



The City of Grandview

Supplemental Actuarial Valuation of Alternate
LAGERS Benefits
February 28, 2019



Table of Contents

	Page
Actuary's Certification Letter.....	1
Alternate Plan Employer Contribution Rates.....	3
Appendix I	
Summary of Financial Assumptions	
Appendix II	
Summary of LAGERS Provisions	
Appendix III	
Benefit Illustrations	

December 13, 2019

The City of Grandview
Grandview, 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 current cost plus the disability cost. 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. The prior service cost 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 current cost, disability cost, and prior service cost 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 28, 2019. 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 28, 2019.

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 28, 2019 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 either a contributory plan or a non-contributory plan, with benefits based on either a 5 year or 3 year Final Average Salary (FAS).

Contributory Plan. Under the contributory plan, each covered member contributes 4% 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.

Non-Contributory Plan. Under the non-contributory 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.

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 72 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.

The City of Grandview

Computed Employer Contribution Rates - General Employees

As of February 28, 2019

<u>Benefit Plans</u>	<u>Present</u>	<u>Alternate</u>
# Benefit Program:	LT-5(65)	L-12
# Final Average Salary:	3 year	5 year
Member Contributions:	Non-Contributory	Non-Contributory
Retirement Eligibility:	Regular	Regular

<u>Present Plan</u>	<u>Rates</u>
Current Service Cost	8.4%
Disability Cost	0.3
Prior Service Cost	<u>(2.9)</u>
Total	5.8%
 <u>Alternate Plan</u> 	
Current Service Cost	10.6%
Disability Cost	0.4
Prior Service Cost*	<u>0.9</u>
Total	11.9%
 Increase In Contribution Rate For Alternate Plan	 <u>6.1%</u>

Employer contribution rates shown above are for the fiscal year beginning in 2020. If the alternate plan is adopted prior to the fiscal year beginning in 2020, 6.1% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

* Adoption of the alternate plan would increase the actuarial accrued liability by \$1,965,039 which was amortized over a 20 year period to compute the increase in the Prior Service Cost.

It was assumed that all service credited prior to the date of adoption would continue to be covered under the 2.00% benefit multiplier up to age 65 (i.e., LT-5(65) benefit program) and the 3 year FAS provision.

The City of Grandview

Projected Estimated Employer Contribution Rates - General Employees

As of February 28, 2019

Valuation Date Feb. 28	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
2019	\$3,731,103	5.8%	\$216,404	\$(1,307,093)	11.9%	\$444,001	\$657,946	6.1%	\$227,597	\$1,965,039
2020	3,852,364	6.0	231,142	(1,291,142)	12.1	466,136	668,732	6.1	234,994	1,959,874
2021	3,977,566	6.2	246,609	(1,278,538)	12.3	489,241	670,998	6.1	242,632	1,949,536
2022	4,106,837	6.4	262,838	(1,269,510)	12.5	513,355	663,985	6.1	250,517	1,933,495
2023	4,240,309	6.6	279,860	(1,264,310)	12.7	538,519	646,866	6.1	258,659	1,911,176
2024	4,378,119	6.8	297,712	(1,263,208)	12.9	564,777	618,750	6.1	267,065	1,881,958
2025	4,520,408	6.9	311,908	(1,266,497)	13.0	587,653	578,671	6.1	275,745	1,845,168
2026	4,667,321	7.1	331,380	(1,274,495)	13.2	616,086	525,587	6.1	284,706	1,800,082
2027	4,819,009	7.2	346,969	(1,287,545)	13.3	640,928	458,368	6.1	293,959	1,745,913
2028	4,975,627	7.3	363,221	(1,306,018)	13.4	666,734	375,798	6.1	303,513	1,681,816

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 28, 2019, the actuarial value of assets is \$8,403,247; the estimated market value of assets is \$8,462,484; the actuarial accrued liability is \$7,096,154; and the funded ratio is 118.4%. 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 28, 2019, there is no difference between the capped and uncapped employer contribution rate.

The City of Grandview

Computed Employer Contribution Rates - Police Employees

As of February 28, 2019

<u>Benefit Plans</u>	<u>Present</u>	<u>Alternate</u>
# Benefit Program:	LT-5(65)	L-12
# Final Average Salary:	3 year	5 year
Member Contributions:	Non-Contributory	Non-Contributory
Retirement Eligibility:	Regular	Regular

<u>Present Plan</u>	<u>Rates</u>
Current Service Cost	8.7%
Disability Cost	0.5
Prior Service Cost	<u>1.6</u>
Total	10.8%
 <u>Alternate Plan</u> 	
Current Service Cost	10.4%
Disability Cost	0.7
Prior Service Cost*	<u>4.2</u>
Total	15.3%
 Increase In Contribution Rate For Alternate Plan	 <u>4.5%</u>

Employer contribution rates shown above are for the fiscal year beginning in 2020. If the alternate plan is adopted prior to the fiscal year beginning in 2020, 4.5% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

* Adoption of the alternate plan would increase the actuarial accrued liability by \$1,098,250 which was amortized over a 20 year period to compute the increase in the Prior Service Cost.

It was assumed that all service credited prior to the date of adoption would continue to be covered under the 2.00% benefit multiplier up to age 65 (i.e., LT-5(65) benefit program) and the 3 year FAS provision.

The City of Grandview

Projected Estimated Employer Contribution Rates - Police Employees

As of February 28, 2019

Valuation Date Feb. 28	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
2019	\$3,108,884	10.8%	\$335,759	\$433,180	15.3%	\$475,659	\$1,531,430	4.5%	\$139,900	\$1,098,250
2020	3,209,923	10.8	346,672	412,010	15.3	491,118	1,507,373	4.5	144,446	1,095,363
2021	3,314,245	10.9	361,253	387,239	15.4	510,394	1,476,825	4.5	149,141	1,089,586
2022	3,421,958	10.9	372,993	358,545	15.4	526,982	1,439,165	4.5	153,989	1,080,620
2023	3,533,172	10.9	385,116	325,582	15.4	544,108	1,393,728	4.5	158,992	1,068,146
2024	3,648,000	10.9	397,632	287,976	15.4	561,792	1,339,792	4.5	164,160	1,051,816
2025	3,766,560	10.9	410,555	245,323	15.4	580,050	1,276,578	4.5	169,495	1,031,255
2026	3,888,973	10.9	423,898	197,190	15.4	598,902	1,203,246	4.5	175,004	1,006,056
2027	4,015,365	10.9	437,675	143,106	15.4	618,366	1,118,888	4.5	180,691	975,782
2028	4,145,864	10.9	451,899	82,567	15.4	638,463	1,022,525	4.5	186,564	939,958

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 28, 2019, the actuarial value of assets is \$5,243,658; the estimated market value of assets is \$5,280,622; the actuarial accrued liability is \$5,676,838; and the funded ratio is 92.4%. 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 28, 2019, there is no difference between the capped and uncapped employer contribution rate.

The City of Grandview

Computed Employer Contribution Rates - Fire Employees

As of February 28, 2019

<u>Benefit Plans</u>	<u>Present</u>	<u>Alternate</u>
# Benefit Program:	LT-5(65)	L-12
# Final Average Salary:	3 year	5 year
Member Contributions:	Non-Contributory	Non-Contributory
Retirement Eligibility:	Regular	Regular

<u>Present Plan</u>	<u>Rates</u>
Current Service Cost	10.8%
Disability Cost	0.7
Prior Service Cost	<u>(5.3)</u>
Total	6.2%
 <u>Alternate Plan</u> 	
Current Service Cost	12.6%
Disability Cost	0.9
Prior Service Cost*	<u>(0.8)</u>
Total	12.7%
 Increase In Contribution Rate For Alternate Plan	 <u>6.5%</u> @

Employer contribution rates shown above are for the fiscal year beginning in 2020. If the alternate plan is adopted prior to the fiscal year beginning in 2020, 6.5% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

* Adoption of the alternate plan would increase the actuarial accrued liability by \$1,402,568 which was amortized over a 20 year period to compute the increase in the Prior Service Cost.

@ The increase of 6.5% as shown above, includes the estimated cost (value) of the change in benefit provisions equal to 6.0% of payroll and 0.5% of payroll due to the capped contribution rate of this group as of February 28, 2019.

It was assumed that all service credited prior to the date of adoption would continue to be covered under the 2.00% benefit multiplier up to age 65 (i.e., LT-5(65) benefit program) and the 3 year FAS provision.

The City of Grandview

Projected Estimated Employer Contribution Rates - Fire Employees

As of February 28, 2019

Valuation Date Feb. 28	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
2019	\$2,554,566	6.2%	\$158,383	\$(1,511,193)	12.7%	\$324,430	\$(108,625)	6.5%	\$166,047	\$1,402,568
2020	2,637,589	7.0	184,631	(1,480,170)	13.0	342,887	(94,062)	6.0	158,256	1,386,108
2021	2,723,311	7.3	198,802	(1,466,096)	13.3	362,200	(87,116)	6.0	163,398	1,378,980
2022	2,811,819	7.7	216,510	(1,456,215)	13.7	385,219	(88,440)	6.0	168,709	1,367,775
2023	2,903,203	7.9	229,353	(1,450,820)	13.9	403,545	(98,735)	6.0	174,192	1,352,085
2024	2,997,557	8.2	245,800	(1,450,231)	14.2	425,653	(118,766)	6.0	179,853	1,331,465
2025	3,094,978	8.5	263,073	(1,454,793)	14.5	448,772	(149,356)	6.0	185,699	1,305,437
2026	3,195,565	8.7	278,014	(1,464,879)	14.7	469,748	(191,397)	6.0	191,734	1,273,482
2027	3,299,421	9.0	296,948	(1,480,893)	15.0	494,913	(245,852)	6.0	197,965	1,235,041
2028	3,406,652	9.2	313,412	(1,503,272)	15.2	517,811	(313,765)	6.0	204,399	1,189,507

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 28, 2019, the actuarial value of assets is \$8,659,186; the estimated market value of assets is \$8,720,228; the actuarial accrued liability is \$7,147,993; and the funded ratio is 121.1%. 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 28, 2019, the uncapped employer contribution rate was computed to be 6.7% of payroll.

The City of Grandview

Computed Employer Contribution Rates - General Employees

As of February 28, 2019

<u>Benefit Plans</u>	<u>Present</u>	<u>Alternate</u>
# Benefit Program:	LT-5(65)	L-6
# Final Average Salary:	3 year	5 year
Member Contributions:	Non-Contributory	Non-Contributory
Retirement Eligibility:	Regular	Regular

<u>Present Plan</u>	<u>Rates</u>
Current Service Cost	8.4%
Disability Cost	0.3
Prior Service Cost	<u>(2.9)</u>
Total	5.8%
 <u>Alternate Plan</u> 	
Current Service Cost	12.0%
Disability Cost	0.5
Prior Service Cost*	<u>2.9</u>
Total	15.4%
 Increase In Contribution Rate For Alternate Plan	 <u>9.6%</u>

Employer contribution rates shown above are for the fiscal year beginning in 2020. If the alternate plan is adopted prior to the fiscal year beginning in 2020, 9.6% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

* Adoption of the alternate plan would increase the actuarial accrued liability by \$2,960,011 which was amortized over a 20 year period to compute the increase in the Prior Service Cost.

It was assumed that all service credited prior to the date of adoption would continue to be covered under the 3 year FAS provision.

The City of Grandview

Projected Estimated Employer Contribution Rates - General Employees

As of February 28, 2019

Valuation Date Feb. 28	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
2019	\$3,731,103	5.8%	\$216,404	\$(1,307,093)	15.4%	\$574,590	\$1,652,918	9.6%	\$358,186	\$2,960,011
2020	3,852,364	6.0	231,142	(1,291,142)	15.6	600,969	1,661,088	9.6	369,827	2,952,230
2021	3,977,566	6.2	246,609	(1,278,538)	15.8	628,455	1,658,120	9.6	381,846	2,936,658
2022	4,106,837	6.4	262,838	(1,269,510)	16.0	657,094	1,642,985	9.6	394,256	2,912,495
2023	4,240,309	6.6	279,860	(1,264,310)	16.2	686,930	1,614,565	9.6	407,070	2,878,875
2024	4,378,119	6.8	297,712	(1,263,208)	16.4	718,012	1,571,655	9.6	420,300	2,834,863
2025	4,520,408	6.9	311,908	(1,266,497)	16.5	745,867	1,512,949	9.6	433,959	2,779,446
2026	4,667,321	7.1	331,380	(1,274,495)	16.7	779,443	1,437,035	9.6	448,063	2,711,530
2027	4,819,009	7.2	346,969	(1,287,545)	16.8	809,594	1,342,389	9.6	462,625	2,629,934
2028	4,975,627	7.3	363,221	(1,306,018)	16.9	840,881	1,227,363	9.6	477,660	2,533,381

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 28, 2019, the actuarial value of assets is \$8,403,247; the estimated market value of assets is \$8,462,484; the actuarial accrued liability is \$7,096,154; and the funded ratio is 118.4%. 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 28, 2019, there is no difference between the capped and uncapped employer contribution rate.

The City of Grandview

Computed Employer Contribution Rates - Police Employees

As of February 28, 2019

<u>Benefit Plans</u>	<u>Present</u>	<u>Alternate</u>
# Benefit Program:	LT-5(65)	L-6
# Final Average Salary:	3 year	5 year
Member Contributions:	Non-Contributory	Non-Contributory
Retirement Eligibility:	Regular	Regular

<u>Present Plan</u>	<u>Rates</u>
Current Service Cost	8.7%
Disability Cost	0.5
Prior Service Cost	<u>1.6</u>
Total	10.8%
 <u>Alternate Plan</u> 	
Current Service Cost	11.8%
Disability Cost	0.8
Prior Service Cost*	<u>5.7</u>
Total	18.3%
 Increase In Contribution Rate For Alternate Plan	 <u>7.5%</u>

Employer contribution rates shown above are for the fiscal year beginning in 2020. If the alternate plan is adopted prior to the fiscal year beginning in 2020, 7.5% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

* Adoption of the alternate plan would increase the actuarial accrued liability by \$1,748,533 which was amortized over a 20 year period to compute the increase in the Prior Service Cost.

It was assumed that all service credited prior to the date of adoption would continue to be covered under the 3 year FAS provision.

The City of Grandview

Projected Estimated Employer Contribution Rates - Police Employees

As of February 28, 2019

Valuation Date Feb. 28	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	
2019	\$3,108,884	10.8%	\$335,759	\$433,180	18.3%	\$568,926	\$2,181,713	7.5%	\$233,167	\$1,748,533
2020	3,209,923	10.8	346,672	412,010	18.3	587,416	2,155,947	7.5	240,744	1,743,937
2021	3,314,245	10.9	361,253	387,239	18.4	609,821	2,121,977	7.5	248,568	1,734,738
2022	3,421,958	10.9	372,993	358,545	18.4	629,640	2,079,010	7.5	256,647	1,720,465
2023	3,533,172	10.9	385,116	325,582	18.4	650,104	2,026,187	7.5	264,988	1,700,605
2024	3,648,000	10.9	397,632	287,976	18.4	671,232	1,962,582	7.5	273,600	1,674,606
2025	3,766,560	10.9	410,555	245,323	18.4	693,047	1,887,193	7.5	282,492	1,641,870
2026	3,888,973	10.9	423,898	197,190	18.4	715,571	1,798,941	7.5	291,673	1,601,751
2027	4,015,365	10.9	437,675	143,106	18.4	738,827	1,696,656	7.5	301,152	1,553,550
2028	4,145,864	10.9	451,899	82,567	18.4	762,839	1,579,082	7.5	310,940	1,496,515

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 28, 2019, the actuarial value of assets is \$5,243,658; the estimated market value of assets is \$5,280,622; the actuarial accrued liability is \$5,676,838; and the funded ratio is 92.4%. 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 28, 2019, there is no difference between the capped and uncapped employer contribution rate.

The City of Grandview

Computed Employer Contribution Rates - Fire Employees

As of February 28, 2019

<u>Benefit Plans</u>	<u>Present</u>	<u>Alternate</u>
# Benefit Program:	LT-5(65)	L-6
# Final Average Salary:	3 year	5 year
Member Contributions:	Non-Contributory	Non-Contributory
Retirement Eligibility:	Regular	Regular

<u>Present Plan</u>	<u>Rates</u>
Current Service Cost	10.8%
Disability Cost	0.7
Prior Service Cost	<u>(5.3)</u>
Total	6.2%
 <u>Alternate Plan</u> 	
Current Service Cost	14.4%
Disability Cost	1.0
Prior Service Cost*	<u>1.3</u>
Total	16.7%
 Increase In Contribution Rate For Alternate Plan	 <u>10.5%</u> @

Employer contribution rates shown above are for the fiscal year beginning in 2020. If the alternate plan is adopted prior to the fiscal year beginning in 2020, 10.5% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

* Adoption of the alternate plan would increase the actuarial accrued liability by \$2,165,595 which was amortized over a 20 year period to compute the increase in the Prior Service Cost.

@ The increase of 10.5% as shown above, includes the estimated cost (value) of the change in benefit provisions equal to 10.0% of payroll and 0.5% of payroll due to the capped contribution rate of this group as of February 28, 2019.

It was assumed that all service credited prior to the date of adoption would continue to be covered under the 3 year FAS provision.

The City of Grandview

Projected Estimated Employer Contribution Rates - Fire Employees

As of February 28, 2019

Valuation Date Feb. 28	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
2019	\$2,554,566	6.2%	\$158,383	\$(1,511,193)	16.7%	\$426,613	\$654,402	10.5%	\$268,230	\$2,165,595
2020	2,637,589	7.0	184,631	(1,480,170)	17.0	448,390	666,960	10.0	263,759	2,147,130
2021	2,723,311	7.3	198,802	(1,466,096)	17.3	471,133	669,891	10.0	272,331	2,135,987
2022	2,811,819	7.7	216,510	(1,456,215)	17.7	497,692	662,339	10.0	281,182	2,118,554
2023	2,903,203	7.9	229,353	(1,450,820)	17.9	519,673	643,377	10.0	290,320	2,094,197
2024	2,997,557	8.2	245,800	(1,450,231)	18.2	545,555	612,000	10.0	299,755	2,062,231
2025	3,094,978	8.5	263,073	(1,454,793)	18.5	572,571	567,125	10.0	309,498	2,021,918
2026	3,195,565	8.7	278,014	(1,464,879)	18.7	597,571	507,577	10.0	319,557	1,972,456
2027	3,299,421	9.0	296,948	(1,480,893)	19.0	626,890	432,088	10.0	329,942	1,912,981
2028	3,406,652	9.2	313,412	(1,503,272)	19.2	654,077	339,286	10.0	340,665	1,842,558

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 28, 2019, the actuarial value of assets is \$8,659,186; the estimated market value of assets is \$8,720,228; the actuarial accrued liability is \$7,147,993; and the funded ratio is 121.1%. 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 28, 2019, the uncapped employer contribution rate was computed to be 6.7% of payroll.

The City of Grandview

Computed Employer Contribution Rates - General Employees

As of February 28, 2019

<u>Benefit Plans</u>	<u>Present</u>	<u>Alternate</u>
# Benefit Program:	LT-5(65)	L-6
# Final Average Salary:	3 year	5 year
# Member Contributions:	Non-Contributory	Contributory
Retirement Eligibility:	Regular	Regular

<u>Present Plan</u>	<u>Rates</u>
Current Service Cost	8.4%
Disability Cost	0.3
Prior Service Cost	<u>(2.9)</u>
Total	5.8%
 <u>Alternate Plan</u> 	
Current Service Cost	8.5%
Disability Cost	0.5
Prior Service Cost*	<u>2.5</u>
Total	11.5%
 Increase In Contribution Rate For Alternate Plan	 <u>5.7%</u>

Employer contribution rates shown above are for the fiscal year beginning in 2020. If the alternate plan is adopted prior to the fiscal year beginning in 2020, 5.7% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

* Adoption of the alternate plan would increase the actuarial accrued liability by \$2,803,339 which was amortized over a 20 year period to compute the increase in the Prior Service Cost.

It was assumed that all service credited prior to the date of adoption would continue to be covered under the 3 year FAS provision.

The City of Grandview

Projected Estimated Employer Contribution Rates - General Employees

As of February 28, 2019

Valuation Date Feb. 28	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
2019	\$3,731,103	5.8%	\$216,404	\$(1,307,093)	11.5%	\$429,077	\$1,496,246	5.7%	\$212,673	\$2,803,339
2020	3,852,364	6.0	231,142	(1,291,142)	11.7	450,727	1,504,828	5.7	219,585	2,795,970
2021	3,977,566	6.2	246,609	(1,278,538)	11.9	473,330	1,502,685	5.7	226,721	2,781,223
2022	4,106,837	6.4	262,838	(1,269,510)	12.1	496,927	1,488,828	5.7	234,089	2,758,338
2023	4,240,309	6.6	279,860	(1,264,310)	12.3	521,558	1,462,188	5.7	241,698	2,726,498
2024	4,378,119	6.8	297,712	(1,263,208)	12.5	547,265	1,421,607	5.7	249,553	2,684,815
2025	4,520,408	6.9	311,908	(1,266,497)	12.6	569,571	1,365,834	5.7	257,663	2,632,331
2026	4,667,321	7.1	331,380	(1,274,495)	12.8	597,417	1,293,515	5.7	266,037	2,568,010
2027	4,819,009	7.2	346,969	(1,287,545)	12.9	621,652	1,203,188	5.7	274,683	2,490,733
2028	4,975,627	7.3	363,221	(1,306,018)	13.0	646,832	1,093,273	5.7	283,611	2,399,291

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 28, 2019, the actuarial value of assets is \$8,403,247; the estimated market value of assets is \$8,462,484; the actuarial accrued liability is \$7,096,154; and the funded ratio is 118.4%. 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 28, 2019, there is no difference between the capped and uncapped employer contribution rate.

The City of Grandview

Computed Employer Contribution Rates - Police Employees

As of February 28, 2019

<u>Benefit Plans</u>	<u>Present</u>	<u>Alternate</u>
# Benefit Program:	LT-5(65)	L-6
# Final Average Salary:	3 year	5 year
# Member Contributions:	Non-Contributory	Contributory
Retirement Eligibility:	Regular	Regular

<u>Present Plan</u>	<u>Rates</u>
Current Service Cost	8.7%
Disability Cost	0.5
Prior Service Cost	<u>1.6</u>
Total	10.8%
 <u>Alternate Plan</u> 	
Current Service Cost	8.4%
Disability Cost	0.8
Prior Service Cost*	<u>5.2</u>
Total	14.4%
 Increase In Contribution Rate For Alternate Plan	 <u>3.6%</u>

Employer contribution rates shown above are for the fiscal year beginning in 2020. If the alternate plan is adopted prior to the fiscal year beginning in 2020, 3.6% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

* Adoption of the alternate plan would increase the actuarial accrued liability by \$1,536,169 which was amortized over a 20 year period to compute the increase in the Prior Service Cost.

It was assumed that all service credited prior to the date of adoption would continue to be covered under the 3 year FAS provision.

The City of Grandview

Projected Estimated Employer Contribution Rates - Police Employees

As of February 28, 2019

Valuation Date Feb. 28	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	
2019	\$3,108,884	10.8%	\$335,759	\$433,180	14.4%	\$447,679	\$1,969,349	3.6%	\$111,920	\$1,536,169
2020	3,209,923	10.8	346,672	412,010	14.4	462,229	1,944,141	3.6	115,557	1,532,131
2021	3,314,245	10.9	361,253	387,239	14.5	480,566	1,911,289	3.6	119,313	1,524,050
2022	3,421,958	10.9	372,993	358,545	14.5	496,184	1,870,055	3.6	123,191	1,511,510
2023	3,533,172	10.9	385,116	325,582	14.5	512,310	1,819,644	3.6	127,194	1,494,062
2024	3,648,000	10.9	397,632	287,976	14.5	528,960	1,759,196	3.6	131,328	1,471,220
2025	3,766,560	10.9	410,555	245,323	14.5	546,151	1,687,783	3.6	135,596	1,442,460
2026	3,888,973	10.9	423,898	197,190	14.5	563,901	1,604,404	3.6	140,003	1,407,214
2027	4,015,365	10.9	437,675	143,106	14.5	582,228	1,507,974	3.6	144,553	1,364,868
2028	4,145,864	10.9	451,899	82,567	14.5	601,150	1,397,326	3.6	149,251	1,314,759

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 28, 2019, the actuarial value of assets is \$5,243,658; the estimated market value of assets is \$5,280,622; the actuarial accrued liability is \$5,676,838; and the funded ratio is 92.4%. 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 28, 2019, there is no difference between the capped and uncapped employer contribution rate.

The City of Grandview

Computed Employer Contribution Rates - Fire Employees

As of February 28, 2019

<u>Benefit Plans</u>	<u>Present</u>	<u>Alternate</u>
# Benefit Program:	LT-5(65)	L-6
# Final Average Salary:	3 year	5 year
# Member Contributions:	Non-Contributory	Contributory
Retirement Eligibility:	Regular	Regular

<u>Present Plan</u>	<u>Rates</u>
Current Service Cost	10.8%
Disability Cost	0.7
Prior Service Cost	<u>(5.3)</u>
Total	6.2%

<u>Alternate Plan</u>	
Current Service Cost	10.5%
Disability Cost	1.0
Prior Service Cost*	<u>1.3</u>
Total	12.8%

**Increase In Contribution
Rate For Alternate Plan** 6.6% @

Employer contribution rates shown above are for the fiscal year beginning in 2020. If the alternate plan is adopted prior to the fiscal year beginning in 2020, 6.6% would be added to the employer contribution rate currently in effect.

Change in provisions from present plan.

* Adoption of the alternate plan would increase the actuarial accrued liability by \$2,147,521 which was amortized over a 20 year period to compute the increase in the Prior Service Cost.

@ The increase of 6.6% as shown above, includes the estimated cost (value) of the change in benefit provisions equal to 6.1% of payroll and 0.5% of payroll due to the capped contribution rate of this group as of February 28, 2019.

It was assumed that all service credited prior to the date of adoption would continue to be covered under the 3 year FAS provision.

The City of Grandview

Projected Estimated Employer Contribution Rates - Fire Employees

As of February 28, 2019

Valuation Date Feb. 28	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	
2019	\$2,554,566	6.2%	\$158,383	\$(1,511,193)	12.8%	\$326,984	\$636,328	6.6%	\$168,601	\$2,147,521
2020	2,637,589	7.0	184,631	(1,480,170)	13.1	345,524	648,933	6.1	160,893	2,129,103
2021	2,723,311	7.3	198,802	(1,466,096)	13.4	364,924	651,959	6.1	166,122	2,118,055
2022	2,811,819	7.7	216,510	(1,456,215)	13.8	388,031	644,555	6.1	171,521	2,100,770
2023	2,903,203	7.9	229,353	(1,450,820)	14.0	406,448	625,798	6.1	177,095	2,076,618
2024	2,997,557	8.2	245,800	(1,450,231)	14.3	428,651	594,691	6.1	182,851	2,044,922
2025	3,094,978	8.5	263,073	(1,454,793)	14.6	451,867	550,154	6.1	188,794	2,004,947
2026	3,195,565	8.7	278,014	(1,464,879)	14.8	472,944	491,020	6.1	194,930	1,955,899
2027	3,299,421	9.0	296,948	(1,480,893)	15.1	498,213	416,029	6.1	201,265	1,896,922
2028	3,406,652	9.2	313,412	(1,503,272)	15.3	521,218	323,817	6.1	207,806	1,827,089

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 28, 2019, the actuarial value of assets is \$8,659,186; the estimated market value of assets is \$8,720,228; the actuarial accrued liability is \$7,147,993; and the funded ratio is 121.1%. 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 28, 2019, the uncapped employer contribution rate was computed to be 6.7% of payroll.

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		Fire	
		Men		Women		Disability	Withdrawal	Disability	Withdrawal
		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

Percent Increase in Individual's Pay During Next Year		
Sample Ages	General & Police	Fire
25	6.55%	7.15%
30	5.75	6.05
35	5.25	5.15
40	4.75	4.45
45	4.25	4.15
50	3.85	3.85
55	3.65	3.65
60	3.55	3.25
65	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	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	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	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 28, 2019

(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 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(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 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 4% of compensation beginning after completion of sufficient employment for 6 months of credited service.

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 non-contributory plan in which the full cost of LAGERS participation is paid by the employer. Adoption of the non-contributory provisions may be done at the time of membership or a later date; however, a change from contributory to non-contributory or vice-versa may not be made more frequently than every 2 years. Under the non-contributory provisions 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 FAS¹)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³	Estimated Social Security ²	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$ 525	\$ 930	\$1,455	97%
2,000	700	1,076	1,776	89%
2,500	875	1,223	2,098	84%
3,000	1,050	1,370	2,420	81%
3,500	1,225	1,516	2,741	78%
4,000	1,400	1,662	3,062	77%
25 Years of Service:				
\$1,500	\$ 375	\$ 930	\$1,305	87%
2,000	500	1,076	1,576	79%
2,500	625	1,223	1,848	74%
3,000	750	1,370	2,120	71%
3,500	875	1,516	2,391	68%
4,000	1,000	1,662	2,662	67%
15 Years of Service:				
\$1,500	\$225	\$ 930	\$1,155	77%
2,000	300	1,076	1,376	69%
2,500	375	1,223	1,598	64%
3,000	450	1,370	1,820	61%
3,500	525	1,516	2,041	58%
4,000	600	1,662	2,262	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 2019 - 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	\$ 930	\$1,586	106%
2,000	875	1,076	1,951	98%
2,500	1,094	1,223	2,317	93%
3,000	1,313	1,370	2,683	89%
3,500	1,531	1,516	3,047	87%
4,000	1,750	1,662	3,412	85%
25 Years of Service:				
\$1,500	\$ 469	\$ 930	\$1,399	93%
2,000	625	1,076	1,701	85%
2,500	781	1,223	2,004	80%
3,000	938	1,370	2,308	77%
3,500	1,094	1,516	2,610	75%
4,000	1,250	1,662	2,912	73%
15 Years of Service:				
\$1,500	\$281	\$ 930	\$1,211	81%
2,000	375	1,076	1,451	73%
2,500	469	1,223	1,692	68%
3,000	563	1,370	1,933	64%
3,500	656	1,516	2,172	62%
4,000	750	1,662	2,412	60%

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 2019 - 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 FAS¹)

Final Average Salary (FAS) ¹	LAGERS BENEFIT ³	Estimated Social Security ²	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$ 788	\$ 930	\$1,718	115%
2,000	1,050	1,076	2,126	106%
2,500	1,313	1,223	2,536	101%
3,000	1,575	1,370	2,945	98%
3,500	1,838	1,516	3,354	96%
4,000	2,100	1,662	3,762	94%
25 Years of Service:				
\$1,500	\$ 563	\$ 930	\$1,493	100%
2,000	750	1,076	1,826	91%
2,500	938	1,223	2,161	86%
3,000	1,125	1,370	2,495	83%
3,500	1,313	1,516	2,829	81%
4,000	1,500	1,662	3,162	79%
15 Years of Service:				
\$1,500	\$338	\$ 930	\$1,268	85%
2,000	450	1,076	1,526	76%
2,500	563	1,223	1,786	71%
3,000	675	1,370	2,045	68%
3,500	788	1,516	2,304	66%
4,000	900	1,662	2,562	64%

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 2019 - 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	\$ 930	\$1,770	118%
2,000	1,120	1,076	2,196	110%
2,500	1,400	1,223	2,623	105%
3,000	1,680	1,370	3,050	102%
3,500	1,960	1,516	3,476	99%
4,000	2,240	1,662	3,902	98%
25 Years of Service:				
\$1,500	\$ 600	\$ 930	\$1,530	102%
2,000	800	1,076	1,876	94%
2,500	1,000	1,223	2,223	89%
3,000	1,200	1,370	2,570	86%
3,500	1,400	1,516	2,916	83%
4,000	1,600	1,662	3,262	82%
15 Years of Service:				
\$1,500	\$360	\$ 930	\$1,290	86%
2,000	480	1,076	1,556	78%
2,500	600	1,223	1,823	73%
3,000	720	1,370	2,090	70%
3,500	840	1,516	2,356	67%
4,000	960	1,662	2,622	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 2019 - 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	\$ 930	\$1,849	123%
2,000	1,225	1,076	2,301	115%
2,500	1,531	1,223	2,754	110%
3,000	1,838	1,370	3,208	107%
3,500	2,144	1,516	3,660	105%
4,000	2,450	1,662	4,112	103%
25 Years of Service:				
\$1,500	\$ 656	\$ 930	\$1,586	106%
2,000	875	1,076	1,951	98%
2,500	1,094	1,223	2,317	93%
3,000	1,313	1,370	2,683	89%
3,500	1,531	1,516	3,047	87%
4,000	1,750	1,662	3,412	85%
15 Years of Service:				
\$1,500	\$ 394	\$ 930	\$1,324	88%
2,000	525	1,076	1,601	80%
2,500	656	1,223	1,879	75%
3,000	788	1,370	2,158	72%
3,500	919	1,516	2,435	70%
4,000	1,050	1,662	2,712	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 2019 - 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 FAS¹)

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	\$ 930	\$1,980	132%
2,000	1,400	1,076	2,476	124%
2,500	1,750	1,223	2,973	119%
3,000	2,100	1,370	3,470	116%
3,500	2,450	1,516	3,966	113%
4,000	2,800	1,662	4,462	112%
25 Years of Service:				
\$1,500	\$ 750	\$ 930	\$1,680	112%
2,000	1,000	1,076	2,076	104%
2,500	1,250	1,223	2,473	99%
3,000	1,500	1,370	2,870	96%
3,500	1,750	1,516	3,266	93%
4,000	2,000	1,662	3,662	92%
15 Years of Service:				
\$1,500	\$ 450	\$ 930	\$1,380	92%
2,000	600	1,076	1,676	84%
2,500	750	1,223	1,973	79%
3,000	900	1,370	2,270	76%
3,500	1,050	1,516	2,566	73%
4,000	1,200	1,662	2,862	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 2019 - 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 2019 - 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 FAS¹ to age 62)
1.00% of FAS¹ 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	\$ 741	\$1,050	\$1,266	70%	84%
2,000	1,400	700	857	1,400	1,557	70%	78%
2,500	1,750	875	973	1,750	1,848	70%	74%
3,000	2,100	1,050	1,089	2,100	2,139	70%	71%
3,500	2,450	1,225	1,206	2,450	2,431	70%	69%
4,000	2,800	1,400	1,322	2,800	2,722	70%	68%
25 Years of Service:							
\$1,500	\$ 750	\$ 375	\$ 741	\$ 750	\$1,116	50%	74%
2,000	1,000	500	857	1,000	1,357	50%	68%
2,500	1,250	625	973	1,250	1,598	50%	64%
3,000	1,500	750	1,089	1,500	1,839	50%	61%
3,500	1,750	875	1,206	1,750	2,081	50%	59%
4,000	2,000	1,000	1,322	2,000	2,322	50%	58%
15 Years of Service:							
\$1,500	\$ 450	\$225	\$ 741	\$ 450	\$ 966	30%	64%
2,000	600	300	857	600	1,157	30%	58%
2,500	750	375	973	750	1,348	30%	54%
3,000	900	450	1,089	900	1,539	30%	51%
3,500	1,050	525	1,206	1,050	1,731	30%	49%
4,000	1,200	600	1,322	1,200	1,922	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 2019 - 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 FAS¹ to age 65)
1.00% 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	\$ 525	\$ 930	\$1,050	\$1,455	70%	97%
2,000	1,400	700	1,076	1,400	1,776	70%	89%
2,500	1,750	875	1,223	1,750	2,098	70%	84%
3,000	2,100	1,050	1,370	2,100	2,420	70%	81%
3,500	2,450	1,225	1,516	2,450	2,741	70%	78%
4,000	2,800	1,400	1,662	2,800	3,062	70%	77%
25 Years of Service:							
\$1,500	\$ 750	\$ 375	\$ 930	\$ 750	\$1,305	50%	87%
2,000	1,000	500	1,076	1,000	1,576	50%	79%
2,500	1,250	625	1,223	1,250	1,848	50%	74%
3,000	1,500	750	1,370	1,500	2,120	50%	71%
3,500	1,750	875	1,516	1,750	2,391	50%	68%
4,000	2,000	1,000	1,662	2,000	2,662	50%	67%
15 Years of Service:							
\$1,500	\$ 450	\$225	\$ 930	\$ 450	\$1,155	30%	77%
2,000	600	300	1,076	600	1,376	30%	69%
2,500	750	375	1,223	750	1,598	30%	64%
3,000	900	450	1,370	900	1,820	30%	61%
3,500	1,050	525	1,516	1,050	2,041	30%	58%
4,000	1,200	600	1,662	1,200	2,262	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 2019 - 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	\$ 741	\$1,050	\$1,397	70%	93%
2,000	1,400	875	857	1,400	1,732	70%	87%
2,500	1,750	1,094	973	1,750	2,067	70%	83%
3,000	2,100	1,313	1,089	2,100	2,402	70%	80%
3,500	2,450	1,531	1,206	2,450	2,737	70%	78%
4,000	2,800	1,750	1,322	2,800	3,072	70%	77%
25 Years of Service:							
\$1,500	\$ 750	\$ 469	\$ 741	\$ 750	\$1,210	50%	81%
2,000	1,000	625	857	1,000	1,482	50%	74%
2,500	1,250	781	973	1,250	1,754	50%	70%
3,000	1,500	938	1,089	1,500	2,027	50%	68%
3,500	1,750	1,094	1,206	1,750	2,300	50%	66%
4,000	2,000	1,250	1,322	2,000	2,572	50%	64%
15 Years of Service:							
\$1,500	\$ 450	\$281	\$ 741	\$ 450	\$1,022	30%	68%
2,000	600	375	857	600	1,232	30%	62%
2,500	750	469	973	750	1,442	30%	58%
3,000	900	563	1,089	900	1,652	30%	55%
3,500	1,050	656	1,206	1,050	1,862	30%	53%
4,000	1,200	750	1,322	1,200	2,072	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 2019 - 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	\$ 930	\$1,050	\$1,586	70%	106%
2,000	1,400	875	1,076	1,400	1,951	70%	98%
2,500	1,750	1,094	1,223	1,750	2,317	70%	93%
3,000	2,100	1,313	1,370	2,100	2,683	70%	89%
3,500	2,450	1,531	1,516	2,450	3,047	70%	87%
4,000	2,800	1,750	1,662	2,800	3,412	70%	85%
25 Years of Service:							
\$1,500	\$ 750	\$ 469	\$ 930	\$ 750	\$1,399	50%	93%
2,000	1,000	625	1,076	1,000	1,701	50%	85%
2,500	1,250	781	1,223	1,250	2,004	50%	80%
3,000	1,500	938	1,370	1,500	2,308	50%	77%
3,500	1,750	1,094	1,516	1,750	2,610	50%	75%
4,000	2,000	1,250	1,662	2,000	2,912	50%	73%
15 Years of Service:							
\$1,500	\$ 450	\$281	\$ 930	\$ 450	\$1,211	30%	81%
2,000	600	375	1,076	600	1,451	30%	73%
2,500	750	469	1,223	750	1,692	30%	68%
3,000	900	563	1,370	900	1,933	30%	64%
3,500	1,050	656	1,516	1,050	2,172	30%	62%
4,000	1,200	750	1,662	1,200	2,412	30%	60%

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 2019 - 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 FAS¹ to age 62)
1.50% of FAS¹ 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	\$ 741	\$1,050	\$1,529	70%	102%
2,000	1,400	1,050	857	1,400	1,907	70%	95%
2,500	1,750	1,313	973	1,750	2,286	70%	91%
3,000	2,100	1,575	1,089	2,100	2,664	70%	89%
3,500	2,450	1,838	1,206	2,450	3,044	70%	87%
4,000	2,800	2,100	1,322	2,800	3,422	70%	86%
25 Years of Service:							
\$1,500	\$ 750	\$ 563	\$ 741	\$ 750	\$1,304	50%	87%
2,000	1,000	750	857	1,000	1,607	50%	80%
2,500	1,250	938	973	1,250	1,911	50%	76%
3,000	1,500	1,125	1,089	1,500	2,214	50%	74%
3,500	1,750	1,313	1,206	1,750	2,519	50%	72%
4,000	2,000	1,500	1,322	2,000	2,822	50%	71%
15 Years of Service:							
\$1,500	\$ 450	\$338	\$ 741	\$ 450	\$1,079	30%	72%
2,000	600	450	857	600	1,307	30%	65%
2,500	750	563	973	750	1,536	30%	61%
3,000	900	675	1,089	900	1,764	30%	59%
3,500	1,050	788	1,206	1,050	1,994	30%	57%
4,000	1,200	900	1,322	1,200	2,222	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 2019 - 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 FAS¹ to age 65)
1.50% 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	\$ 788	\$ 930	\$1,050	\$1,718	70%	115%
2,000	1,400	1,050	1,076	1,400	2,126	70%	106%
2,500	1,750	1,313	1,223	1,750	2,536	70%	101%
3,000	2,100	1,575	1,370	2,100	2,945	70%	98%
3,500	2,450	1,838	1,516	2,450	3,354	70%	96%
4,000	2,800	2,100	1,662	2,800	3,762	70%	94%
25 Years of Service:							
\$1,500	\$ 750	\$ 563	\$ 930	\$ 750	\$1,493	50%	100%
2,000	1,000	750	1,076	1,000	1,826	50%	91%
2,500	1,250	938	1,223	1,250	2,161	50%	86%
3,000	1,500	1,125	1,370	1,500	2,495	50%	83%
3,500	1,750	1,313	1,516	1,750	2,829	50%	81%
4,000	2,000	1,500	1,662	2,000	3,162	50%	79%
15 Years of Service:							
\$1,500	\$ 450	\$338	\$ 930	\$ 450	\$1,268	30%	85%
2,000	600	450	1,076	600	1,526	30%	76%
2,500	750	563	1,223	750	1,786	30%	71%
3,000	900	675	1,370	900	2,045	30%	68%
3,500	1,050	788	1,516	1,050	2,304	30%	66%
4,000	1,200	900	1,662	1,200	2,562	30%	64%

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 2019 - 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	\$ 930	\$1,050	\$1,770	70%	118%
2,000	1,400	1,120	1,076	1,400	2,196	70%	110%
2,500	1,750	1,400	1,223	1,750	2,623	70%	105%
3,000	2,100	1,680	1,370	2,100	3,050	70%	102%
3,500	2,450	1,960	1,516	2,450	3,476	70%	99%
4,000	2,800	2,240	1,662	2,800	3,902	70%	98%
25 Years of Service:							
\$1,500	\$750	\$ 600	\$ 930	\$ 750	\$1,530	50%	102%
2,000	1,000	800	1,076	1,000	1,876	50%	94%
2,500	1,250	1,000	1,223	1,250	2,223	50%	89%
3,000	1,500	1,200	1,370	1,500	2,570	50%	86%
3,500	1,750	1,400	1,516	1,750	2,916	50%	83%
4,000	2,000	1,600	1,662	2,000	3,262	50%	82%
15 Years of Service:							
\$1,500	\$ 450	\$360	\$ 930	\$ 450	\$1,290	30%	86%
2,000	600	480	1,076	600	1,556	30%	78%
2,500	750	600	1,223	750	1,823	30%	73%
3,000	900	720	1,370	900	2,090	30%	70%
3,500	1,050	840	1,516	1,050	2,356	30%	67%
4,000	1,200	960	1,662	1,200	2,622	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 2019 - 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 FAS¹ to age 65) 1.75% 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	\$ 919	\$ 930	\$1,050	\$1,849	70%	123%
2,000	1,400	1,225	1,076	1,400	2,301	70%	115%
2,500	1,750	1,531	1,223	1,750	2,754	70%	110%
3,000	2,100	1,838	1,370	2,100	3,208	70%	107%
3,500	2,450	2,144	1,516	2,450	3,660	70%	105%
4,000	2,800	2,450	1,662	2,800	4,112	70%	103%
25 Years of Service:							
\$1,500	\$ 750	\$ 656	\$ 930	\$ 750	\$1,586	50%	106%
2,000	1,000	875	1,076	1,000	1,951	50%	98%
2,500	1,250	1,094	1,223	1,250	2,317	50%	93%
3,000	1,500	1,313	1,370	1,500	2,683	50%	89%
3,500	1,750	1,531	1,516	1,750	3,047	50%	87%
4,000	2,000	1,750	1,662	2,000	3,412	50%	85%
15 Years of Service:							
\$1,500	\$ 450	\$ 394	\$ 930	\$ 450	\$1,324	30%	88%
2,000	600	525	1,076	600	1,601	30%	80%
2,500	750	656	1,223	750	1,879	30%	75%
3,000	900	788	1,370	900	2,158	30%	72%
3,500	1,050	919	1,516	1,050	2,435	30%	70%
4,000	1,200	1,050	1,662	1,200	2,712	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 2019 - 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¢.



December 13, 2019 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 28, 2019 Supplemental Actuarial Valuation of LAGERS benefits for the employees of:

The City of Grandview

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