



The Initial Valuation For
Grand River Township
as of July 31, 2020



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October 21, 2020

Grand River Township
Cameron, Missouri

Ladies and Gentlemen:

Submitted in this report are the results of the actuarial valuation prepared to determine the employer contribution rates required to support, for your employees, the 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 the adoption of LAGERS benefits by a political subdivision (Sections 105.660 - 106.685 RSMo). This report should not be relied on for any purpose other than the purposes described herein. Determinations of financial results, associated with the benefits described in this report, for purposes other than those identified above may be significantly different.

This report was prepared at the request of the political subdivision and is intended for use by the political subdivision and those designated or approved by the political subdivision. This report may be provided to parties other than the political subdivision only in its entirety and only with the permission of the political subdivision. GRS is not responsible for unauthorized use of this report.

The contribution requirement for benefits likely to accrue as a result of the future service of your employees is described on pages 4 thru 7 as the normal cost rate and the casualty rate. This contribution rate, expressed as a percent of active employee payroll, will depend on the benefit program adopted.

The contribution requirement to pay for benefits likely to result from service rendered by your employees before you join LAGERS is described on pages 4 thru 7 as the prior service cost rate. The value established for prior service is called the unfunded actuarial accrued liability (these amounts are further described in Appendix I). The prior service cost rate is the rate of contribution designed to pay for the unfunded actuarial accrued liability over a period of not more than 30 years.

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 (the total employer contribution rate as shown on pages 4 thru 7). These contributions are mandatory after official action has been taken to join the System.

The total annual dollar costs shown on pages 8 and 9 represent the dollar cost of each benefit program for a one year period based on the payroll reported for this actuarial valuation. In budgeting amounts for LAGERS contributions you should consider any changes in payroll which have been made since data was submitted for the valuation and any changes anticipated to be made before the end of the period for which you are preparing the budget.

The actuarial assumptions and methods used to determine the stated costs are described in Appendix II 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.

The computed contributions required for LAGERS participation 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. This valuation assumed the ability of the plan sponsor to make the contributions necessary to fund this plan. A determination regarding whether or not the plan sponsor is actually able to do so is outside our expertise and not performed. Summary provisions of the law as well as benefit illustrations can be found in Appendices III and IV.

Projections needed to comply with Missouri State disclosure requirements (Section 105.665 of the RSMo) regarding the adoption of LAGERS benefits by a political subdivision are available upon request from LAGERS.

Please 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 join the System. 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.

In accordance with LAGERS Board policy, the employer contribution rates established by this valuation report are valid for purposes of joining the System for a two year period from the date of this valuation which was July 31, 2020. The valuation was based on data furnished from your records concerning individual employees (see Appendix V).

This report includes risk commentary in Appendix VI, but does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

If you have any questions concerning this report or LAGERS in general, please contact the LAGERS office in Jefferson City.

This report has been prepared by actuaries who have substantial experience valuing public employee retirement systems. To the best of our knowledge the information contained in this report is accurate and fairly presents the actuarial position of the political subdivision as of the valuation date. All calculations have been made in conformity with generally accepted actuarial principles and practices, with the actuarial standards of practice issued by the Actuarial Standards Board, and with applicable statutes.

Mita D. Drazilov is a member of the American Academy of Actuaries and meets the Qualification Standards of the Academy of Actuaries to render the actuarial opinions contained herein.

The signing actuary is independent of the plan sponsor.

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 either 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 which they feel 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 III of this report.

Grand River Township

Employer Contribution Rates 5 Year FAS - Regular Retirement Eligibility

Benefit Program	Employee Groups	Percents of Active Member Payroll						
		Normal Cost Rate	Casualty Rate	Prior Service Cost Rate *	Total Employer Contribution Rate Based Upon the Following Member Contribution Rates			
					0%	2%	4%	6%
L-1	General	5.40%	0.20%	1.80%	7.40%	5.50%	3.60%	1.70%
L-3	General	6.50	0.30	2.30	9.10	7.20	5.30	3.40
LT-4(65)	General	5.90	0.20	2.10	8.20	6.30	4.40	2.50
LT-5(65)	General	6.90	0.30	2.50	9.70	7.80	5.90	4.00
L-7	General	7.60	0.30	2.70	10.60	8.70	6.80	4.90
LT-8(65)	General	7.90	0.30	2.90	11.10	9.20	7.30	5.40
L-12	General	8.80	0.40	3.20	12.40	10.50	8.60	6.70
LT-14(65)	General	8.90	0.40	3.30	12.60	10.70	8.80	6.90
L-6	General	9.90	0.50	3.70	14.10	12.20	10.30	8.40

* Assumes that credit is granted for 100% of service rendered prior to the membership date for employees working in a covered position on the membership date and employed continuously in a covered position for one year with this employer. If the governing body wishes to elect one of the lesser percents allowed by law -- 75%, 50%, or 25% -- the prior service cost rate will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.

The total employer contribution rate for each member contribution rate option shown above includes the prior service cost rate, casualty rate and corresponding normal cost rate. The prior service cost rate is the cost associated with paying off the unfunded actuarial accrued liability (past service). The normal cost rate plus the casualty rate is the cost of members' service being rendered each year (future service). For purposes of this initial valuation, the total employer contribution rate for the 0% member contribution rate plan is decreased by 1.9%, 3.8% and 5.7% for the 2%, 4% and 6% member contribution rate plans, respectively.

Grand River Township

Employer Contribution Rates 3 Year FAS - Regular Retirement Eligibility

Benefit Program	Employee Groups	Percents of Active Member Payroll						
		Normal Cost Rate	Casualty Rate	Prior Service Cost Rate *	Total Employer Contribution Rate Based Upon the Following Member Contribution Rates			
					0%	2%	4%	6%
L-1	General	5.60%	0.20%	1.90%	7.70%	5.80%	3.90%	2.00%
L-3	General	6.70	0.30	2.40	9.40	7.50	5.60	3.70
LT-4(65)	General	6.10	0.20	2.20	8.50	6.60	4.70	2.80
LT-5(65)	General	7.10	0.30	2.60	10.00	8.10	6.20	4.30
L-7	General	7.90	0.30	2.80	11.00	9.10	7.20	5.30
LT-8(65)	General	8.20	0.30	3.00	11.50	9.60	7.70	5.80
L-12	General	9.10	0.40	3.30	12.80	10.90	9.00	7.10
LT-14(65)	General	9.20	0.40	3.40	13.00	11.10	9.20	7.30
L-6	General	10.20	0.50	3.80	14.50	12.60	10.70	8.80

* Assumes that credit is granted for 100% of service rendered prior to the membership date for employees working in a covered position on the membership date and employed continuously in a covered position for one year with this employer. If the governing body wishes to elect one of the lesser percents allowed by law -- 75%, 50%, or 25% -- the prior service cost rate will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.

The total employer contribution rate for each member contribution rate option shown above includes the prior service cost rate, casualty rate and corresponding normal cost rate. The prior service cost rate is the cost associated with paying off the unfunded actuarial accrued liability (past service). The normal cost rate plus the casualty rate is the cost of members' service being rendered each year (future service). For purposes of this initial valuation, the total employer contribution rate for the 0% member contribution rate plan is decreased by 1.9%, 3.8% and 5.7% for the 2%, 4% and 6% member contribution rate plans, respectively.

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Employer Contribution Rates 5 Year FAS - Rule of 80 Retirement Eligibility#

Benefit Program	Employee Groups	Percents of Active Member Payroll						
		Normal Cost Rate	Casualty Rate	Prior Service Cost Rate *	Total Employer Contribution Rate Based Upon the Following Member Contribution Rates			
					0%	2%	4%	6%
L-1	General	6.30%	0.20%	2.00%	8.50%	6.60%	4.70%	2.80%
L-3	General	7.60	0.30	2.50	10.40	8.50	6.60	4.70
LT-4(65)	General	7.80	0.20	2.80	10.80	8.90	7.00	5.10
LT-5(65)	General	8.80	0.30	3.10	12.20	10.30	8.40	6.50
L-7	General	8.90	0.30	3.00	12.20	10.30	8.40	6.50
LT-8(65)	General	9.70	0.30	3.40	13.40	11.50	9.60	7.70
L-12	General	10.30	0.40	3.50	14.20	12.30	10.40	8.50
LT-14(65)	General	10.70	0.40	3.70	14.80	12.90	11.00	9.10
L-6	General	11.60	0.50	4.00	16.10	14.20	12.30	10.40

The cost for the Rule of 80 provision is very dependent upon the age at hire of the employees. If hiring practices in the future differ from those of the past, the cost for this provision could increase or decrease. The cost shown is based on the age and service characteristics of the present group.

* Assumes that credit is granted for 100% of service rendered prior to the membership date for employees working in a covered position on the membership date and employed continuously in a covered position for one year with this employer. If the governing body wishes to elect one of the lesser percents allowed by law -- 75%, 50%, or 25% -- the prior service cost rate will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.

The total employer contribution rate for each member contribution rate option shown above includes the prior service cost rate, casualty rate and corresponding normal cost rate. The prior service cost rate is the cost associated with paying off the unfunded actuarial accrued liability (past service). The normal cost rate plus the casualty rate is the cost of members' service being rendered each year (future service). For purposes of this initial valuation, the total employer contribution rate for the 0% member contribution rate plan is decreased by 1.9%, 3.8% and 5.7% for the 2%, 4% and 6% member contribution rate plans, respectively.

Grand River Township

Employer Contribution Rates 3 Year FAS - Rule of 80 Retirement Eligibility#

Benefit Program	Employee Groups	Percents of Active Member Payroll						
		Normal Cost Rate	Casualty Rate	Prior Service Cost Rate *	Total Employer Contribution Rate Based Upon the Following Member Contribution Rates			
					0%	2%	4%	6%
L-1	General	6.50%	0.20%	2.10%	8.80%	6.90%	5.00%	3.10%
L-3	General	7.80	0.30	2.60	10.70	8.80	6.90	5.00
LT-4(65)	General	8.10	0.20	2.90	11.20	9.30	7.40	5.50
LT-5(65)	General	9.10	0.30	3.20	12.60	10.70	8.80	6.90
L-7	General	9.20	0.30	3.10	12.60	10.70	8.80	6.90
LT-8(65)	General	10.00	0.30	3.50	13.80	11.90	10.00	8.10
L-12	General	10.60	0.40	3.60	14.60	12.70	10.80	8.90
LT-14(65)	General	11.00	0.40	3.90	15.30	13.40	11.50	9.60
L-6	General	12.00	0.50	4.20	16.70	14.80	12.90	11.00

The cost for the Rule of 80 provision is very dependent upon the age at hire of the employees. If hiring practices in the future differ from those of the past, the cost for this provision could increase or decrease. The cost shown is based on the age and service characteristics of the present group.

* Assumes that credit is granted for 100% of service rendered prior to the membership date for employees working in a covered position on the membership date and employed continuously in a covered position for one year with this employer. If the governing body wishes to elect one of the lesser percents allowed by law -- 75%, 50%, or 25% -- the prior service cost rate will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.

The total employer contribution rate for each member contribution rate option shown above includes the prior service cost rate, casualty rate and corresponding normal cost rate. The prior service cost rate is the cost associated with paying off the unfunded actuarial accrued liability (past service). The normal cost rate plus the casualty rate is the cost of members' service being rendered each year (future service). For purposes of this initial valuation, the total employer contribution rate for the 0% member contribution rate plan is decreased by 1.9%, 3.8% and 5.7% for the 2%, 4% and 6% member contribution rate plans, respectively.

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Employer Contribution Dollars General

Employer contributions are payable monthly, and each month's actual dollar contribution will be the contribution percent multiplied by the payroll during the month. If payroll during your first year of LAGERS participation equals the annual payroll reported for this valuation, the approximate employer dollar contribution for the year would be as follows:

Regular Retirement Eligibility

5 Year FAS				
Benefit Program	Member Contribution Rate			
	0%	2%	4%	6%
L-1	\$ 7,400	\$ 5,500	\$ 3,600	\$ 1,700
L-3	9,100	7,200	5,300	3,400
LT-4(65)	8,200	6,300	4,400	2,500
LT-5(65)	9,700	7,800	5,900	4,000
L-7	10,600	8,700	6,800	4,900
LT-8(65)	11,100	9,200	7,300	5,400
L-12	12,400	10,500	8,600	6,700
LT-14(65)	12,600	10,700	8,800	6,900
L-6	14,100	12,200	10,300	8,400

3 Year FAS				
Benefit Program	Member Contribution Rate			
	0%	2%	4%	6%
L-1	\$ 7,700	\$ 5,800	\$ 3,900	\$ 2,000
L-3	9,400	7,500	5,600	3,700
LT-4(65)	8,500	6,600	4,700	2,800
LT-5(65)	10,000	8,100	6,200	4,300
L-7	11,000	9,100	7,200	5,300
LT-8(65)	11,500	9,600	7,700	5,800
L-12	12,800	10,900	9,000	7,100
LT-14(65)	13,000	11,100	9,200	7,300
L-6	14,500	12,600	10,700	8,800

Rule of 80 Retirement Eligibility

5 Year FAS				
Benefit Program	Member Contribution Rate			
	0%	2%	4%	6%
L-1	\$ 8,500	\$ 6,600	\$ 4,700	\$ 2,800
L-3	10,400	8,500	6,600	4,700
LT-4(65)	10,800	8,900	7,000	5,100
LT-5(65)	12,200	10,300	8,400	6,500
L-7	12,200	10,300	8,400	6,500
LT-8(65)	13,400	11,500	9,600	7,700
L-12	14,200	12,300	10,400	8,500
LT-14(65)	14,800	12,900	11,000	9,100
L-6	16,100	14,200	12,300	10,400

3 Year FAS				
Benefit Program	Member Contribution Rate			
	0%	2%	4%	6%
L-1	\$ 8,800	\$ 6,900	\$ 5,000	\$ 3,100
L-3	10,700	8,800	6,900	5,000
LT-4(65)	11,200	9,300	7,400	5,500
LT-5(65)	12,600	10,700	8,800	6,900
L-7	12,600	10,700	8,800	6,900
LT-8(65)	13,800	11,900	10,000	8,100
L-12	14,600	12,700	10,800	8,900
LT-14(65)	15,300	13,400	11,500	9,600
L-6	16,700	14,800	12,900	11,000

PLEASE NOTE THAT THE ABOVE INFORMATION IS BASED ON THE PERSONNEL AND PAYROLL DATA SUBMITTED FOR THE ACTUARIAL VALUATION. IN BUDGETING AMOUNTS FOR LAGERS CONTRIBUTIONS YOU SHOULD CONSIDER ANY CHANGES WHICH HAVE BEEN MADE SINCE DATA WAS SUBMITTED FOR THE VALUATION AND ANY CHANGES ANTICIPATED TO BE MADE BEFORE THE END OF THE PERIOD FOR WHICH YOU ARE PREPARING THE BUDGET.

Grand River Township

Employees and Payroll Included in the Valuation

	General
Number of Employees	2
Annual Payroll	\$ 100,000

Information regarding the age and service characteristics of the employees is contained in Appendix V.

APPENDIX I

UNFUNDED ACTUARIAL ACCRUED LIABILITY

Unfunded Actuarial Accrued Liability (UAAL)

If the decision is made to join LAGERS the governing body also must decide how much credit to grant employees for their service before the membership date. The options are to cover 25%, 50%, 75% or 100% of prior service. The granting of prior service credit results in the establishment of an actuarial accrued liability. Because your political subdivision will not have established an asset balance with the System as of the membership date, the value established for prior service is an unfunded actuarial accrued liability.

The policy of the LAGERS Board of Trustees provides that unfunded liabilities are to be paid for by level percent of payroll contributions over a period of 30 years. The contribution rates shown on pages 4 through 7 as the "Prior Service Cost Rate" are designed to pay for the applicable unfunded actuarial accrued liability. This procedure will allow your political subdivision to retire the unfunded actuarial accrued liability in an orderly fashion over a period of years without the need for an immediate large payment upon joining the System.

Should the governing body elect to grant credit for 100% of the employees' prior service, the unfunded actuarial accrued liability as of the date of this valuation would be as follows:

Grand River Township

Regular Retirement Eligibility

Benefit Group	Employee Group	Member Contribution Rate - 0%	
		UAAL (5 Year FAS)	UAAL (3 Year FAS)
L-1	General	\$ 32,234	\$ 33,272
L-3	General	40,326	41,589
LT-4(65)	General	37,400	38,632
LT-5(65)	General	44,198	45,588
L-7	General	48,382	49,896
LT-8(65)	General	50,972	52,571
L-12	General	56,420	58,220
LT-14(65)	General	57,728	59,557
L-6	General	64,483	66,558

Grand River Township

Unfunded Actuarial Accrued Liability (UAAL)

Rule of 80 Retirement Eligibility

Benefit Group	Employee Group	Member Contribution Rate - 0%	
		UAAL (5 Year FAS)	UAAL (3 Year FAS)
L-1	General	\$ 35,461	\$ 36,656
L-3	General	44,306	45,834
LT-4(65)	General	49,971	51,704
LT-5(65)	General	55,195	57,108
L-7	General	53,185	54,994
LT-8(65)	General	60,443	62,519
L-12	General	62,053	64,163
LT-14(65)	General	65,675	67,937
L-6	General	70,892	73,338

APPENDIX II

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

		Percent Increase in Individual's Pay During Next Year		
Sample Ages	General			Fire
	General	Police/Public Safety	Fire	
25	6.55%	6.55%	7.15%	
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 III

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-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-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 other-wise 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 IV

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 and 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 and 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 and 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 and 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 and 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(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 and 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(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 and 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(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 and 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 and 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¢.

APPENDIX V

AGE AND SERVICE CHARACTERISTICS OF EMPLOYEES

Grand River Township - General

July 31, 2020

By Attained Age and Years of Service

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
Under 20									
20-24									
25-29									
30-34		1						1	\$ 50,000
35-39									
40-44				1				1	\$ 50,000
45-49									
50-54									
55-59									
60-64									
65-69									
70 & Over									
Totals		1		1				2	\$ 100,000

While not used in the financial computations, the following group averages are computed and shown because of their general interest.

Age: 38.1 years.

Benefit Service: 0.1 years.

Annual Pay: \$50,000.

APPENDIX VI

RISK COMMENTARY

Risk Commentary

The determination of the accrued liability and the actuarially determined contribution (i.e., total employer contribution rate) requires the use of assumptions regarding future economic and demographic experience. Risk measures, as illustrated in this report, are intended to aid in the understanding of the effects of future experience differing from the assumptions used in the course of the actuarial valuation. Risk measures may also help with illustrating the potential volatility in the accrued liability and the actuarially determined contribution that result from the differences between actual experience and the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions due to changing conditions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period, or additional cost or contribution requirements based on the Plan's funded status); and changes in plan provisions or applicable law. The scope of an actuarial valuation does not include an analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the plan's future financial condition include:

1. **Investment Risk** – actual investment returns may differ from the expected returns;
2. **Asset/Liability Mismatch Risk** – changes in asset values may not match changes in liabilities, thereby altering the gap between the accrued liability and assets and consequently altering the funded status and contribution requirements;
3. **Contribution Risk** – actual contributions may differ from expected future contributions. For example, actual contributions may not be made in accordance with the plan's funding policy or material changes may occur in the anticipated number of covered employees, covered payroll, or other relevant contribution base;
4. **Salary and Payroll Risk** – actual salaries and total payroll may differ from expected, resulting in actual future accrued liability, contributions and contribution rates differing from expected;
5. **Longevity Risk** – members may live longer or shorter than expected and receive pensions for a period of time other than assumed; and
6. **Other Demographic Risks** – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future accrued liability and contributions differing from expected.

The effects of certain trends in experience can generally be anticipated. For example if the investment return since the most recent actuarial valuation is less (or more) than the assumed rate, the cost of the plan can be expected to increase (or decrease). Likewise if longevity is improving (or worsening), increases (or decreases) in cost can be anticipated.

The computed contribution rates shown on pages 4 thru 7 may be considered as a minimum contribution rate for the selected benefit provisions that complies with the Board's funding policy. The timely receipt of the actuarially determined contributions is critical to support the financial health of the plan. Users of this report should be aware that contributions made at the actuarially determined rate do not necessarily guarantee benefit security.

Risk Commentary (Concluded)

PLAN MATURITY MEASURES

Risks facing a pension plan evolve over time. A young plan with virtually no investments and paying few benefits may experience little investment risk. An older plan with a large number of members in pay status and a significant trust may be much more exposed to investment risk. Generally accepted plan maturity measures are described below.

RATIO OF MARKET VALUE OF ASSETS TO PAYROLL

The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. For example, if the market value of assets is 2.0 times the payroll, a return on assets 5% different than assumed would equal 10% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in plan sponsor contributions as a percentage of payroll.

RATIO OF ACTUARIAL ACCRUED LIABILITY TO PAYROLL

The relationship between actuarial accrued liability and payroll is a useful indicator of the potential volatility of contributions for a fully funded plan. A funding policy that targets a funded ratio of 100% is expected to result in the ratio of assets to payroll and the ratio of liability to payroll converging over time.

The ratio of liability to payroll may also be used as a measure of sensitivity of the liability itself. For example, if the actuarial accrued liability is 2.5 times the payroll, a change in liability 2% other than assumed would equal 5% of payroll. A higher (lower) or increasing (decreasing) level of this maturity measure generally indicates a higher (lower) or increasing (decreasing) volatility in liability (and also plan sponsor contributions) as a percentage of payroll.

RATIO OF NET CASH FLOW TO MARKET VALUE OF ASSETS

A positive net cash flow means contributions exceed benefits and expenses. A negative cash flow means existing funds are being used to make payments. A certain amount of negative net cash flow is generally expected to occur when benefits are prefunded through a qualified trust. Large negative net cash flows as a percent of assets may indicate a super-mature plan or a need for additional contributions.

DURATION OF ACTUARIAL ACCRUED LIABILITY

The duration of the actuarial accrued liability may be used to approximate the sensitivity to a 1% change in the assumed rate of return. For example, duration of 10 indicates that the liability would increase approximately 10% if the assumed rate of return were lowered 1%.

ADDITIONAL RISK ASSESSMENT

Additional risk assessment is outside the scope of the annual actuarial valuation. Additional assessment may include scenario tests, sensitivity tests, stochastic modeling, stress tests, and a comparison of the present value of accrued benefits at low-risk discount rates with the actuarial accrued liability.



October 21, 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 July 31, 2020 Initial Actuarial Valuation of LAGERS benefits for the employees of

Grand River Township

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:wp



October 21, 2020

Grand River Township
Cameron, Missouri

Ladies and Gentlemen:

This report contains projections needed to comply with Missouri state disclosure requirements (Section 105.660 of the RSMo) regarding the adoption of LAGERS benefits by a political subdivision. This report is intended to be a supplement to the July 31, 2020 Initial Valuation for the Grand River Township dated October 21, 2020.

The actuarial assumptions and methods used to determine the stated costs are described in Appendix II of the Initial Valuation 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. The unfunded actuarial accrued liability shown for each member contribution rate option is based on the 0% member contribution rate plan.

Mita Drazilov is a member of the American Academy of Actuaries and meets the Qualification Standards of the Academy of Actuaries to render the actuarial opinions herein.

Respectfully submitted,

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

Grand River Township - General

Employer Contribution Rates (0% Member Contribution Rate, 5 Year FAS)

Regular Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	7.4%	\$7,400	\$ 32,234	9.1%	\$9,100	\$ 40,326	8.2%	\$8,200	\$ 37,400
2021	103,250	7.4	7,641	32,676	9.1	9,396	40,878	8.2	8,467	37,912
2022	106,606	7.4	7,889	33,088	9.1	9,701	41,393	8.2	8,742	38,390
2023	110,071	7.4	8,145	33,466	9.1	10,016	41,866	8.2	9,026	38,829
2024	113,648	7.4	8,410	33,806	9.1	10,342	42,291	8.2	9,319	39,224
2025	117,342	7.4	8,683	34,103	9.1	10,678	42,662	8.2	9,622	39,568
2026	121,156	7.4	8,966	34,351	9.1	11,025	42,973	8.2	9,935	39,856
2027	125,094	7.4	9,257	34,545	9.1	11,384	43,216	8.2	10,258	40,081
2028	129,160	7.4	9,558	34,679	9.1	11,754	43,383	8.2	10,591	40,236
2029	133,358	7.4	9,868	34,745	9.1	12,136	43,466	8.2	10,935	40,313

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	9.7%	\$9,700	\$ 44,198	10.6%	\$10,600	\$ 48,382	11.1%	\$11,100	\$ 50,972
2021	103,250	9.7	10,015	44,804	10.6	10,945	49,045	11.1	11,461	51,670
2022	106,606	9.7	10,341	45,369	10.6	11,300	49,663	11.1	11,833	52,322
2023	110,071	9.7	10,677	45,888	10.6	11,668	50,231	11.1	12,218	52,920
2024	113,648	9.7	11,024	46,354	10.6	12,047	50,741	11.1	12,615	53,458
2025	117,342	9.7	11,382	46,761	10.6	12,438	51,187	11.1	13,025	53,927
2026	121,156	9.7	11,752	47,102	10.6	12,843	51,560	11.1	13,448	54,320
2027	125,094	9.7	12,134	47,368	10.6	13,260	51,851	11.1	13,885	54,627
2028	129,160	9.7	12,529	47,551	10.6	13,691	52,052	11.1	14,337	54,838
2029	133,358	9.7	12,936	47,642	10.6	14,136	52,151	11.1	14,803	54,943

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	12.4%	\$12,400	\$ 56,420	12.6%	\$12,600	\$ 57,728	14.1%	\$14,100	\$ 64,483
2021	103,250	12.4	12,803	57,193	12.6	13,010	58,519	14.1	14,558	65,366
2022	106,606	12.4	13,219	57,914	12.6	13,432	59,257	14.1	15,031	66,190
2023	110,071	12.4	13,649	58,576	12.6	13,869	59,934	14.1	15,520	66,947
2024	113,648	12.4	14,092	59,171	12.6	14,320	60,543	14.1	16,024	67,627
2025	117,342	12.4	14,550	59,691	12.6	14,785	61,075	14.1	16,545	68,221
2026	121,156	12.4	15,023	60,126	12.6	15,266	61,520	14.1	17,083	68,718
2027	125,094	12.4	15,512	60,466	12.6	15,762	61,868	14.1	17,638	69,106
2028	129,160	12.4	16,016	60,700	12.6	16,274	62,107	14.1	18,212	69,373
2029	133,358	12.4	16,536	60,816	12.6	16,803	62,226	14.1	18,803	69,505

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (2% Member Contribution Rate, 5 Year FAS)

(Member contributions are additional)

Regular Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	5.5%	\$5,500	\$ 32,234	7.2%	\$7,200	\$ 40,326	6.3%	\$6,300	\$ 37,400
2021	103,250	5.5	5,679	32,676	7.2	7,434	40,878	6.3	6,505	37,912
2022	106,606	5.5	5,863	33,088	7.2	7,676	41,393	6.3	6,716	38,390
2023	110,071	5.5	6,054	33,466	7.2	7,925	41,866	6.3	6,934	38,829
2024	113,648	5.5	6,251	33,806	7.2	8,183	42,291	6.3	7,160	39,224
2025	117,342	5.5	6,454	34,103	7.2	8,449	42,662	6.3	7,393	39,568
2026	121,156	5.5	6,664	34,351	7.2	8,723	42,973	6.3	7,633	39,856
2027	125,094	5.5	6,880	34,545	7.2	9,007	43,216	6.3	7,881	40,081
2028	129,160	5.5	7,104	34,679	7.2	9,300	43,383	6.3	8,137	40,236
2029	133,358	5.5	7,335	34,745	7.2	9,602	43,466	6.3	8,402	40,313

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	7.8%	\$7,800	\$ 44,198	8.7%	\$8,700	\$ 48,382	9.2%	\$9,200	\$ 50,972
2021	103,250	7.8	8,054	44,804	8.7	8,983	49,045	9.2	9,499	51,670
2022	106,606	7.8	8,315	45,369	8.7	9,275	49,663	9.2	9,808	52,322
2023	110,071	7.8	8,586	45,888	8.7	9,576	50,231	9.2	10,127	52,920
2024	113,648	7.8	8,865	46,354	8.7	9,887	50,741	9.2	10,456	53,458
2025	117,342	7.8	9,153	46,761	8.7	10,209	51,187	9.2	10,795	53,927
2026	121,156	7.8	9,450	47,102	8.7	10,541	51,560	9.2	11,146	54,320
2027	125,094	7.8	9,757	47,368	8.7	10,883	51,851	9.2	11,509	54,627
2028	129,160	7.8	10,074	47,551	8.7	11,237	52,052	9.2	11,883	54,838
2029	133,358	7.8	10,402	47,642	8.7	11,602	52,151	9.2	12,269	54,943

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	10.5%	\$10,500	\$ 56,420	10.7%	\$10,700	\$ 57,728	12.2%	\$12,200	\$ 64,483
2021	103,250	10.5	10,841	57,193	10.7	11,048	58,519	12.2	12,597	65,366
2022	106,606	10.5	11,194	57,914	10.7	11,407	59,257	12.2	13,006	66,190
2023	110,071	10.5	11,557	58,576	10.7	11,778	59,934	12.2	13,429	66,947
2024	113,648	10.5	11,933	59,171	10.7	12,160	60,543	12.2	13,865	67,627
2025	117,342	10.5	12,321	59,691	10.7	12,556	61,075	12.2	14,316	68,221
2026	121,156	10.5	12,721	60,126	10.7	12,964	61,520	12.2	14,781	68,718
2027	125,094	10.5	13,135	60,466	10.7	13,385	61,868	12.2	15,261	69,106
2028	129,160	10.5	13,562	60,700	10.7	13,820	62,107	12.2	15,758	69,373
2029	133,358	10.5	14,003	60,816	10.7	14,269	62,226	12.2	16,270	69,505

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (4% Member Contribution Rate, 5 Year FAS)

(Member contributions are additional)

Regular Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	3.6%	\$3,600	\$ 32,234	5.3%	\$5,300	\$ 40,326	4.4%	\$4,400	\$ 37,400
2021	103,250	3.6	3,717	32,676	5.3	5,472	40,878	4.4	4,543	37,912
2022	106,606	3.6	3,838	33,088	5.3	5,650	41,393	4.4	4,691	38,390
2023	110,071	3.6	3,963	33,466	5.3	5,834	41,866	4.4	4,843	38,829
2024	113,648	3.6	4,091	33,806	5.3	6,023	42,291	4.4	5,001	39,224
2025	117,342	3.6	4,224	34,103	5.3	6,219	42,662	4.4	5,163	39,568
2026	121,156	3.6	4,362	34,351	5.3	6,421	42,973	4.4	5,331	39,856
2027	125,094	3.6	4,503	34,545	5.3	6,630	43,216	4.4	5,504	40,081
2028	129,160	3.6	4,650	34,679	5.3	6,845	43,383	4.4	5,683	40,236
2029	133,358	3.6	4,801	34,745	5.3	7,068	43,466	4.4	5,868	40,313

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	5.9%	\$5,900	\$ 44,198	6.8%	\$6,800	\$ 48,382	7.3%	\$7,300	\$ 50,972
2021	103,250	5.9	6,092	44,804	6.8	7,021	49,045	7.3	7,537	51,670
2022	106,606	5.9	6,290	45,369	6.8	7,249	49,663	7.3	7,782	52,322
2023	110,071	5.9	6,494	45,888	6.8	7,485	50,231	7.3	8,035	52,920
2024	113,648	5.9	6,705	46,354	6.8	7,728	50,741	7.3	8,296	53,458
2025	117,342	5.9	6,923	46,761	6.8	7,979	51,187	7.3	8,566	53,927
2026	121,156	5.9	7,148	47,102	6.8	8,239	51,560	7.3	8,844	54,320
2027	125,094	5.9	7,381	47,368	6.8	8,506	51,851	7.3	9,132	54,627
2028	129,160	5.9	7,620	47,551	6.8	8,783	52,052	7.3	9,429	54,838
2029	133,358	5.9	7,868	47,642	6.8	9,068	52,151	7.3	9,735	54,943

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	8.6%	\$8,600	\$ 56,420	8.8%	\$8,800	\$ 57,728	10.3%	\$10,300	\$ 64,483
2021	103,250	8.6	8,880	57,193	8.8	9,086	58,519	10.3	10,635	65,366
2022	106,606	8.6	9,168	57,914	8.8	9,381	59,257	10.3	10,980	66,190
2023	110,071	8.6	9,466	58,576	8.8	9,686	59,934	10.3	11,337	66,947
2024	113,648	8.6	9,774	59,171	8.8	10,001	60,543	10.3	11,706	67,627
2025	117,342	8.6	10,091	59,691	8.8	10,326	61,075	10.3	12,086	68,221
2026	121,156	8.6	10,419	60,126	8.8	10,662	61,520	10.3	12,479	68,718
2027	125,094	8.6	10,758	60,466	8.8	11,008	61,868	10.3	12,885	69,106
2028	129,160	8.6	11,108	60,700	8.8	11,366	62,107	10.3	13,303	69,373
2029	133,358	8.6	11,469	60,816	8.8	11,736	62,226	10.3	13,736	69,505

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (6% Member Contribution Rate, 5 Year FAS)

(Member contributions are additional)

Regular Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	1.7%	\$1,700	\$ 32,234	3.4%	\$3,400	\$ 40,326	2.5%	\$2,500	\$ 37,400
2021	103,250	1.7	1,755	32,676	3.4	3,511	40,878	2.5	2,581	37,912
2022	106,606	1.7	1,812	33,088	3.4	3,625	41,393	2.5	2,665	38,390
2023	110,071	1.7	1,871	33,466	3.4	3,742	41,866	2.5	2,752	38,829
2024	113,648	1.7	1,932	33,806	3.4	3,864	42,291	2.5	2,841	39,224
2025	117,342	1.7	1,995	34,103	3.4	3,990	42,662	2.5	2,934	39,568
2026	121,156	1.7	2,060	34,351	3.4	4,119	42,973	2.5	3,029	39,856
2027	125,094	1.7	2,127	34,545	3.4	4,253	43,216	2.5	3,127	40,081
2028	129,160	1.7	2,196	34,679	3.4	4,391	43,383	2.5	3,229	40,236
2029	133,358	1.7	2,267	34,745	3.4	4,534	43,466	2.5	3,334	40,313

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	4.0%	\$4,000	\$ 44,198	4.9%	\$4,900	\$ 48,382	5.4%	\$5,400	\$ 50,972
2021	103,250	4.0	4,130	44,804	4.9	5,059	49,045	5.4	5,576	51,670
2022	106,606	4.0	4,264	45,369	4.9	5,224	49,663	5.4	5,757	52,322
2023	110,071	4.0	4,403	45,888	4.9	5,393	50,231	5.4	5,944	52,920
2024	113,648	4.0	4,546	46,354	4.9	5,569	50,741	5.4	6,137	53,458
2025	117,342	4.0	4,694	46,761	4.9	5,750	51,187	5.4	6,336	53,927
2026	121,156	4.0	4,846	47,102	4.9	5,937	51,560	5.4	6,542	54,320
2027	125,094	4.0	5,004	47,368	4.9	6,130	51,851	5.4	6,755	54,627
2028	129,160	4.0	5,166	47,551	4.9	6,329	52,052	5.4	6,975	54,838
2029	133,358	4.0	5,334	47,642	4.9	6,535	52,151	5.4	7,201	54,943

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	6.7%	\$6,700	\$ 56,420	6.9%	\$6,900	\$ 57,728	8.4%	\$8,400	\$ 64,483
2021	103,250	6.7	6,918	57,193	6.9	7,124	58,519	8.4	8,673	65,366
2022	106,606	6.7	7,143	57,914	6.9	7,356	59,257	8.4	8,955	66,190
2023	110,071	6.7	7,375	58,576	6.9	7,595	59,934	8.4	9,246	66,947
2024	113,648	6.7	7,614	59,171	6.9	7,842	60,543	8.4	9,546	67,627
2025	117,342	6.7	7,862	59,691	6.9	8,097	61,075	8.4	9,857	68,221
2026	121,156	6.7	8,117	60,126	6.9	8,360	61,520	8.4	10,177	68,718
2027	125,094	6.7	8,381	60,466	6.9	8,631	61,868	8.4	10,508	69,106
2028	129,160	6.7	8,654	60,700	6.9	8,912	62,107	8.4	10,849	69,373
2029	133,358	6.7	8,935	60,816	6.9	9,202	62,226	8.4	11,202	69,505

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (0% Member Contribution Rate, 3 Year FAS)

Regular Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	7.7%	\$7,700	\$ 33,272	9.4%	\$9,400	\$ 41,589	8.5%	\$8,500	\$ 38,632
2021	103,250	7.7	7,950	33,728	9.4	9,706	42,159	8.5	8,776	39,161
2022	106,606	7.7	8,209	34,153	9.4	10,021	42,691	8.5	9,062	39,655
2023	110,071	7.7	8,475	34,543	9.4	10,347	43,179	8.5	9,356	40,108
2024	113,648	7.7	8,751	34,894	9.4	10,683	43,618	8.5	9,660	40,516
2025	117,342	7.7	9,035	35,200	9.4	11,030	44,001	8.5	9,974	40,872
2026	121,156	7.7	9,329	35,456	9.4	11,389	44,322	8.5	10,298	41,170
2027	125,094	7.7	9,632	35,656	9.4	11,759	44,572	8.5	10,633	41,403
2028	129,160	7.7	9,945	35,794	9.4	12,141	44,744	8.5	10,979	41,563
2029	133,358	7.7	10,269	35,862	9.4	12,536	44,829	8.5	11,335	41,642

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	10.0%	\$10,000	\$ 45,588	11.0%	\$11,000	\$ 49,896	11.5%	\$11,500	\$ 52,571
2021	103,250	10.0	10,325	46,213	11.0	11,358	50,580	11.5	11,874	53,291
2022	106,606	10.0	10,661	46,796	11.0	11,727	51,218	11.5	12,260	53,963
2023	110,071	10.0	11,007	47,331	11.0	12,108	51,804	11.5	12,658	54,580
2024	113,648	10.0	11,365	47,812	11.0	12,501	52,330	11.5	13,070	55,135
2025	117,342	10.0	11,734	48,232	11.0	12,908	52,790	11.5	13,494	55,619
2026	121,156	10.0	12,116	48,583	11.0	13,327	53,175	11.5	13,933	56,024
2027	125,094	10.0	12,509	48,858	11.0	13,760	53,476	11.5	14,386	56,341
2028	129,160	10.0	12,916	49,047	11.0	14,208	53,683	11.5	14,853	56,559
2029	133,358	10.0	13,336	49,141	11.0	14,669	53,786	11.5	15,336	56,667

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	12.8%	\$12,800	\$ 58,220	13.0%	\$13,000	\$ 59,557	14.5%	\$14,500	\$ 66,558
2021	103,250	12.8	13,216	59,018	13.0	13,423	60,373	14.5	14,971	67,470
2022	106,606	12.8	13,646	59,762	13.0	13,859	61,134	14.5	15,458	68,321
2023	110,071	12.8	14,089	60,445	13.0	14,309	61,833	14.5	15,960	69,102
2024	113,648	12.8	14,547	61,059	13.0	14,774	62,461	14.5	16,479	69,804
2025	117,342	12.8	15,020	61,595	13.0	15,254	63,010	14.5	17,015	70,417
2026	121,156	12.8	15,508	62,044	13.0	15,750	63,469	14.5	17,568	70,930
2027	125,094	12.8	16,012	62,395	13.0	16,262	63,828	14.5	18,139	71,331
2028	129,160	12.8	16,532	62,636	13.0	16,791	64,075	14.5	18,728	71,607
2029	133,358	12.8	17,070	62,756	13.0	17,337	64,197	14.5	19,337	71,744

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (2% Member Contribution Rate, 3 Year FAS)

(Member contributions are additional)

Regular Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	5.8%	\$5,800	\$ 33,272	7.5%	\$7,500	\$ 41,589	6.6%	\$6,600	\$ 38,632
2021	103,250	5.8	5,989	33,728	7.5	7,744	42,159	6.6	6,815	39,161
2022	106,606	5.8	6,183	34,153	7.5	7,995	42,691	6.6	7,036	39,655
2023	110,071	5.8	6,384	34,543	7.5	8,255	43,179	6.6	7,265	40,108
2024	113,648	5.8	6,592	34,894	7.5	8,524	43,618	6.6	7,501	40,516
2025	117,342	5.8	6,806	35,200	7.5	8,801	44,001	6.6	7,745	40,872
2026	121,156	5.8	7,027	35,456	7.5	9,087	44,322	6.6	7,996	41,170
2027	125,094	5.8	7,255	35,656	7.5	9,382	44,572	6.6	8,256	41,403
2028	129,160	5.8	7,491	35,794	7.5	9,687	44,744	6.6	8,525	41,563
2029	133,358	5.8	7,735	35,862	7.5	10,002	44,829	6.6	8,802	41,642

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	8.1%	\$8,100	\$ 45,588	9.1%	\$9,100	\$ 49,896	9.6%	\$9,600	\$ 52,571
2021	103,250	8.1	8,363	46,213	9.1	9,396	50,580	9.6	9,912	53,291
2022	106,606	8.1	8,635	46,796	9.1	9,701	51,218	9.6	10,234	53,963
2023	110,071	8.1	8,916	47,331	9.1	10,016	51,804	9.6	10,567	54,580
2024	113,648	8.1	9,205	47,812	9.1	10,342	52,330	9.6	10,910	55,135
2025	117,342	8.1	9,505	48,232	9.1	10,678	52,790	9.6	11,265	55,619
2026	121,156	8.1	9,814	48,583	9.1	11,025	53,175	9.6	11,631	56,024
2027	125,094	8.1	10,133	48,858	9.1	11,384	53,476	9.6	12,009	56,341
2028	129,160	8.1	10,462	49,047	9.1	11,754	53,683	9.6	12,399	56,559
2029	133,358	8.1	10,802	49,141	9.1	12,136	53,786	9.6	12,802	56,667

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	10.9%	\$10,900	\$ 58,220	11.1%	\$11,100	\$ 59,557	12.6%	\$12,600	\$ 66,558
2021	103,250	10.9	11,254	59,018	11.1	11,461	60,373	12.6	13,010	67,470
2022	106,606	10.9	11,620	59,762	11.1	11,833	61,134	12.6	13,432	68,321
2023	110,071	10.9	11,998	60,445	11.1	12,218	61,833	12.6	13,869	69,102
2024	113,648	10.9	12,388	61,059	11.1	12,615	62,461	12.6	14,320	69,804
2025	117,342	10.9	12,790	61,595	11.1	13,025	63,010	12.6	14,785	70,417
2026	121,156	10.9	13,206	62,044	11.1	13,448	63,469	12.6	15,266	70,930
2027	125,094	10.9	13,635	62,395	11.1	13,885	63,828	12.6	15,762	71,331
2028	129,160	10.9	14,078	62,636	11.1	14,337	64,075	12.6	16,274	71,607
2029	133,358	10.9	14,536	62,756	11.1	14,803	64,197	12.6	16,803	71,744

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (4% Member Contribution Rate, 3 Year FAS)

(Member contributions are additional)

Regular Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	3.9%	\$3,900	\$ 33,272	5.6%	\$5,600	\$ 41,589	4.7%	\$4,700	\$ 38,632
2021	103,250	3.9	4,027	33,728	5.6	5,782	42,159	4.7	4,853	39,161
2022	106,606	3.9	4,158	34,153	5.6	5,970	42,691	4.7	5,010	39,655
2023	110,071	3.9	4,293	34,543	5.6	6,164	43,179	4.7	5,173	40,108
2024	113,648	3.9	4,432	34,894	5.6	6,364	43,618	4.7	5,341	40,516
2025	117,342	3.9	4,576	35,200	5.6	6,571	44,001	4.7	5,515	40,872
2026	121,156	3.9	4,725	35,456	5.6	6,785	44,322	4.7	5,694	41,170
2027	125,094	3.9	4,879	35,656	5.6	7,005	44,572	4.7	5,879	41,403
2028	129,160	3.9	5,037	35,794	5.6	7,233	44,744	4.7	6,071	41,563
2029	133,358	3.9	5,201	35,862	5.6	7,468	44,829	4.7	6,268	41,642

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	6.2%	\$6,200	\$ 45,588	7.2%	\$7,200	\$ 49,896	7.7%	\$7,700	\$ 52,571
2021	103,250	6.2	6,402	46,213	7.2	7,434	50,580	7.7	7,950	53,291
2022	106,606	6.2	6,610	46,796	7.2	7,676	51,218	7.7	8,209	53,963
2023	110,071	6.2	6,824	47,331	7.2	7,925	51,804	7.7	8,475	54,580
2024	113,648	6.2	7,046	47,812	7.2	8,183	52,330	7.7	8,751	55,135
2025	117,342	6.2	7,275	48,232	7.2	8,449	52,790	7.7	9,035	55,619
2026	121,156	6.2	7,512	48,583	7.2	8,723	53,175	7.7	9,329	56,024
2027	125,094	6.2	7,756	48,858	7.2	9,007	53,476	7.7	9,632	56,341
2028	129,160	6.2	8,008	49,047	7.2	9,300	53,683	7.7	9,945	56,559
2029	133,358	6.2	8,268	49,141	7.2	9,602	53,786	7.7	10,269	56,667

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	9.0%	\$9,000	\$ 58,220	9.2%	\$9,200	\$ 59,557	10.7%	\$10,700	\$ 66,558
2021	103,250	9.0	9,293	59,018	9.2	9,499	60,373	10.7	11,048	67,470
2022	106,606	9.0	9,595	59,762	9.2	9,808	61,134	10.7	11,407	68,321
2023	110,071	9.0	9,906	60,445	9.2	10,127	61,833	10.7	11,778	69,102
2024	113,648	9.0	10,228	61,059	9.2	10,456	62,461	10.7	12,160	69,804
2025	117,342	9.0	10,561	61,595	9.2	10,795	63,010	10.7	12,556	70,417
2026	121,156	9.0	10,904	62,044	9.2	11,146	63,469	10.7	12,964	70,930
2027	125,094	9.0	11,258	62,395	9.2	11,509	63,828	10.7	13,385	71,331
2028	129,160	9.0	11,624	62,636	9.2	11,883	64,075	10.7	13,820	71,607
2029	133,358	9.0	12,002	62,756	9.2	12,269	64,197	10.7	14,269	71,744

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (6% Member Contribution Rate, 3 Year FAS)

(Member contributions are additional)

Regular Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	2.0%	\$2,000	\$ 33,272	3.7%	\$3,700	\$ 41,589	2.8%	\$2,800	\$ 38,632
2021	103,250	2.0	2,065	33,728	3.7	3,820	42,159	2.8	2,891	39,161
2022	106,606	2.0	2,132	34,153	3.7	3,944	42,691	2.8	2,985	39,655
2023	110,071	2.0	2,201	34,543	3.7	4,073	43,179	2.8	3,082	40,108
2024	113,648	2.0	2,273	34,894	3.7	4,205	43,618	2.8	3,182	40,516
2025	117,342	2.0	2,347	35,200	3.7	4,342	44,001	2.8	3,286	40,872
2026	121,156	2.0	2,423	35,456	3.7	4,483	44,322	2.8	3,392	41,170
2027	125,094	2.0	2,502	35,656	3.7	4,628	44,572	2.8	3,503	41,403
2028	129,160	2.0	2,583	35,794	3.7	4,779	44,744	2.8	3,616	41,563
2029	133,358	2.0	2,667	35,862	3.7	4,934	44,829	2.8	3,734	41,642

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	4.3%	\$4,300	\$ 45,588	5.3%	\$5,300	\$ 49,896	5.8%	\$5,800	\$ 52,571
2021	103,250	4.3	4,440	46,213	5.3	5,472	50,580	5.8	5,989	53,291
2022	106,606	4.3	4,584	46,796	5.3	5,650	51,218	5.8	6,183	53,963
2023	110,071	4.3	4,733	47,331	5.3	5,834	51,804	5.8	6,384	54,580
2024	113,648	4.3	4,887	47,812	5.3	6,023	52,330	5.8	6,592	55,135
2025	117,342	4.3	5,046	48,232	5.3	6,219	52,790	5.8	6,806	55,619
2026	121,156	4.3	5,210	48,583	5.3	6,421	53,175	5.8	7,027	56,024
2027	125,094	4.3	5,379	48,858	5.3	6,630	53,476	5.8	7,255	56,341
2028	129,160	4.3	5,554	49,047	5.3	6,845	53,683	5.8	7,491	56,559
2029	133,358	4.3	5,734	49,141	5.3	7,068	53,786	5.8	7,735	56,667

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	7.1%	\$7,100	\$ 58,220	7.3%	\$7,300	\$ 59,557	8.8%	\$8,800	\$ 66,558
2021	103,250	7.1	7,331	59,018	7.3	7,537	60,373	8.8	9,086	67,470
2022	106,606	7.1	7,569	59,762	7.3	7,782	61,134	8.8	9,381	68,321
2023	110,071	7.1	7,815	60,445	7.3	8,035	61,833	8.8	9,686	69,102
2024	113,648	7.1	8,069	61,059	7.3	8,296	62,461	8.8	10,001	69,804
2025	117,342	7.1	8,331	61,595	7.3	8,566	63,010	8.8	10,326	70,417
2026	121,156	7.1	8,602	62,044	7.3	8,844	63,469	8.8	10,662	70,930
2027	125,094	7.1	8,882	62,395	7.3	9,132	63,828	8.8	11,008	71,331
2028	129,160	7.1	9,170	62,636	7.3	9,429	64,075	8.8	11,366	71,607
2029	133,358	7.1	9,468	62,756	7.3	9,735	64,197	8.8	11,736	71,744

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (0% Member Contribution Rate, 5 Year FAS)

Rule of 80 Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	8.5%	\$8,500	\$ 35,461	10.4%	\$10,400	\$ 44,306	10.8%	\$10,800	\$ 49,971
2021	103,250	8.5	8,776	35,947	10.4	10,738	44,913	10.8	11,151	50,656
2022	106,606	8.5	9,062	36,400	10.4	11,087	45,479	10.8	11,513	51,295
2023	110,071	8.5	9,356	36,816	10.4	11,447	45,999	10.8	11,888	51,881
2024	113,648	8.5	9,660	37,190	10.4	11,819	46,466	10.8	12,274	52,408
2025	117,342	8.5	9,974	37,517	10.4	12,204	46,874	10.8	12,673	52,868
2026	121,156	8.5	10,298	37,790	10.4	12,600	47,215	10.8	13,085	53,253
2027	125,094	8.5	10,633	38,004	10.4	13,010	47,482	10.8	13,510	53,554
2028	129,160	8.5	10,979	38,151	10.4	13,433	47,666	10.8	13,949	53,761
2029	133,358	8.5	11,335	38,224	10.4	13,869	47,757	10.8	14,403	53,864

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	12.2%	\$12,200	\$ 55,195	12.2%	\$12,200	\$ 53,185	13.4%	\$13,400	\$ 60,443
2021	103,250	12.2	12,597	55,951	12.2	12,597	53,914	13.4	13,836	61,271
2022	106,606	12.2	13,006	56,657	12.2	13,006	54,594	13.4	14,285	62,044
2023	110,071	12.2	13,429	57,305	12.2	13,429	55,218	13.4	14,750	62,753
2024	113,648	12.2	13,865	57,887	12.2	13,865	55,779	13.4	15,229	63,391
2025	117,342	12.2	14,316	58,395	12.2	14,316	56,269	13.4	15,724	63,948
2026	121,156	12.2	14,781	58,820	12.2	14,781	56,679	13.4	16,235	64,414
2027	125,094	12.2	15,261	59,152	12.2	15,261	56,999	13.4	16,763	64,778
2028	129,160	12.2	15,758	59,381	12.2	15,758	57,219	13.4	17,307	65,028
2029	133,358	12.2	16,270	59,494	12.2	16,270	57,328	13.4	17,870	65,152

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	14.2%	\$14,200	\$ 62,053	14.8%	\$14,800	\$ 65,675	16.1%	\$16,100	\$ 70,892
2021	103,250	14.2	14,662	62,903	14.8	15,281	66,575	16.1	16,623	71,863
2022	106,606	14.2	15,138	63,696	14.8	15,778	67,414	16.1	17,164	72,769
2023	110,071	14.2	15,630	64,424	14.8	16,291	68,185	16.1	17,721	73,601
2024	113,648	14.2	16,138	65,079	14.8	16,820	68,878	16.1	18,297	74,349
2025	117,342	14.2	16,663	65,651	14.8	17,367	69,483	16.1	18,892	75,002
2026	121,156	14.2	17,204	66,129	14.8	17,931	69,989	16.1	19,506	75,548
2027	125,094	14.2	17,763	66,503	14.8	18,514	70,385	16.1	20,140	75,975
2028	129,160	14.2	18,341	66,760	14.8	19,116	70,657	16.1	20,795	76,269
2029	133,358	14.2	18,937	66,887	14.8	19,737	70,792	16.1	21,471	76,415

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (2% Member Contribution Rate, 5 Year FAS)

(Member contributions are additional)

Rule of 80 Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	6.6%	\$6,600	\$ 35,461	8.5%	\$8,500	\$ 44,306	8.9%	\$8,900	\$ 49,971
2021	103,250	6.6	6,815	35,947	8.5	8,776	44,913	8.9	9,189	50,656
2022	106,606	6.6	7,036	36,400	8.5	9,062	45,479	8.9	9,488	51,295
2023	110,071	6.6	7,265	36,816	8.5	9,356	45,999	8.9	9,796	51,881
2024	113,648	6.6	7,501	37,190	8.5	9,660	46,466	8.9	10,115	52,408
2025	117,342	6.6	7,745	37,517	8.5	9,974	46,874	8.9	10,443	52,868
2026	121,156	6.6	7,996	37,790	8.5	10,298	47,215	8.9	10,783	53,253
2027	125,094	6.6	8,256	38,004	8.5	10,633	47,482	8.9	11,133	53,554
2028	129,160	6.6	8,525	38,151	8.5	10,979	47,666	8.9	11,495	53,761
2029	133,358	6.6	8,802	38,224	8.5	11,335	47,757	8.9	11,869	53,864

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	10.3%	\$10,300	\$ 55,195	10.3%	\$10,300	\$ 53,185	11.5%	\$11,500	\$ 60,443
2021	103,250	10.3	10,635	55,951	10.3	10,635	53,914	11.5	11,874	61,271
2022	106,606	10.3	10,980	56,657	10.3	10,980	54,594	11.5	12,260	62,044
2023	110,071	10.3	11,337	57,305	10.3	11,337	55,218	11.5	12,658	62,753
2024	113,648	10.3	11,706	57,887	10.3	11,706	55,779	11.5	13,070	63,391
2025	117,342	10.3	12,086	58,395	10.3	12,086	56,269	11.5	13,494	63,948
2026	121,156	10.3	12,479	58,820	10.3	12,479	56,679	11.5	13,933	64,414
2027	125,094	10.3	12,885	59,152	10.3	12,885	56,999	11.5	14,386	64,778
2028	129,160	10.3	13,303	59,381	10.3	13,303	57,219	11.5	14,853	65,028
2029	133,358	10.3	13,736	59,494	10.3	13,736	57,328	11.5	15,336	65,152

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	12.3%	\$12,300	\$ 62,053	12.9%	\$12,900	\$ 65,675	14.2%	\$14,200	\$ 70,892
2021	103,250	12.3	12,700	62,903	12.9	13,319	66,575	14.2	14,662	71,863
2022	106,606	12.3	13,113	63,696	12.9	13,752	67,414	14.2	15,138	72,769
2023	110,071	12.3	13,539	64,424	12.9	14,199	68,185	14.2	15,630	73,601
2024	113,648	12.3	13,979	65,079	12.9	14,661	68,878	14.2	16,138	74,349
2025	117,342	12.3	14,433	65,651	12.9	15,137	69,483	14.2	16,663	75,002
2026	121,156	12.3	14,902	66,129	12.9	15,629	69,989	14.2	17,204	75,548
2027	125,094	12.3	15,387	66,503	12.9	16,137	70,385	14.2	17,763	75,975
2028	129,160	12.3	15,887	66,760	12.9	16,662	70,657	14.2	18,341	76,269
2029	133,358	12.3	16,403	66,887	12.9	17,203	70,792	14.2	18,937	76,415

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (4% Member Contribution Rate, 5 Year FAS)

(Member contributions are additional)

Rule of 80 Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	4.7%	\$4,700	\$ 35,461	6.6%	\$6,600	\$ 44,306	7.0%	\$7,000	\$ 49,971
2021	103,250	4.7	4,853	35,947	6.6	6,815	44,913	7.0	7,228	50,656
2022	106,606	4.7	5,010	36,400	6.6	7,036	45,479	7.0	7,462	51,295
2023	110,071	4.7	5,173	36,816	6.6	7,265	45,999	7.0	7,705	51,881
2024	113,648	4.7	5,341	37,190	6.6	7,501	46,466	7.0	7,955	52,408
2025	117,342	4.7	5,515	37,517	6.6	7,745	46,874	7.0	8,214	52,868
2026	121,156	4.7	5,694	37,790	6.6	7,996	47,215	7.0	8,481	53,253
2027	125,094	4.7	5,879	38,004	6.6	8,256	47,482	7.0	8,757	53,554
2028	129,160	4.7	6,071	38,151	6.6	8,525	47,666	7.0	9,041	53,761
2029	133,358	4.7	6,268	38,224	6.6	8,802	47,757	7.0	9,335	53,864

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	8.4%	\$8,400	\$ 55,195	8.4%	\$8,400	\$ 53,185	9.6%	\$9,600	\$ 60,443
2021	103,250	8.4	8,673	55,951	8.4	8,673	53,914	9.6	9,912	61,271
2022	106,606	8.4	8,955	56,657	8.4	8,955	54,594	9.6	10,234	62,044
2023	110,071	8.4	9,246	57,305	8.4	9,246	55,218	9.6	10,567	62,753
2024	113,648	8.4	9,546	57,887	8.4	9,546	55,779	9.6	10,910	63,391
2025	117,342	8.4	9,857	58,395	8.4	9,857	56,269	9.6	11,265	63,948
2026	121,156	8.4	10,177	58,820	8.4	10,177	56,679	9.6	11,631	64,414
2027	125,094	8.4	10,508	59,152	8.4	10,508	56,999	9.6	12,009	64,778
2028	129,160	8.4	10,849	59,381	8.4	10,849	57,219	9.6	12,399	65,028
2029	133,358	8.4	11,202	59,494	8.4	11,202	57,328	9.6	12,802	65,152

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	10.4%	\$10,400	\$ 62,053	11.0%	\$11,000	\$ 65,675	12.3%	\$12,300	\$ 70,892
2021	103,250	10.4	10,738	62,903	11.0	11,358	66,575	12.3	12,700	71,863
2022	106,606	10.4	11,087	63,696	11.0	11,727	67,414	12.3	13,113	72,769
2023	110,071	10.4	11,447	64,424	11.0	12,108	68,185	12.3	13,539	73,601
2024	113,648	10.4	11,819	65,079	11.0	12,501	68,878	12.3	13,979	74,349
2025	117,342	10.4	12,204	65,651	11.0	12,908	69,483	12.3	14,433	75,002
2026	121,156	10.4	12,600	66,129	11.0	13,327	69,989	12.3	14,902	75,548
2027	125,094	10.4	13,010	66,503	11.0	13,760	70,385	12.3	15,387	75,975
2028	129,160	10.4	13,433	66,760	11.0	14,208	70,657	12.3	15,887	76,269
2029	133,358	10.4	13,869	66,887	11.0	14,669	70,792	12.3	16,403	76,415

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (6% Member Contribution Rate, 5 Year FAS)

(Member contributions are additional)

Rule of 80 Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	2.8%	\$2,800	\$ 35,461	4.7%	\$4,700	\$ 44,306	5.1%	\$5,100	\$ 49,971
2021	103,250	2.8	2,891	35,947	4.7	4,853	44,913	5.1	5,266	50,656
2022	106,606	2.8	2,985	36,400	4.7	5,010	45,479	5.1	5,437	51,295
2023	110,071	2.8	3,082	36,816	4.7	5,173	45,999	5.1	5,614	51,881
2024	113,648	2.8	3,182	37,190	4.7	5,341	46,466	5.1	5,796	52,408
2025	117,342	2.8	3,286	37,517	4.7	5,515	46,874	5.1	5,984	52,868
2026	121,156	2.8	3,392	37,790	4.7	5,694	47,215	5.1	6,179	53,253
2027	125,094	2.8	3,503	38,004	4.7	5,879	47,482	5.1	6,380	53,554
2028	129,160	2.8	3,616	38,151	4.7	6,071	47,666	5.1	6,587	53,761
2029	133,358	2.8	3,734	38,224	4.7	6,268	47,757	5.1	6,801	53,864

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	6.5%	\$6,500	\$ 55,195	6.5%	\$6,500	\$ 53,185	7.7%	\$7,700	\$ 60,443
2021	103,250	6.5	6,711	55,951	6.5	6,711	53,914	7.7	7,950	61,271
2022	106,606	6.5	6,929	56,657	6.5	6,929	54,594	7.7	8,209	62,044
2023	110,071	6.5	7,155	57,305	6.5	7,155	55,218	7.7	8,475	62,753
2024	113,648	6.5	7,387	57,887	6.5	7,387	55,779	7.7	8,751	63,391
2025	117,342	6.5	7,627	58,395	6.5	7,627	56,269	7.7	9,035	63,948
2026	121,156	6.5	7,875	58,820	6.5	7,875	56,679	7.7	9,329	64,414
2027	125,094	6.5	8,131	59,152	6.5	8,131	56,999	7.7	9,632	64,778
2028	129,160	6.5	8,395	59,381	6.5	8,395	57,219	7.7	9,945	65,028
2029	133,358	6.5	8,668	59,494	6.5	8,668	57,328	7.7	10,269	65,152

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	8.5%	\$8,500	\$ 62,053	9.1%	\$9,100	\$ 65,675	10.4%	\$10,400	\$ 70,892
2021	103,250	8.5	8,776	62,903	9.1	9,396	66,575	10.4	10,738	71,863
2022	106,606	8.5	9,062	63,696	9.1	9,701	67,414	10.4	11,087	72,769
2023	110,071	8.5	9,356	64,424	9.1	10,016	68,185	10.4	11,447	73,601
2024	113,648	8.5	9,660	65,079	9.1	10,342	68,878	10.4	11,819	74,349
2025	117,342	8.5	9,974	65,651	9.1	10,678	69,483	10.4	12,204	75,002
2026	121,156	8.5	10,298	66,129	9.1	11,025	69,989	10.4	12,600	75,548
2027	125,094	8.5	10,633	66,503	9.1	11,384	70,385	10.4	13,010	75,975
2028	129,160	8.5	10,979	66,760	9.1	11,754	70,657	10.4	13,433	76,269
2029	133,358	8.5	11,335	66,887	9.1	12,136	70,792	10.4	13,869	76,415

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (0% Member Contribution Rate, 3 Year FAS)

Rule of 80 Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	8.8%	\$8,800	\$ 36,656	10.7%	\$10,700	\$ 45,834	11.2%	\$11,200	\$ 51,704
2021	103,250	8.8	9,086	37,158	10.7	11,048	46,462	11.2	11,564	52,412
2022	106,606	8.8	9,381	37,627	10.7	11,407	47,048	11.2	11,940	53,073
2023	110,071	8.8	9,686	38,057	10.7	11,778	47,586	11.2	12,328	53,680
2024	113,648	8.8	10,001	38,444	10.7	12,160	48,070	11.2	12,729	54,225
2025	117,342	8.8	10,326	38,782	10.7	12,556	48,492	11.2	13,142	54,701
2026	121,156	8.8	10,662	39,065	10.7	12,964	48,845	11.2	13,569	55,099
2027	125,094	8.8	11,008	39,286	10.7	13,385	49,121	11.2	14,011	55,410
2028	129,160	8.8	11,366	39,438	10.7	13,820	49,311	11.2	14,466	55,624
2029	133,358	8.8	11,736	39,513	10.7	14,269	49,405	11.2	14,936	55,730

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	12.6%	\$12,600	\$ 57,108	12.6%	\$12,600	\$ 54,994	13.8%	\$13,800	\$ 62,519
2021	103,250	12.6	13,010	57,890	12.6	13,010	55,747	13.8	14,249	63,376
2022	106,606	12.6	13,432	58,620	12.6	13,432	56,450	13.8	14,712	64,175
2023	110,071	12.6	13,869	59,290	12.6	13,869	57,095	13.8	15,190	64,909
2024	113,648	12.6	14,320	59,892	12.6	14,320	57,675	13.8	15,683	65,569
2025	117,342	12.6	14,785	60,418	12.6	14,785	58,182	13.8	16,193	66,145
2026	121,156	12.6	15,266	60,858	12.6	15,266	58,606	13.8	16,720	66,627
2027	125,094	12.6	15,762	61,202	12.6	15,762	58,937	13.8	17,263	67,004
2028	129,160	12.6	16,274	61,439	12.6	16,274	59,165	13.8	17,824	67,263
2029	133,358	12.6	16,803	61,556	12.6	16,803	59,278	13.8	18,403	67,391

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	14.6%	\$14,600	\$ 64,163	15.3%	\$15,300	\$ 67,937	16.7%	\$16,700	\$ 73,338
2021	103,250	14.6	15,075	65,042	15.3	15,797	68,868	16.7	17,243	74,343
2022	106,606	14.6	15,564	65,862	15.3	16,311	69,736	16.7	17,803	75,280
2023	110,071	14.6	16,070	66,615	15.3	16,841	70,533	16.7	18,382	76,141
2024	113,648	14.6	16,593	67,292	15.3	17,388	71,250	16.7	18,979	76,915
2025	117,342	14.6	17,132	67,883	15.3	17,953	71,876	16.7	19,596	77,590
2026	121,156	14.6	17,689	68,377	15.3	18,537	72,400	16.7	20,233	78,155
2027	125,094	14.6	18,264	68,763	15.3	19,139	72,809	16.7	20,891	78,597
2028	129,160	14.6	18,857	69,029	15.3	19,761	73,091	16.7	21,570	78,901
2029	133,358	14.6	19,470	69,161	15.3	20,404	73,231	16.7	22,271	79,052

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (2% Member Contribution Rate, 3 Year FAS)

(Member contributions are additional)

Rule of 80 Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	6.9%	\$6,900	\$ 36,656	8.8%	\$8,800	\$ 45,834	9.3%	\$9,300	\$ 51,704
2021	103,250	6.9	7,124	37,158	8.8	9,086	46,462	9.3	9,602	52,412
2022	106,606	6.9	7,356	37,627	8.8	9,381	47,048	9.3	9,914	53,073
2023	110,071	6.9	7,595	38,057	8.8	9,686	47,586	9.3	10,237	53,680
2024	113,648	6.9	7,842	38,444	8.8	10,001	48,070	9.3	10,569	54,225
2025	117,342	6.9	8,097	38,782	8.8	10,326	48,492	9.3	10,913	54,701
2026	121,156	6.9	8,360	39,065	8.8	10,662	48,845	9.3	11,268	55,099
2027	125,094	6.9	8,631	39,286	8.8	11,008	49,121	9.3	11,634	55,410
2028	129,160	6.9	8,912	39,438	8.8	11,366	49,311	9.3	12,012	55,624
2029	133,358	6.9	9,202	39,513	8.8	11,736	49,405	9.3	12,402	55,730

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	10.7%	\$10,700	\$ 57,108	10.7%	\$10,700	\$ 54,994	11.9%	\$11,900	\$ 62,519
2021	103,250	10.7	11,048	57,890	10.7	11,048	55,747	11.9	12,287	63,376
2022	106,606	10.7	11,407	58,620	10.7	11,407	56,450	11.9	12,686	64,175
2023	110,071	10.7	11,778	59,290	10.7	11,778	57,095	11.9	13,098	64,909
2024	113,648	10.7	12,160	59,892	10.7	12,160	57,675	11.9	13,524	65,569
2025	117,342	10.7	12,556	60,418	10.7	12,556	58,182	11.9	13,964	66,145
2026	121,156	10.7	12,964	60,858	10.7	12,964	58,606	11.9	14,418	66,627
2027	125,094	10.7	13,385	61,202	10.7	13,385	58,937	11.9	14,886	67,004
2028	129,160	10.7	13,820	61,439	10.7	13,820	59,165	11.9	15,370	67,263
2029	133,358	10.7	14,269	61,556	10.7	14,269	59,278	11.9	15,870	67,391

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	12.7%	\$12,700	\$ 64,163	13.4%	\$13,400	\$ 67,937	14.8%	\$14,800	\$ 73,338
2021	103,250	12.7	13,113	65,042	13.4	13,836	68,868	14.8	15,281	74,343
2022	106,606	12.7	13,539	65,862	13.4	14,285	69,736	14.8	15,778	75,280
2023	110,071	12.7	13,979	66,615	13.4	14,750	70,533	14.8	16,291	76,141
2024	113,648	12.7	14,433	67,292	13.4	15,229	71,250	14.8	16,820	76,915
2025	117,342	12.7	14,902	67,883	13.4	15,724	71,876	14.8	17,367	77,590
2026	121,156	12.7	15,387	68,377	13.4	16,235	72,400	14.8	17,931	78,155
2027	125,094	12.7	15,887	68,763	13.4	16,763	72,809	14.8	18,514	78,597
2028	129,160	12.7	16,403	69,029	13.4	17,307	73,091	14.8	19,116	78,901
2029	133,358	12.7	16,936	69,161	13.4	17,870	73,231	14.8	19,737	79,052

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (4% Member Contribution Rate, 3 Year FAS)

(Member contributions are additional)

Rule of 80 Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	5.0%	\$5,000	\$ 36,656	6.9%	\$6,900	\$ 45,834	7.4%	\$7,400	\$ 51,704
2021	103,250	5.0	5,163	37,158	6.9	7,124	46,462	7.4	7,641	52,412
2022	106,606	5.0	5,330	37,627	6.9	7,356	47,048	7.4	7,889	53,073
2023	110,071	5.0	5,504	38,057	6.9	7,595	47,586	7.4	8,145	53,680
2024	113,648	5.0	5,682	38,444	6.9	7,842	48,070	7.4	8,410	54,225
2025	117,342	5.0	5,867	38,782	6.9	8,097	48,492	7.4	8,683	54,701
2026	121,156	5.0	6,058	39,065	6.9	8,360	48,845	7.4	8,966	55,099
2027	125,094	5.0	6,255	39,286	6.9	8,631	49,121	7.4	9,257	55,410
2028	129,160	5.0	6,458	39,438	6.9	8,912	49,311	7.4	9,558	55,624
2029	133,358	5.0	6,668	39,513	6.9	9,202	49,405	7.4	9,868	55,730

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	8.8%	\$8,800	\$ 57,108	8.8%	\$8,800	\$ 54,994	10.0%	\$10,000	\$ 62,519
2021	103,250	8.8	9,086	57,890	8.8	9,086	55,747	10.0	10,325	63,376
2022	106,606	8.8	9,381	58,620	8.8	9,381	56,450	10.0	10,661	64,175
2023	110,071	8.8	9,686	59,290	8.8	9,686	57,095	10.0	11,007	64,909
2024	113,648	8.8	10,001	59,892	8.8	10,001	57,675	10.0	11,365	65,569
2025	117,342	8.8	10,326	60,418	8.8	10,326	58,182	10.0	11,734	66,145
2026	121,156	8.8	10,662	60,858	8.8	10,662	58,606	10.0	12,116	66,627
2027	125,094	8.8	11,008	61,202	8.8	11,008	58,937	10.0	12,509	67,004
2028	129,160	8.8	11,366	61,439	8.8	11,366	59,165	10.0	12,916	67,263
2029	133,358	8.8	11,736	61,556	8.8	11,736	59,278	10.0	13,336	67,391

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	10.8%	\$10,800	\$ 64,163	11.5%	\$11,500	\$ 67,937	12.9%	\$12,900	\$ 73,338
2021	103,250	10.8	11,151	65,042	11.5	11,874	68,868	12.9	13,319	74,343
2022	106,606	10.8	11,513	65,862	11.5	12,260	69,736	12.9	13,752	75,280
2023	110,071	10.8	11,888	66,615	11.5	12,658	70,533	12.9	14,199	76,141
2024	113,648	10.8	12,274	67,292	11.5	13,070	71,250	12.9	14,661	76,915
2025	117,342	10.8	12,673	67,883	11.5	13,494	71,876	12.9	15,137	77,590
2026	121,156	10.8	13,085	68,377	11.5	13,933	72,400	12.9	15,629	78,155
2027	125,094	10.8	13,510	68,763	11.5	14,386	72,809	12.9	16,137	78,597
2028	129,160	10.8	13,949	69,029	11.5	14,853	73,091	12.9	16,662	78,901
2029	133,358	10.8	14,403	69,161	11.5	15,336	73,231	12.9	17,203	79,052

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.



Grand River Township - General

Employer Contribution Rates (6% Member Contribution Rate, 3 Year FAS)

(Member contributions are additional)

Rule of 80 Retirement Eligibility

Valuation Year	Estimated Projected Payroll	L-1 Benefit Program			L-3 Benefit Program			LT-4(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	3.1%	\$3,100	\$ 36,656	5.0%	\$5,000	\$ 45,834	5.5%	\$5,500	\$ 51,704
2021	103,250	3.1	3,201	37,158	5.0	5,163	46,462	5.5	5,679	52,412
2022	106,606	3.1	3,305	37,627	5.0	5,330	47,048	5.5	5,863	53,073
2023	110,071	3.1	3,412	38,057	5.0	5,504	47,586	5.5	6,054	53,680
2024	113,648	3.1	3,523	38,444	5.0	5,682	48,070	5.5	6,251	54,225
2025	117,342	3.1	3,638	38,782	5.0	5,867	48,492	5.5	6,454	54,701
2026	121,156	3.1	3,756	39,065	5.0	6,058	48,845	5.5	6,664	55,099
2027	125,094	3.1	3,878	39,286	5.0	6,255	49,121	5.5	6,880	55,410
2028	129,160	3.1	4,004	39,438	5.0	6,458	49,311	5.5	7,104	55,624
2029	133,358	3.1	4,134	39,513	5.0	6,668	49,405	5.5	7,335	55,730

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	6.9%	\$6,900	\$ 57,108	6.9%	\$6,900	\$ 54,994	8.1%	\$8,100	\$ 62,519
2021	103,250	6.9	7,124	57,890	6.9	7,124	55,747	8.1	8,363	63,376
2022	106,606	6.9	7,356	58,620	6.9	7,356	56,450	8.1	8,635	64,175
2023	110,071	6.9	7,595	59,290	6.9	7,595	57,095	8.1	8,916	64,909
2024	113,648	6.9	7,842	59,892	6.9	7,842	57,675	8.1	9,205	65,569
2025	117,342	6.9	8,097	60,418	6.9	8,097	58,182	8.1	9,505	66,145
2026	121,156	6.9	8,360	60,858	6.9	8,360	58,606	8.1	9,814	66,627
2027	125,094	6.9	8,631	61,202	6.9	8,631	58,937	8.1	10,133	67,004
2028	129,160	6.9	8,912	61,439	6.9	8,912	59,165	8.1	10,462	67,263
2029	133,358	6.9	9,202	61,556	6.9	9,202	59,278	8.1	10,802	67,391

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 100,000	8.9%	\$8,900	\$ 64,163	9.6%	\$9,600	\$ 67,937	11.0%	\$11,000	\$ 73,338
2021	103,250	8.9	9,189	65,042	9.6	9,912	68,868	11.0	11,358	74,343
2022	106,606	8.9	9,488	65,862	9.6	10,234	69,736	11.0	11,727	75,280
2023	110,071	8.9	9,796	66,615	9.6	10,567	70,533	11.0	12,108	76,141
2024	113,648	8.9	10,115	67,292	9.6	10,910	71,250	11.0	12,501	76,915
2025	117,342	8.9	10,443	67,883	9.6	11,265	71,876	11.0	12,908	77,590
2026	121,156	8.9	10,783	68,377	9.6	11,631	72,400	11.0	13,327	78,155
2027	125,094	8.9	11,133	68,763	9.6	12,009	72,809	11.0	13,760	78,597
2028	129,160	8.9	11,495	69,029	9.6	12,399	73,091	11.0	14,208	78,901
2029	133,358	8.9	11,869	69,161	9.6	12,802	73,231	11.0	14,669	79,052

Notes regarding the above projections:

- 1) The purpose of the above projections is to comply with the requirements of Section 105.660 of the Revised Statutes of Missouri (RSMo). The projection results may not be applicable for other purposes.
- 2) Estimated projected payroll is based upon the valuation payroll, increased each future year by 3.25%.
- 3) 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.
- 4) Differences between the date of the initial valuation and the actuarial valuation date of February 28th have not been incorporated in the above results.
- 5) The actual employer contribution rates for future valuation dates will be based upon actual data as of the future valuation date.

