	Estimated Employer Contribution		Estimated Difference	Estimated Employer Contribution		Estimated Difference
		As a % of Payroll	Annual Dollars	Between AAL and AVA	As a % of Payroll	Annual Dollars	Between AAL and AVA	As a % of Payroll	Annual Dollars	Between AAL and AVA
2020	\$6,846,572	11.1%	\$759,969	\$1,500,277	19.0%	\$1,300,849	\$4,498,813	7.9%	\$540,880	\$2,998,536
2021	7,069,086	11.1	784,669	1,407,642	19.0	1,343,126	4,398,296	7.9	558,457	2,990,654
2022	7,298,831	11.1	810,170	1,301,746	19.0	1,386,778	4,276,626	7.9	576,608	2,974,880
2023	7,536,043	11.1	836,501	1,181,416	19.0	1,431,848	4,131,818	7.9	595,347	2,950,402
2024	7,780,964	11.1	863,687	1,045,383	19.0	1,478,383	3,961,727	7.9	614,696	2,916,344
2025	8,033,845	11.1	891,757	892,283	19.0	1,526,431	3,764,042	7.9	634,674	2,871,759
2026	8,294,945	11.1	920,739	720,645	19.0	1,576,040	3,536,265	7.9	655,301	2,815,620
2027	8,564,531	11.1	950,663	528,881	19.0	1,627,261	3,275,702	7.9	676,598	2,746,821
2028	8,842,878	11.1	981,559	315,284	19.0	1,680,147	2,979,447	7.9	698,588	2,664,163
2029	9,130,272	11.1	1,013,460	78,012	19.0	1,734,752	2,644,366	7.9	721,292	2,566,354

AAL = Actuarial Accrued Liability
 AVA = Actuarial Value of Assets

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.665 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) For purposes of the above projections, it was assumed that all actuarial assumptions would be realized. In particular, it was assumed that the actuarial value of assets would earn 7.25% in each year.
- 3) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 4) Due to the estimated nature of the above projections, certain but not all aspects of the Missouri LAGERS funding policy have been incorporated in the above projections.
- 5) Differences between fiscal end dates of the employer and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 6) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.

Other disclosures required by Section 105.665 of the Revised Statutes of Missouri (RSMo):

- 1) As of February 29, 2020, the actuarial value of assets is \$10,510,802; the estimated market value of assets is \$10,584,896; the actuarial accrued liability is \$12,011,079; and the funded ratio is 87.5%. These results are based on the assets and liabilities associated with the Employer Accumulation Fund and the Member Deposit Fund for this division.
- 2) Under Section 70.730 of the Revised Statutes of Missouri, the computed employer contribution rate shall not exceed the contribution rate for the immediately preceding fiscal year by more than one percent (not including the effects of any benefit changes). As of February 29, 2020, there is no difference between the capped and uncapped employer contribution rate.



Cass County

Computed Employer Contribution Rates - Police Employees

As of February 29, 2020

Benefit Plan Information

<u>Benefit Plans</u>	<u>Present Plan</u>	<u>Alternate Plan</u>
# Benefit Program:	L-3	L-6
Final Average Salary:	3 years	3 years
Member Contribution Rate:	0%	0%
Retirement Eligibility:	Regular	Regular

Actuarial Information

Employer Contribution Rates (as a percent of payroll)

	<u>Present Plan</u>	<u>Alternate Plan</u>
Normal Cost Rate	8.0%	12.5%
Casualty Rate	0.5	0.8
Prior Service Cost Rate ¹	<u>0.5</u>	<u>4.7</u>
Total Employer Contribution Rate	9.0%	18.0%

Increase in Employer Contribution Rate for Alternate Plan as a percent of payroll

9.0%

Increase in Actuarial Accrued Liability ¹

\$2,868,632

Employer contribution rates shown above are for the fiscal year beginning in 2021. If the alternate plan is adopted prior to the fiscal year beginning in 2021, 9.0% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

¹ The increase in the actuarial accrued liability due to adoption of the alternate plan was amortized over a 20 year period to compute the increase in the Prior Service Cost Rate.

It was assumed that all service for active members would now be covered under the 2.00% benefit multiplier (i.e., L-6 benefit program). Currently only service credited prior to April 1, 2011 is covered under the 2.00% benefit multiplier.

If you have any questions, please call the LAGERS office at 1-800-447-4334.

Cass County

Projected Estimated Employer Contribution Rates - Police Employees

As of February 29, 2020

Valuation Date Feb. 28/29	Estimated Projected Payroll	Present Plan			Alternate Plan			Change Due to Proposed Provisions		
		Estimated Employer Contribution		Estimated Difference Between AAL and AVA	Estimated Employer Contribution		Estimated Difference Between AAL and AVA	Estimated Employer Contribution		Estimated Difference Between AAL and AVA
		As a % of Payroll	Annual Dollars		As a % of Payroll	Annual Dollars		As a % of Payroll	Annual Dollars	
2020	\$5,002,453	9.0%	\$450,221	\$95,121	18.0%	\$900,442	\$2,963,753	9.0%	\$450,221	\$2,868,632
2021	5,165,033	9.0	464,853	73,521	18.0	929,706	2,934,613	9.0	464,853	2,861,092
2022	5,332,897	9.0	479,961	49,429	18.0	959,921	2,895,429	9.0	479,960	2,846,000
2023	5,506,216	9.0	495,559	22,634	18.0	991,119	2,845,217	9.0	495,560	2,822,583
2024	5,685,168	9.0	511,665	(7,090)	18.0	1,023,330	2,782,911	9.0	511,665	2,790,001
2025	5,869,936	9.0	528,294	(39,989)	18.0	1,056,588	2,707,358	9.0	528,294	2,747,347
2026	6,060,709	9.0	545,464	(76,325)	18.0	1,090,928	2,617,316	9.0	545,464	2,693,641
2027	6,257,682	9.0	563,191	(116,382)	18.0	1,126,383	2,511,440	9.0	563,192	2,627,822
2028	6,461,057	9.0	581,495	(160,466)	18.0	1,162,990	2,388,279	9.0	581,495	2,548,745
2029	6,671,041	9.0	600,394	(208,905)	18.0	1,200,787	2,246,268	9.0	600,393	2,455,173

AAL = Actuarial Accrued Liability
 AVA = Actuarial Value of Assets

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.665 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) For purposes of the above projections, it was assumed that all actuarial assumptions would be realized. In particular, it was assumed that the actuarial value of assets would earn 7.25% in each year.
- 3) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 4) Due to the estimated nature of the above projections, certain but not all aspects of the Missouri LAGERS funding policy have been incorporated in the above projections.
- 5) Differences between fiscal end dates of the employer and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 6) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.

Other disclosures required by Section 105.665 of the Revised Statutes of Missouri (RSMo):

- 1) As of February 29, 2020, the actuarial value of assets is \$10,060,549; the estimated market value of assets is \$10,131,469; the actuarial accrued liability is \$10,155,670; and the funded ratio is 99.1%. These results are based on the assets and liabilities associated with the Employer Accumulation Fund and the Member Deposit Fund for this division.
- 2) Under Section 70.730 of the Revised Statutes of Missouri, the computed employer contribution rate shall not exceed the contribution rate for the immediately preceding fiscal year by more than one percent (not including the effects of any benefit changes). As of February 29, 2020, there is no difference between the capped and uncapped employer contribution rate.



APPENDIX I

SUMMARY OF FINANCIAL ASSUMPTIONS

Summary of Assumptions Used in Actuarial Valuations

Assumptions Adopted by Board of Trustees after Consulting with Actuary

1. The investment return rate used in making the valuations was 7.25% per year, net of investment expenses, compounded annually. This rate of return is not the assumed real rate of return. The real rate of return is the rate of investment return in excess of the inflation rate. The price inflation rate used in making the valuations was 2.50% and the wage inflation rate used in making the valuations was 3.25%. The 7.25% investment return rate translates to an assumed real rate of return over price inflation of 4.75% and over wage inflation of 4.00%. Adopted 2011 and 2016.
2. The healthy retiree mortality tables, for post-retirement mortality, used in evaluating allowances to be paid were the RP-2014 Healthy Annuitant mortality table for males and females, adjusted for mortality improvement back to the observation period base year of 2006. The disabled retiree mortality tables, for post-retirement mortality, used in evaluating allowances to be paid were the RP-2014 disabled mortality table for males and females, adjusted for mortality improvement back to the observation period base year of 2006. The pre-retirement mortality tables used were the RP-2014 employees mortality table for males and females, adjusted for mortality improvement back to the observation period base year of 2006. For both the post-retirement and pre-retirement tables, the base year for males was then established to be 2017. Mortality rates for a particular calendar year are determined by applying the MP-2015 mortality improvement scale to the above described tables. Adopted 2016.
3. The probabilities of withdrawal and disability from service, together with individual pay increase assumptions, are shown in Schedule 1. Adopted 2016.
4. The probabilities of retirement with an age and service allowance are shown in Schedule 2. Adopted 2016.
5. Post-retirement cost of living allowances are assumed to be 2.50% per year. Adopted 2016.
6. Total active member payroll is assumed to increase 3.25% a year, which is the portion of the individual pay increase assumptions attributable to wage inflation. In effect, this assumes no change in the number of active members per employer. Adopted 2016.
7. An individual entry-age actuarial cost method of valuation was used in determining age and service allowance actuarial liabilities and normal cost. Adopted 1986.
8. The data about persons now covered was furnished by the political subdivision. Although examined for general reasonableness, the data was not audited by us.

Schedule 1.

Separations From Active Employment (Not Including Death-In-Service) Before Age & Service Retirement and Individual Pay Increase Assumptions

		Percent of Active Members Separating Within Next Year							
Sample Ages	Years of Service	General Members				Police/Public Safety		Fire	
		Men		Women		Disability	Withdrawal	Disability	Withdrawal
		Disability	Withdrawal	Disability	Withdrawal				
All	0		19.00%		22.00%		18.00%		10.00%
	1		17.00		20.00		17.00		8.00
	2		15.00		17.00		16.00		7.00
	3		13.00		14.00		13.00		6.00
	4		11.00		13.00		12.00		6.00
25	5 & Over	0.09%	7.30	0.02%	10.80	0.10%	9.80	0.06%	5.00
30		0.12	6.50	0.03	8.90	0.11	7.80	0.10	4.00
35		0.15	5.00	0.06	7.40	0.16	6.10	0.23	2.80
40		0.21	3.70	0.10	5.70	0.22	4.40	0.35	2.20
45		0.30	3.00	0.16	4.20	0.34	3.20	0.56	1.80
50		0.44	2.40	0.24	3.30	0.53	1.80	0.85	1.00
55		0.68	1.80	0.34	2.50	0.88	1.00	1.31	0.50
60		1.02	1.00	0.48	1.20		0.00		0.00
65			0.00		0.00		0.00		0.00

Sample Ages	Percent Increase in Individual's Pay During Next Year		
	General	Police/Public Safety	Fire
	25	6.55%	6.55%
30	5.75	5.75	6.05
35	5.25	5.25	5.15
40	4.75	4.75	4.45
45	4.25	4.25	4.15
50	3.85	3.85	3.85
55	3.65	3.65	3.65
60	3.55	3.55	3.25
65	3.25	3.25	3.25

Schedule 2.

Percent of Eligible Active Members Retiring Within Next Year Without Rule of 80 Eligibility

Early Retirement

Retirement Ages	General Members		Retirement Ages	Police/ Public Safety	Fire
	Men	Women			
55	3.00%	3.00%	50	2.50%	2.50%
56	3.00%	3.00%	51	2.50%	2.50%
57	3.00%	3.00%	52	2.50%	2.50%
58	3.00%	3.00%	53	2.50%	2.50%
59	3.00%	3.00%	54	2.50%	2.50%

Normal Retirement

Retirement Ages	General Members		Retirement Ages	Police/ Public Safety	Fire
	Men	Women			
60	10%	10%	55	10%	13%
61	10	10	56	10	13
62	25	15	57	10	13
63	20	15	58	10	13
64	20	15	59	10	13
65	25	25	60	10	15
66	25	25	61	10	15
67	20	25	62	25	20
68	20	25	63	20	20
69	20	20	64	20	20
70	100	100	65	100	100

Schedule 2. (Continued)

Percent of Eligible Active Members Retiring Within Next Year With Rule of 80 Eligibility

Retirement Ages	General Members		Police/ Public Safety	Fire
	Men	Women		
50	15%	15%	25%	25%
51	15	15	25	20
52	15	15	15	20
53	15	15	15	20
54	15	15	15	20
55	15	15	15	20
56	15	15	15	20
57	15	15	15	25
58	15	15	15	25
59	15	15	15	25
60	15	15	15	35
61	15	15	25	35
62	30	15	30	45
63	30	15	30	45
64	30	20	30	45
65	30	25	100	100
66	30	25		
67	30	25		
68	30	25		
69	30	25		
70	100	100		

APPENDIX II

SUMMARY OF LAGERS PROVISIONS

Missouri Local Government Employees Retirement System

Brief Summary of LAGERS

Benefits and Conditions Evaluated and/or Considered as of February 29, 2020

(Section References are to RSMo)

Voluntary Retirement. Sections 70.645 & 70.600. A member may retire with an age & service allowance after both (i) completing 5 years of credited service, and (ii) attaining the minimum service retirement age.

The minimum service retirement age is age 60 for a general employee and age 55 for a police, public safety or fire employee. Optionally, employers may also elect to provide for unreduced benefits for employees whose combination of years of age and years of service equals 80 or more.

Final Average Salary. Section 70.600. The average of a member's monthly compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) of credited service producing the highest monthly average, which period is contained within the 120 consecutive months of credited service immediately preceding retirement.

Age & Service Allowance. Section 70.655. The allowance, payable monthly for life, equals a specified percent of a member's final average salary multiplied by the number of years of credited service. Each employer elects the percent applicable to its members, from the following programs:

L-1 Benefit Program:	1.00% for life
L-3 Benefit Program:	1.25% for life
L-7 Benefit Program:	1.50% for life
L-9 Benefit Program:	1.60% for life
L-12 Benefit Program:	1.75% for life
L-6 Benefit Program:	2.00% for life
LT-4 Benefit Program:	1.00% for life, plus 1.00% to age 62
LT-5 Benefit Program:	1.25% for life, plus 0.75% to age 62
LT-8 Benefit Program:	1.50% for life, plus 0.50% to age 62
LT-4(65) Benefit Program:	1.00% for life, plus 1.00% to age 65
LT-5(65) Benefit Program:	1.25% for life, plus 0.75% to age 65
LT-8(65) Benefit Program:	1.50% for life, plus 0.50% to age 65
LT-10(65) Benefit Program:	1.60% for life, plus 0.40% to age 65
LT-14(65) Benefit Program:	1.75% for life, plus 0.25% to age 65

The only LT benefit programs available for adoption after August 1, 1994 are the LT(65) programs.

Benefit programs L-9 and LT-10(65) are unavailable for adoption after August 1, 2005.

Benefit program L-11, available only to groups not covered by Social Security, provides for 2.5% for life.

Subsequent to joining the System the governing body can elect to change benefit programs for the employees, but not more often than once every 2 years.



Early Allowance. Section 70.670. A member may retire with an early allowance after both (i) completing 5 years of credited service, and (ii) attaining age 55 if a general employee or age 50 if a police, public safety or fire employee. The early allowance amount, payable monthly for life, is computed in the same manner as an age & service allowance, based upon the service and earnings record to time of early retirement, but reduced to reflect the fact that the age when payments begin is younger than the minimum service retirement age. The amount of the reduction is 1/2 of 1% (.005) for each month the age at retirement is younger than the minimum service retirement age.

Deferred Allowance. Section 70.675. If a member leaves LAGERS-covered employment (i) before attaining the early retirement age, and (ii) after completing 5 years of credited service, the member becomes eligible for a deferred allowance; provided the former member lives to the minimum service retirement age and does not withdraw the accumulated contributions.

The deferred allowance amount, payable monthly for life from the minimum service retirement age, is computed in the same manner as an age & service allowance, based upon the service and earnings record to time of leaving LAGERS coverage.

Deferred allowances are also payable any time after reaching the early retirement age, with the reduction for early retirement noted on the previous page.

Non-Duty Disability Allowance. Section 70.680. A member with 5 or more years of credited service who becomes totally and permanently disabled from other than duty-connected causes becomes eligible to receive a non-duty disability allowance computed in the same manner as an age & service allowance, based upon the service & earnings record to time of disability.

Duty Disability Allowance. Section 70.680. A member regardless of credited service who becomes totally and permanently disabled from duty-connected causes becomes eligible to receive a duty disability allowance computed in the same manner as an age & service allowance, based upon the earnings record to time of disability but based upon the years of credited service the member would have completed had the member continued in LAGERS-covered employment to age 60.

Death-in-Service. Section 70.661. Upon the death of a member who had completed 5 years of credited service, the eligible surviving dependents receive the following benefits:

- (a) The surviving spouse receives an allowance equal to the Option A allowance (joint and 75% survivor benefit) computed based upon the deceased members' service & earnings record to time of death.
- (b) When no spouse benefit is payable, the dependent children under age 18 (age 23 if they are full time students) each receive an equal share of 60% of an age & service allowance computed based upon the deceased member's service & earnings record to time of death.
- (c) If the death is determined to be duty related, the 5 year service requirement is waived and the benefit is based on years of credited service the member would have completed had the member continued in LAGERS-covered employment to age 60.

Benefit Changes After Retirement. Section 70.655. For retirements effective after September 28, 1975, there is an annual redetermination of monthly benefit amount, beginning the October first following 12 months of retirement. As of each October first the amount of each eligible benefit is redetermined as follows:

- (a) Subject to the maximum in (b), the redetermined amount is the amount otherwise payable multiplied by: 100% plus up to 4%, as determined by the LAGERS Board of Trustees, for each full year of retirement.
- (b) The redetermined amount may not exceed the amount otherwise payable multiplied by the ratio of the Consumer Price Index for the immediately preceding month of June to the Consumer Price Index for the month of June immediately preceding retirement.

Member Contributions. Sections 70.690 & 70.705. Each member contributes a percent of compensation beginning after completion of sufficient employment for 6 months of credited service. The law governing LAGERS has a provision for the adoption of a 2%, 4% or 6% member contribution rate.

If a member leaves LAGERS-covered employment before an allowance is payable, the accumulated contributions are refunded to the member. If the member dies, his accumulated contributions are refunded to a designated beneficiary.

The law governing LAGERS also has a provision for the adoption of a 0% plan in which the full cost of LAGERS participation is paid by the employer. Adoption of the 0% plan may be done at the time of membership or a later date; however, a change in the member contribution rate may not be made more frequently than every 2 years. Under the 0% plan there is no individual account maintained for each employee and no refund of contributions if an employee terminates before being eligible for a benefit.

Employer Contributions. Section 70.730. Each employer contributes the remainder amounts necessary to finance the employees' participation in LAGERS. Contributions to LAGERS are determined based upon level-percent-of-payroll principles, so that contribution rates do not have to increase over decades of time.

APPENDIX III

BENEFIT ILLUSTRATIONS

Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(L-1 Benefit Program is Years of Credited Service
times: 1.00% of FAS ¹)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³	Estimated Social Security ²	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$ 525	\$ 948	\$1,473	98%
2,000	700	1,095	1,795	90%
2,500	875	1,242	2,117	85%
3,000	1,050	1,388	2,438	81%
3,500	1,225	1,535	2,760	79%
4,000	1,400	1,682	3,082	77%
25 Years of Service:				
\$1,500	\$ 375	\$ 948	\$1,323	88%
2,000	500	1,095	1,595	80%
2,500	625	1,242	1,867	75%
3,000	750	1,388	2,138	71%
3,500	875	1,535	2,410	69%
4,000	1,000	1,682	2,682	67%
15 Years of Service:				
\$1,500	\$225	\$ 948	\$1,173	78%
2,000	300	1,095	1,395	70%
2,500	375	1,242	1,617	65%
3,000	450	1,388	1,838	61%
3,500	525	1,535	2,060	59%
4,000	600	1,682	2,282	57%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(L-3 Benefit Program is Years of Credited Service
times: 1.25% of FAS ¹)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³	Estimated Social Security ²	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$ 656	\$ 948	\$1,604	107%
2,000	875	1,095	1,970	99%
2,500	1,094	1,242	2,336	93%
3,000	1,313	1,388	2,701	90%
3,500	1,531	1,535	3,066	88%
4,000	1,750	1,682	3,432	86%
25 Years of Service:				
\$1,500	\$ 469	\$ 948	\$1,417	94%
2,000	625	1,095	1,720	86%
2,500	781	1,242	2,023	81%
3,000	938	1,388	2,326	78%
3,500	1,094	1,535	2,629	75%
4,000	1,250	1,682	2,932	73%
15 Years of Service:				
\$1,500	\$281	\$ 948	\$1,229	82%
2,000	375	1,095	1,470	74%
2,500	469	1,242	1,711	68%
3,000	563	1,388	1,951	65%
3,500	656	1,535	2,191	63%
4,000	750	1,682	2,432	61%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(L-7 Benefit Program is Years of Credited Service
times: 1.50% of FAS ¹)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³	Estimated Social Security ²	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$ 788	\$ 948	\$1,736	116%
2,000	1,050	1,095	2,145	107%
2,500	1,313	1,242	2,555	102%
3,000	1,575	1,388	2,963	99%
3,500	1,838	1,535	3,373	96%
4,000	2,100	1,682	3,782	95%
25 Years of Service:				
\$1,500	\$ 563	\$ 948	\$1,511	101%
2,000	750	1,095	1,845	92%
2,500	938	1,242	2,180	87%
3,000	1,125	1,388	2,513	84%
3,500	1,313	1,535	2,848	81%
4,000	1,500	1,682	3,182	80%
15 Years of Service:				
\$1,500	\$338	\$ 948	\$1,286	86%
2,000	450	1,095	1,545	77%
2,500	563	1,242	1,805	72%
3,000	675	1,388	2,063	69%
3,500	788	1,535	2,323	66%
4,000	900	1,682	2,582	65%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(L-9 Benefit Program is Years of Credited Service
times: 1.60% of FAS ¹)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³	Estimated Social Security ²	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$ 840	\$ 948	\$1,788	119%
2,000	1,120	1,095	2,215	111%
2,500	1,400	1,242	2,642	106%
3,000	1,680	1,388	3,068	102%
3,500	1,960	1,535	3,495	100%
4,000	2,240	1,682	3,922	98%
25 Years of Service:				
\$1,500	\$ 600	\$ 948	\$1,548	103%
2,000	800	1,095	1,895	95%
2,500	1,000	1,242	2,242	90%
3,000	1,200	1,388	2,588	86%
3,500	1,400	1,535	2,935	84%
4,000	1,600	1,682	3,282	82%
15 Years of Service:				
\$1,500	\$360	\$ 948	\$1,308	87%
2,000	480	1,095	1,575	79%
2,500	600	1,242	1,842	74%
3,000	720	1,388	2,108	70%
3,500	840	1,535	2,375	68%
4,000	960	1,682	2,642	66%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(L-12 Benefit Program is Years of Credited Service
times: 1.75% of FAS ¹)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³	Estimated Social Security ²	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$ 919	\$ 948	\$1,867	124%
2,000	1,225	1,095	2,320	116%
2,500	1,531	1,242	2,773	111%
3,000	1,838	1,388	3,226	108%
3,500	2,144	1,535	3,679	105%
4,000	2,450	1,682	4,132	103%
25 Years of Service:				
\$1,500	\$ 656	\$ 948	\$1,604	107%
2,000	875	1,095	1,970	99%
2,500	1,094	1,242	2,336	93%
3,000	1,313	1,388	2,701	90%
3,500	1,531	1,535	3,066	88%
4,000	1,750	1,682	3,432	86%
15 Years of Service:				
\$1,500	\$ 394	\$ 948	\$1,342	89%
2,000	525	1,095	1,620	81%
2,500	656	1,242	1,898	76%
3,000	788	1,388	2,176	73%
3,500	919	1,535	2,454	70%
4,000	1,050	1,682	2,732	68%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(L-6 Benefit Program is Years of Credited Service
times: 2.00% of FAS ¹)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³	Estimated Social Security ²	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$1,050	\$ 948	\$1,998	133%
2,000	1,400	1,095	2,495	125%
2,500	1,750	1,242	2,992	120%
3,000	2,100	1,388	3,488	116%
3,500	2,450	1,535	3,985	114%
4,000	2,800	1,682	4,482	112%
25 Years of Service:				
\$1,500	\$ 750	\$ 948	\$1,698	113%
2,000	1,000	1,095	2,095	105%
2,500	1,250	1,242	2,492	100%
3,000	1,500	1,388	2,888	96%
3,500	1,750	1,535	3,285	94%
4,000	2,000	1,682	3,682	92%
15 Years of Service:				
\$1,500	\$ 450	\$ 948	\$1,398	93%
2,000	600	1,095	1,695	85%
2,500	750	1,242	1,992	80%
3,000	900	1,388	2,288	76%
3,500	1,050	1,535	2,585	74%
4,000	1,200	1,682	2,882	72%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(L-11 Benefit Program is Years of Credited Service
times: 2.50% of FAS ¹)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³	Estimated Social Security ²	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$1,313		\$1,313	88%
2,000	1,750		1,750	88%
2,500	2,188		2,188	88%
3,000	2,625		2,625	88%
3,500	3,063		3,063	88%
4,000	3,500		3,500	88%
25 Years of Service:				
\$1,500	\$ 938		\$ 938	63%
2,000	1,250		1,250	63%
2,500	1,563		1,563	63%
3,000	1,875		1,875	63%
3,500	2,188		2,188	63%
4,000	2,500		2,500	63%
15 Years of Service:				
\$1,500	\$ 563		\$ 563	38%
2,000	750		750	38%
2,500	938		938	38%
3,000	1,125		1,125	38%
3,500	1,313		1,313	38%
4,000	1,500		1,500	38%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.



Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(LT-4(62) Benefit Program is Years of Credited Service
times: 2.00% of FAS ¹ to age 62)
1.00% of FAS ¹ at age 62)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³		Estimated Social Security ²	Estimated Monthly Total		Percent of FAS	
	To 62	At 62		To 62	At 62	To 62	At 62
35 Years of Service:							
\$1,500	\$1,050	\$ 525	\$ 748	\$1,050	\$1,273	70%	85%
2,000	1,400	700	863	1,400	1,563	70%	78%
2,500	1,750	875	978	1,750	1,853	70%	74%
3,000	2,100	1,050	1,093	2,100	2,143	70%	71%
3,500	2,450	1,225	1,209	2,450	2,434	70%	70%
4,000	2,800	1,400	1,324	2,800	2,724	70%	68%
25 Years of Service:							
\$1,500	\$ 750	\$ 375	\$ 748	\$ 750	\$1,123	50%	75%
2,000	1,000	500	863	1,000	1,363	50%	68%
2,500	1,250	625	978	1,250	1,603	50%	64%
3,000	1,500	750	1,093	1,500	1,843	50%	61%
3,500	1,750	875	1,209	1,750	2,084	50%	60%
4,000	2,000	1,000	1,324	2,000	2,324	50%	58%
15 Years of Service:							
\$1,500	\$ 450	\$225	\$ 748	\$ 450	\$ 973	30%	65%
2,000	600	300	863	600	1,163	30%	58%
2,500	750	375	978	750	1,353	30%	54%
3,000	900	450	1,093	900	1,543	30%	51%
3,500	1,050	525	1,209	1,050	1,734	30%	50%
4,000	1,200	600	1,324	1,200	1,924	30%	48%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 62 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.



Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(LT-4(65) Benefit Program is Years of Credited Service
times: 2.00% of FAS ¹ to age 65)
1.00% of FAS ¹ at age 65)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³		Estimated Social Security ²	Estimated Monthly Total		Percent of FAS	
	To 65	At 65		To 65	At 65	To 65	At 65
35 Years of Service:							
\$1,500	\$1,050	\$ 525	\$ 948	\$1,050	\$1,473	70%	98%
2,000	1,400	700	1,095	1,400	1,795	70%	90%
2,500	1,750	875	1,242	1,750	2,117	70%	85%
3,000	2,100	1,050	1,388	2,100	2,438	70%	81%
3,500	2,450	1,225	1,535	2,450	2,760	70%	79%
4,000	2,800	1,400	1,682	2,800	3,082	70%	77%
25 Years of Service:							
\$1,500	\$ 750	\$ 375	\$ 948	\$ 750	\$1,323	50%	88%
2,000	1,000	500	1,095	1,000	1,595	50%	80%
2,500	1,250	625	1,242	1,250	1,867	50%	75%
3,000	1,500	750	1,388	1,500	2,138	50%	71%
3,500	1,750	875	1,535	1,750	2,410	50%	69%
4,000	2,000	1,000	1,682	2,000	2,682	50%	67%
15 Years of Service:							
\$1,500	\$ 450	\$225	\$ 948	\$ 450	\$1,173	30%	78%
2,000	600	300	1,095	600	1,395	30%	70%
2,500	750	375	1,242	750	1,617	30%	65%
3,000	900	450	1,388	900	1,838	30%	61%
3,500	1,050	525	1,535	1,050	2,060	30%	59%
4,000	1,200	600	1,682	1,200	2,282	30%	57%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(LT-5(62) Benefit Program is Years of Credited Service
times: 2.00% of FAS ¹ to age 62)
1.25% of FAS ¹ at age 62)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³		Estimated Social Security ²	Estimated Monthly Total		Percent of FAS	
	To 62	At 62		To 62	At 62	To 62	At 62
35 Years of Service:							
\$1,500	\$1,050	\$ 656	\$ 748	\$1,050	\$1,404	70%	94%
2,000	1,400	875	863	1,400	1,738	70%	87%
2,500	1,750	1,094	978	1,750	2,072	70%	83%
3,000	2,100	1,313	1,093	2,100	2,406	70%	80%
3,500	2,450	1,531	1,209	2,450	2,740	70%	78%
4,000	2,800	1,750	1,324	2,800	3,074	70%	77%
25 Years of Service:							
\$1,500	\$ 750	\$ 469	\$ 748	\$ 750	\$1,217	50%	81%
2,000	1,000	625	863	1,000	1,488	50%	74%
2,500	1,250	781	978	1,250	1,759	50%	70%
3,000	1,500	938	1,093	1,500	2,031	50%	68%
3,500	1,750	1,094	1,209	1,750	2,303	50%	66%
4,000	2,000	1,250	1,324	2,000	2,574	50%	64%
15 Years of Service:							
\$1,500	\$ 450	\$281	\$ 748	\$ 450	\$1,029	30%	69%
2,000	600	375	863	600	1,238	30%	62%
2,500	750	469	978	750	1,447	30%	58%
3,000	900	563	1,093	900	1,656	30%	55%
3,500	1,050	656	1,209	1,050	1,865	30%	53%
4,000	1,200	750	1,324	1,200	2,074	30%	52%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 62 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(LT-5(65) Benefit Program is Years of Credited Service
times: 2.00% of FAS ¹ to age 65)
1.25% of FAS ¹ at age 65)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³		Estimated Social Security ²	Estimated Monthly Total		Percent of FAS	
	To 65	At 65		To 65	At 65	To 65	At 65
35 Years of Service:							
\$1,500	\$1,050	\$ 656	\$ 948	\$1,050	\$1,604	70%	107%
2,000	1,400	875	1,095	1,400	1,970	70%	99%
2,500	1,750	1,094	1,242	1,750	2,336	70%	93%
3,000	2,100	1,313	1,388	2,100	2,701	70%	90%
3,500	2,450	1,531	1,535	2,450	3,066	70%	88%
4,000	2,800	1,750	1,682	2,800	3,432	70%	86%
25 Years of Service:							
\$1,500	\$ 750	\$ 469	\$ 948	\$ 750	\$1,417	50%	94%
2,000	1,000	625	1,095	1,000	1,720	50%	86%
2,500	1,250	781	1,242	1,250	2,023	50%	81%
3,000	1,500	938	1,388	1,500	2,326	50%	78%
3,500	1,750	1,094	1,535	1,750	2,629	50%	75%
4,000	2,000	1,250	1,682	2,000	2,932	50%	73%
15 Years of Service:							
\$1,500	\$ 450	\$281	\$ 948	\$ 450	\$1,229	30%	82%
2,000	600	375	1,095	600	1,470	30%	74%
2,500	750	469	1,242	750	1,711	30%	68%
3,000	900	563	1,388	900	1,951	30%	65%
3,500	1,050	656	1,535	1,050	2,191	30%	63%
4,000	1,200	750	1,682	1,200	2,432	30%	61%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS
Illustrations of Age and Service Allowance Amounts
For Sample Combinations of Service & Salary
(LT-8(62) Benefit Program is Years of Credited Service
times: 2.00% of FAS ¹ to age 62)
1.50% of FAS ¹ at age 62)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³		Estimated Social Security ²	Estimated Monthly Total		Percent of FAS	
	To 62	At 62		To 62	At 62	To 62	At 62
35 Years of Service:							
\$1,500	\$1,050	\$ 788	\$ 748	\$1,050	\$1,536	70%	102%
2,000	1,400	1,050	863	1,400	1,913	70%	96%
2,500	1,750	1,313	978	1,750	2,291	70%	92%
3,000	2,100	1,575	1,093	2,100	2,668	70%	89%
3,500	2,450	1,838	1,209	2,450	3,047	70%	87%
4,000	2,800	2,100	1,324	2,800	3,424	70%	86%
25 Years of Service:							
\$1,500	\$ 750	\$ 563	\$ 748	\$ 750	\$1,311	50%	87%
2,000	1,000	750	863	1,000	1,613	50%	81%
2,500	1,250	938	978	1,250	1,916	50%	77%
3,000	1,500	1,125	1,093	1,500	2,218	50%	74%
3,500	1,750	1,313	1,209	1,750	2,522	50%	72%
4,000	2,000	1,500	1,324	2,000	2,824	50%	71%
15 Years of Service:							
\$1,500	\$ 450	\$338	\$ 748	\$ 450	\$1,086	30%	72%
2,000	600	450	863	600	1,313	30%	66%
2,500	750	563	978	750	1,541	30%	62%
3,000	900	675	1,093	900	1,768	30%	59%
3,500	1,050	788	1,209	1,050	1,997	30%	57%
4,000	1,200	900	1,324	1,200	2,224	30%	56%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 62 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS

Illustrations of Age and Service Allowance Amounts For Sample Combinations of Service & Salary (LT-8(65) Benefit Program is Years of Credited Service times: 2.00% of FAS ¹ to age 65) 1.50% of FAS ¹ at age 65)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³		Estimated Social Security ²	Estimated Monthly Total		Percent of FAS	
	To 65	At 65		To 65	At 65	To 65	At 65
35 Years of Service:							
\$1,500	\$1,050	\$ 788	\$ 948	\$1,050	\$1,736	70%	116%
2,000	1,400	1,050	1,095	1,400	2,145	70%	107%
2,500	1,750	1,313	1,242	1,750	2,555	70%	102%
3,000	2,100	1,575	1,388	2,100	2,963	70%	99%
3,500	2,450	1,838	1,535	2,450	3,373	70%	96%
4,000	2,800	2,100	1,682	2,800	3,782	70%	95%
25 Years of Service:							
\$1,500	\$ 750	\$ 563	\$ 948	\$ 750	\$1,511	50%	101%
2,000	1,000	750	1,095	1,000	1,845	50%	92%
2,500	1,250	938	1,242	1,250	2,180	50%	87%
3,000	1,500	1,125	1,388	1,500	2,513	50%	84%
3,500	1,750	1,313	1,535	1,750	2,848	50%	81%
4,000	2,000	1,500	1,682	2,000	3,182	50%	80%
15 Years of Service:							
\$1,500	\$ 450	\$338	\$ 948	\$ 450	\$1,286	30%	86%
2,000	600	450	1,095	600	1,545	30%	77%
2,500	750	563	1,242	750	1,805	30%	72%
3,000	900	675	1,388	900	2,063	30%	69%
3,500	1,050	788	1,535	1,050	2,323	30%	66%
4,000	1,200	900	1,682	1,200	2,582	30%	65%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS

Illustrations of Age and Service Allowance Amounts For Sample Combinations of Service & Salary (LT-10(65) Benefit Program is Years of Credited Service times: 2.00% of FAS¹ to age 65) 1.60% of FAS¹ at age 65)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³		Estimated Social Security ²	Estimated Monthly Total		Percent of FAS	
	To 65	At 65		To 65	At 65	To 65	At 65
35 Years of Service:							
\$1,500	\$1,050	\$ 840	\$ 948	\$1,050	\$1,788	70%	119%
2,000	1,400	1,120	1,095	1,400	2,215	70%	111%
2,500	1,750	1,400	1,242	1,750	2,642	70%	106%
3,000	2,100	1,680	1,388	2,100	3,068	70%	102%
3,500	2,450	1,960	1,535	2,450	3,495	70%	100%
4,000	2,800	2,240	1,682	2,800	3,922	70%	98%
25 Years of Service:							
\$1,500	\$750	\$ 600	\$ 948	\$ 750	\$1,548	50%	103%
2,000	1,000	800	1,095	1,000	1,895	50%	95%
2,500	1,250	1,000	1,242	1,250	2,242	50%	90%
3,000	1,500	1,200	1,388	1,500	2,588	50%	86%
3,500	1,750	1,400	1,535	1,750	2,935	50%	84%
4,000	2,000	1,600	1,682	2,000	3,282	50%	82%
15 Years of Service:							
\$1,500	\$ 450	\$360	\$ 948	\$ 450	\$1,308	30%	87%
2,000	600	480	1,095	600	1,575	30%	79%
2,500	750	600	1,242	750	1,842	30%	74%
3,000	900	720	1,388	900	2,108	30%	70%
3,500	1,050	840	1,535	1,050	2,375	30%	68%
4,000	1,200	960	1,682	1,200	2,642	30%	66%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.

Missouri LAGERS

Illustrations of Age and Service Allowance Amounts For Sample Combinations of Service & Salary (LT-14(65) Benefit Program is Years of Credited Service times: 2.00% of FAS ¹ to age 65) 1.75% of FAS ¹ at age 65)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³		Estimated Social Security ²	Estimated Monthly Total		Percent of FAS	
	To 65	At 65		To 65	At 65	To 65	At 65
35 Years of Service:							
\$1,500	\$1,050	\$ 919	\$ 948	\$1,050	\$1,867	70%	124%
2,000	1,400	1,225	1,095	1,400	2,320	70%	116%
2,500	1,750	1,531	1,242	1,750	2,773	70%	111%
3,000	2,100	1,838	1,388	2,100	3,226	70%	108%
3,500	2,450	2,144	1,535	2,450	3,679	70%	105%
4,000	2,800	2,450	1,682	2,800	4,132	70%	103%
25 Years of Service:							
\$1,500	\$ 750	\$ 656	\$ 948	\$ 750	\$1,604	50%	107%
2,000	1,000	875	1,095	1,000	1,970	50%	99%
2,500	1,250	1,094	1,242	1,250	2,336	50%	93%
3,000	1,500	1,313	1,388	1,500	2,701	50%	90%
3,500	1,750	1,531	1,535	1,750	3,066	50%	88%
4,000	2,000	1,750	1,682	2,000	3,432	50%	86%
15 Years of Service:							
\$1,500	\$ 450	\$ 394	\$ 948	\$ 450	\$1,342	30%	89%
2,000	600	525	1,095	600	1,620	30%	81%
2,500	750	656	1,242	750	1,898	30%	76%
3,000	900	788	1,388	900	2,176	30%	73%
3,500	1,050	919	1,535	1,050	2,454	30%	70%
4,000	1,200	1,050	1,682	1,200	2,732	30%	68%

¹ "Final Average Salary" means the monthly average of an employee's compensation during the period of 60 consecutive months (or optionally, 36 consecutive months) when they were highest, contained within the last 120 months of Credited Service.

² "Estimated Social Security" means, for an employee covered by Social Security, an employee's estimated OASDI retirement benefit. The benefit is based upon an estimated "average indexed monthly earnings" for an employee retiring at age 65 in 2020 - it does not include any amounts which might be payable to an eligible spouse or children.

³ Amounts are shown to nearest \$1, for simplicity; actual amounts are to nearest 1¢.



November 3, 2020 E-mail

Mr. Robert Wilson
Executive Director
Missouri Local Government
Employees Retirement System
P.O. Box 1665
Jefferson City, Missouri 65102

Dear Bob:

Enclosed is the report of the February 29, 2020 Supplemental Actuarial Valuation of LAGERS benefits for the employees of:

Cass County

Sincerely,

A handwritten signature in black ink that reads "Mita Drazilov". The signature is written in a cursive, flowing style.

Mita D. Drazilov, ASA, FCA, MAAA

MDD:rmg
Enclosure