



The Initial Valuation For

# Jefferson County PWSD #3

as of June 30, 2019



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August 16, 2019

Jefferson County PWS #3  
Arnold, 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 11 as the current cost plus the disability cost. 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 11 as the prior service cost. 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 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 current cost, disability cost, and prior service cost (the total employer cost as shown on pages 4 thru 11). These contributions are mandatory after official action has been taken to join the System.

The total annual dollar costs shown on pages 12 and 13 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 28, 2019.

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 June 30, 2019. 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.

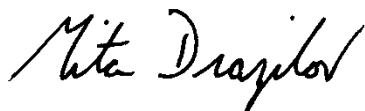
If you have any questions concerning this report or LAGERS in general, please contact the LAGERS office in Jefferson City.

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

**Contributory Plan.** Under the contributory plan, each covered member contributes 4% of compensation to LAGERS. If an employee terminates before being eligible for an immediate benefit, the member's contributions, plus any interest credited to the member's individual account, are refunded upon request.

**Non-Contributory Plan.** Under the non-contributory plan, there is no individual employee contribution to the plan, no individual account maintained for each employee, and no refund paid to employees who terminate before being eligible for a benefit.

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

In total this allows for 72 different combinations of benefit plans, giving employers considerable latitude in designing the retirement program 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.

## Jefferson County PWSD #3

### Employer Contribution Rates (Contributory Plan - 5 Year FAS) (4% member contributions are additional)

#### Regular Retirement Eligibility

Benefit Program	Employee Groups	Percents of Active Member Payroll			
		Prior Service Cost *	Current Cost	Disability Cost	Total Employer Contribution Rate
L-1	General	7.30%	3.20%	0.20%	10.70%
L-3	General	9.10	4.60	0.30	14.00
LT-4(65)	General	8.20	3.90	0.20	12.30
LT-5(65)	General	9.90	5.10	0.30	15.30
L-7	General	11.00	5.90	0.30	17.20
LT-8(65)	General	11.50	6.30	0.30	18.10
L-12	General	12.90	7.40	0.40	20.70
LT-14(65)	General	13.20	7.60	0.40	21.20
L-6	General	14.80	8.80	0.50	24.10

\* 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 will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.

## Jefferson County PWSD #3

### Employer Contribution Rates (Contributory Plan - 3 Year FAS) (4% member contributions are additional)

#### Regular Retirement Eligibility

Benefit Program	Employee Groups	Percents of Active Member Payroll			
		Prior Service Cost *	Current Cost	Disability Cost	Total Employer Contribution Rate
L-1	General	7.50%	3.40%	0.20%	11.10%
L-3	General	9.50	4.80	0.30	14.60
LT-4(65)	General	8.50	4.20	0.20	12.90
LT-5(65)	General	10.20	5.40	0.30	15.90
L-7	General	11.40	6.30	0.30	18.00
LT-8(65)	General	11.90	6.60	0.30	18.80
L-12	General	13.40	7.70	0.40	21.50
LT-14(65)	General	13.60	7.90	0.40	21.90
L-6	General	15.30	9.20	0.50	25.00

\* 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 will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.

## Jefferson County PWSD #3

### Employer Contribution Rates (Non-Contributory Plan - 5 Year FAS) (No member contributions)

#### Regular Retirement Eligibility

Benefit Program	Employee Groups	Percents of Active Member Payroll			
		Prior Service Cost *	Current Cost	Disability Cost	Total Employer Contribution Rate
L-1	General	7.60%	6.70%	0.20%	14.50%
L-3	General	9.40	8.10	0.30	17.80
LT-4(65)	General	8.50	7.40	0.20	16.10
LT-5(65)	General	10.20	8.70	0.30	19.20
L-7	General	11.30	9.50	0.30	21.10
LT-8(65)	General	11.80	9.90	0.30	22.00
L-12	General	13.20	11.00	0.40	24.60
LT-14(65)	General	13.50	11.20	0.40	25.10
L-6	General	15.10	12.40	0.50	28.00

\* 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 will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.



## Jefferson County PWSD #3

### Employer Contribution Rates (Non-Contributory Plan - 3 Year FAS) (No member contributions)

#### Regular Retirement Eligibility

Benefit Program	Employee Groups	Percents of Active Member Payroll			
		Prior Service Cost *	Current Cost	Disability Cost	Total Employer Contribution Rate
L-1	General	7.80%	6.90%	0.20%	14.90%
L-3	General	9.80	8.40	0.30	18.50
LT-4(65)	General	8.80	7.60	0.20	16.60
LT-5(65)	General	10.50	8.90	0.30	19.70
L-7	General	11.70	9.90	0.30	21.90
LT-8(65)	General	12.20	10.20	0.30	22.70
L-12	General	13.70	11.30	0.40	25.40
LT-14(65)	General	13.90	11.50	0.40	25.80
L-6	General	15.60	12.80	0.50	28.90

\* 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 will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.

## Jefferson County PWSD #3

### Employer Contribution Rates (Contributory Plan - 5 Year FAS) (4% member contributions are additional)

#### Rule of 80 Retirement Eligibility#

Benefit Program	Employee Groups	Percents of Active Member Payroll			
		Prior Service Cost *	Current Cost	Disability Cost	Total Employer Contribution Rate
L-1	General	7.80%	3.60%	0.20%	11.60%
L-3	General	9.90	5.10	0.30	15.30
LT-4(65)	General	9.50	4.90	0.20	14.60
LT-5(65)	General	11.10	6.00	0.30	17.40
L-7	General	11.90	6.60	0.30	18.80
LT-8(65)	General	12.70	7.20	0.30	20.20
L-12	General	13.90	8.10	0.40	22.40
LT-14(65)	General	14.40	8.30	0.40	23.10
L-6	General	16.00	9.60	0.50	26.10

# 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 will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.

## Jefferson County PWSD #3

### Employer Contribution Rates (Contributory Plan - 3 Year FAS) (4% member contributions are additional)

#### Rule of 80 Retirement Eligibility#

Benefit Program	Employee Groups	Percents of Active Member Payroll			Total Employer Contribution Rate
		Prior Service Cost *	Current Cost	Disability Cost	
L-1	General	8.10%	3.80%	0.20%	12.10%
L-3	General	10.20	5.30	0.30	15.80
LT-4(65)	General	9.80	5.10	0.20	15.10
LT-5(65)	General	11.50	6.30	0.30	18.10
L-7	General	12.30	6.90	0.30	19.50
LT-8(65)	General	13.20	7.50	0.30	21.00
L-12	General	14.40	8.50	0.40	23.30
LT-14(65)	General	14.90	8.70	0.40	24.00
L-6	General	16.50	10.10	0.50	27.10

# 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 will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.

## Jefferson County PWSD #3

### Employer Contribution Rates (Non-Contributory Plan - 5 Year FAS) (No member contributions)

#### Rule of 80 Retirement Eligibility#

Benefit Program	Employee Groups	Percents of Active Member Payroll			
		Prior Service Cost *	Current Cost	Disability Cost	Total Employer Contribution Rate
L-1	General	8.10%	7.10%	0.20%	15.40%
L-3	General	10.20	8.60	0.30	19.10
LT-4(65)	General	9.80	8.30	0.20	18.30
LT-5(65)	General	11.40	9.50	0.30	21.20
L-7	General	12.20	10.20	0.30	22.70
LT-8(65)	General	13.00	10.80	0.30	24.10
L-12	General	14.20	11.70	0.40	26.30
LT-14(65)	General	14.60	12.00	0.40	27.00
L-6	General	16.30	13.20	0.50	30.00

# 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 will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.

## Jefferson County PWSD #3

### Employer Contribution Rates (Non-Contributory Plan - 3 Year FAS) (No member contributions)

#### Rule of 80 Retirement Eligibility#

Benefit Program	Employee Groups	Percents of Active Member Payroll			
		Prior Service Cost *	Current Cost	Disability Cost	Total Employer Contribution Rate
L-1	General	8.40%	7.30%	0.20%	15.90%
L-3	General	10.50	8.90	0.30	19.70
LT-4(65)	General	10.10	8.60	0.20	18.90
LT-5(65)	General	11.80	9.80	0.30	21.90
L-7	General	12.60	10.50	0.30	23.40
LT-8(65)	General	13.50	11.10	0.30	24.90
L-12	General	14.70	12.10	0.40	27.20
LT-14(65)	General	15.10	12.40	0.40	27.90
L-6	General	16.80	13.70	0.50	31.00

# 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 will be reduced. An additional actuarial valuation will need to be performed to determine the employer contribution rate.

# Jefferson County PWSD #3

## Employer Contribution Dollars Regular Retirement Eligibility

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:

### Contributory Plan

5 Year FAS	
Benefit Program	General
L-1	\$ 66,970
L-3	87,624
LT-4(65)	76,984
LT-5(65)	95,761
L-7	107,653
LT-8(65)	113,286
L-12	129,559
LT-14(65)	132,688
L-6	150,839

3 Year FAS	
Benefit Program	General
L-1	\$ 69,474
L-3	91,380
LT-4(65)	80,740
LT-5(65)	99,516
L-7	112,660
LT-8(65)	117,667
L-12	134,566
LT-14(65)	137,069
L-6	156,472

### Non-Contributory Plan

5 Year FAS	
Benefit Program	General
L-1	\$ 90,754
L-3	111,408
LT-4(65)	100,768
LT-5(65)	120,170
L-7	132,062
LT-8(65)	137,695
L-12	153,968
LT-14(65)	157,098
L-6	175,249

3 Year FAS	
Benefit Program	General
L-1	\$ 93,257
L-3	115,789
LT-4(65)	103,897
LT-5(65)	123,300
L-7	137,069
LT-8(65)	142,077
L-12	158,976
LT-14(65)	161,479
L-6	180,882

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.

# Jefferson County PWSD #3

## Employer Contribution Dollars Rule of 80 Retirement Eligibility

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:

### Contributory Plan

5 Year FAS	
Benefit Program	General
L-1	\$ 72,603
L-3	95,761
LT-4(65)	91,380
LT-5(65)	108,905
L-7	117,667
LT-8(65)	126,429
L-12	140,199
LT-14(65)	144,580
L-6	163,357

3 Year FAS	
Benefit Program	General
L-1	\$ 75,732
L-3	98,890
LT-4(65)	94,509
LT-5(65)	113,286
L-7	122,048
LT-8(65)	131,436
L-12	145,832
LT-14(65)	150,213
L-6	169,616

### Non-Contributory Plan

5 Year FAS	
Benefit Program	General
L-1	\$ 96,387
L-3	119,545
LT-4(65)	114,538
LT-5(65)	132,688
L-7	142,077
LT-8(65)	150,839
L-12	164,609
LT-14(65)	168,990
L-6	187,766

3 Year FAS	
Benefit Program	General
L-1	\$ 99,516
L-3	123,300
LT-4(65)	118,293
LT-5(65)	137,069
L-7	146,458
LT-8(65)	155,846
L-12	170,242
LT-14(65)	174,623
L-6	194,025

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.

## Jefferson County PWSD #3

### Employees and Payroll Included in the Valuation

	General
Number of Employees	12
Annual Payroll	\$ 625,888

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



## **APPENDIX I**

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### **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 11 as the "Prior Service Cost" 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:

### Jefferson County PWSD #3

#### Regular Retirement Eligibility

Benefit Group	Employee Group	Contributory		Non-Contributory	
		UAAL (5 Year FAS)	UAAL (3 Year FAS)	UAAL (5 Year FAS)	UAAL (3 Year FAS)
L-1	General	\$ 799,453	\$ 827,881	\$ 833,352	\$ 861,782
L-3	General	1,007,914	1,043,448	1,041,676	1,077,264
LT-4(65)	General	906,677	938,868	939,609	971,722
LT-5(65)	General	1,088,302	1,126,668	1,121,375	1,159,717
L-7	General	1,216,177	1,258,845	1,250,020	1,292,677
LT-8(65)	General	1,269,812	1,314,332	1,303,169	1,347,662
L-12	General	1,424,464	1,474,112	1,458,379	1,508,131
LT-14(65)	General	1,451,275	1,501,863	1,484,947	1,535,605
L-6	General	1,632,478	1,689,204	1,666,688	1,723,604

## Jefferson County PWSD #3

### Unfunded Actuarial Accrued Liability (UAAL)

#### Rule of 80 Retirement Eligibility

Benefit Group	Employee Group	Contributory		Non-Contributory	
		UAAL (5 Year FAS)	UAAL (3 Year FAS)	UAAL (5 Year FAS)	UAAL (3 Year FAS)
L-1	General	\$ 865,102	\$ 896,173	\$ 896,818	\$ 927,852
L-3	General	1,089,317	1,128,097	1,120,984	1,159,840
LT-4(65)	General	1,044,658	1,082,064	1,075,110	1,112,435
LT-5(65)	General	1,223,971	1,267,537	1,254,709	1,298,265
L-7	General	1,313,374	1,359,904	1,345,217	1,391,792
LT-8(65)	General	1,403,145	1,452,839	1,434,376	1,484,089
L-12	General	1,537,376	1,591,606	1,569,428	1,623,779
LT-14(65)	General	1,582,257	1,638,084	1,613,966	1,669,919
L-6	General	1,761,243	1,823,133	1,793,611	1,855,740

## **APPENDIX II**

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### **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 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 a year, which is the portion of the individual pay increase assumptions attributable to wage inflation. In effect, this assumes no change in the number of active members per employer. Adopted 2016.
7. An individual entry-age actuarial cost method of valuation was used in determining age and service allowance actuarial liabilities and normal cost. Adopted 1986.
8. The data about persons now covered was furnished by the political subdivision. Although examined for general reasonableness, the data was not audited by us.

## Schedule 1.

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

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

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

## Schedule 2.

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

#### Early Retirement

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

#### Normal Retirement

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

## Schedule 2. (Continued)

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

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



## **APPENDIX III**

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### **SUMMARY OF LAGERS PROVISIONS**

# Missouri Local Government Employees Retirement System

## Brief Summary of LAGERS

### Benefits and Conditions Evaluated and/or Considered as of February 28, 2019

(Section references are to RSMo)

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

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

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

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

L-1 Benefit Program:	1.00% for life
L-3 Benefit Program:	1.25% for life
L-7 Benefit Program:	1.50% for life
L-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 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 4% of compensation beginning after completion of sufficient employment for 6 months of credited service.

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

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

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

## **APPENDIX IV**

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### **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 <sup>1</sup> )

Final Average Salary (FAS) <sup>1</sup>	LAGERS BENEFIT <sup>3</sup>	Estimated Social Security <sup>2</sup>	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$ 525	\$ 930	\$1,455	97%
2,000	700	1,076	1,776	89%
2,500	875	1,223	2,098	84%
3,000	1,050	1,370	2,420	81%
3,500	1,225	1,516	2,741	78%
4,000	1,400	1,662	3,062	77%
25 Years of Service:				
\$1,500	\$ 375	\$ 930	\$1,305	87%
2,000	500	1,076	1,576	79%
2,500	625	1,223	1,848	74%
3,000	750	1,370	2,120	71%
3,500	875	1,516	2,391	68%
4,000	1,000	1,662	2,662	67%
15 Years of Service:				
\$1,500	\$225	\$ 930	\$1,155	77%
2,000	300	1,076	1,376	69%
2,500	375	1,223	1,598	64%
3,000	450	1,370	1,820	61%
3,500	525	1,516	2,041	58%
4,000	600	1,662	2,262	57%

<sup>1</sup> "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.

<sup>2</sup> "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 2019 - it does not include any amounts which might be payable to an eligible spouse or children.

<sup>3</sup> 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 <sup>1</sup> )**

Final Average Salary (FAS) <sup>1</sup>	LAGERS BENEFIT <sup>3</sup>	Estimated Social Security <sup>2</sup>	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$ 656	\$ 930	\$1,586	106%
2,000	875	1,076	1,951	98%
2,500	1,094	1,223	2,317	93%
3,000	1,313	1,370	2,683	89%
3,500	1,531	1,516	3,047	87%
4,000	1,750	1,662	3,412	85%
25 Years of Service:				
\$1,500	\$ 469	\$ 930	\$1,399	93%
2,000	625	1,076	1,701	85%
2,500	781	1,223	2,004	80%
3,000	938	1,370	2,308	77%
3,500	1,094	1,516	2,610	75%
4,000	1,250	1,662	2,912	73%
15 Years of Service:				
\$1,500	\$281	\$ 930	\$1,211	81%
2,000	375	1,076	1,451	73%
2,500	469	1,223	1,692	68%
3,000	563	1,370	1,933	64%
3,500	656	1,516	2,172	62%
4,000	750	1,662	2,412	60%

<sup>1</sup> "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.

<sup>2</sup> "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 2019 - it does not include any amounts which might be payable to an eligible spouse or children.

<sup>3</sup> 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 <sup>1</sup> )**

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

<sup>1</sup> "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.

<sup>2</sup> "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 2019 - it does not include any amounts which might be payable to an eligible spouse or children.

<sup>3</sup> 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 <sup>1</sup> )**

Final Average Salary (FAS) <sup>1</sup>	LAGERS BENEFIT <sup>3</sup>	Estimated Social Security <sup>2</sup>	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$ 919	\$ 930	\$1,849	123%
2,000	1,225	1,076	2,301	115%
2,500	1,531	1,223	2,754	110%
3,000	1,838	1,370	3,208	107%
3,500	2,144	1,516	3,660	105%
4,000	2,450	1,662	4,112	103%
25 Years of Service:				
\$1,500	\$ 656	\$ 930	\$1,586	106%
2,000	875	1,076	1,951	98%
2,500	1,094	1,223	2,317	93%
3,000	1,313	1,370	2,683	89%
3,500	1,531	1,516	3,047	87%
4,000	1,750	1,662	3,412	85%
15 Years of Service:				
\$1,500	\$ 394	\$ 930	\$1,324	88%
2,000	525	1,076	1,601	80%
2,500	656	1,223	1,879	75%
3,000	788	1,370	2,158	72%
3,500	919	1,516	2,435	70%
4,000	1,050	1,662	2,712	68%

<sup>1</sup> "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.

<sup>2</sup> "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 2019 - it does not include any amounts which might be payable to an eligible spouse or children.

<sup>3</sup> 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 <sup>1</sup> )

Final Average Salary (FAS) <sup>1</sup>	LAGERS BENEFIT <sup>3</sup>	Estimated Social Security <sup>2</sup>	Estimated Monthly Total	
			\$	% of FAS
35 Years of Service:				
\$1,500	\$1,050	\$ 930	\$1,980	132%
2,000	1,400	1,076	2,476	124%
2,500	1,750	1,223	2,973	119%
3,000	2,100	1,370	3,470	116%
3,500	2,450	1,516	3,966	113%
4,000	2,800	1,662	4,462	112%
25 Years of Service:				
\$1,500	\$ 750	\$ 930	\$1,680	112%
2,000	1,000	1,076	2,076	104%
2,500	1,250	1,223	2,473	99%
3,000	1,500	1,370	2,870	96%
3,500	1,750	1,516	3,266	93%
4,000	2,000	1,662	3,662	92%
15 Years of Service:				
\$1,500	\$ 450	\$ 930	\$1,380	92%
2,000	600	1,076	1,676	84%
2,500	750	1,223	1,973	79%
3,000	900	1,370	2,270	76%
3,500	1,050	1,516	2,566	73%
4,000	1,200	1,662	2,862	72%

<sup>1</sup> "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.

<sup>2</sup> "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 2019 - it does not include any amounts which might be payable to an eligible spouse or children.

<sup>3</sup> 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 <sup>1</sup> to age 65)**  
**1.00% of FAS <sup>1</sup> at age 65)**

Final Average Salary (FAS) <sup>1</sup>	LAGERS BENEFIT <sup>3</sup>		Estimated Social Security <sup>2</sup>	Estimated Monthly Total		Percent of FAS	
	To 65	At 65		To 65	At 65	To 65	At 65
35 Years of Service:							
\$1,500	\$1,050	\$ 525	\$ 930	\$1,050	\$1,455	70%	97%
2,000	1,400	700	1,076	1,400	1,776	70%	89%
2,500	1,750	875	1,223	1,750	2,098	70%	84%
3,000	2,100	1,050	1,370	2,100	2,420	70%	81%
3,500	2,450	1,225	1,516	2,450	2,741	70%	78%
4,000	2,800	1,400	1,662	2,800	3,062	70%	77%
25 Years of Service:							
\$1,500	\$ 750	\$ 375	\$ 930	\$ 750	\$1,305	50%	87%
2,000	1,000	500	1,076	1,000	1,576	50%	79%
2,500	1,250	625	1,223	1,250	1,848	50%	74%
3,000	1,500	750	1,370	1,500	2,120	50%	71%
3,500	1,750	875	1,516	1,750	2,391	50%	68%
4,000	2,000	1,000	1,662	2,000	2,662	50%	67%
15 Years of Service:							
\$1,500	\$ 450	\$225	\$ 930	\$ 450	\$1,155	30%	77%
2,000	600	300	1,076	600	1,376	30%	69%
2,500	750	375	1,223	750	1,598	30%	64%
3,000	900	450	1,370	900	1,820	30%	61%
3,500	1,050	525	1,516	1,050	2,041	30%	58%
4,000	1,200	600	1,662	1,200	2,262	30%	57%

<sup>1</sup> "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.

<sup>2</sup> "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 2019 - it does not include any amounts which might be payable to an eligible spouse or children.

<sup>3</sup> 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 <sup>1</sup> to age 65)**  
**1.25% of FAS <sup>1</sup> at age 65)**

Final Average Salary (FAS) <sup>1</sup>	LAGERS BENEFIT <sup>3</sup>		Estimated Social Security <sup>2</sup>	Estimated Monthly Total		Percent of FAS	
	To 65	At 65		To 65	At 65	To 65	At 65
35 Years of Service:							
\$1,500	\$1,050	\$ 656	\$ 930	\$1,050	\$1,586	70%	106%
2,000	1,400	875	1,076	1,400	1,951	70%	98%
2,500	1,750	1,094	1,223	1,750	2,317	70%	93%
3,000	2,100	1,313	1,370	2,100	2,683	70%	89%
3,500	2,450	1,531	1,516	2,450	3,047	70%	87%
4,000	2,800	1,750	1,662	2,800	3,412	70%	85%
25 Years of Service:							
\$1,500	\$ 750	\$ 469	\$ 930	\$ 750	\$1,399	50%	93%
2,000	1,000	625	1,076	1,000	1,701	50%	85%
2,500	1,250	781	1,223	1,250	2,004	50%	80%
3,000	1,500	938	1,370	1,500	2,308	50%	77%
3,500	1,750	1,094	1,516	1,750	2,610	50%	75%
4,000	2,000	1,250	1,662	2,000	2,912	50%	73%
15 Years of Service:							
\$1,500	\$ 450	\$281	\$ 930	\$ 450	\$1,211	30%	81%
2,000	600	375	1,076	600	1,451	30%	73%
2,500	750	469	1,223	750	1,692	30%	68%
3,000	900	563	1,370	900	1,933	30%	64%
3,500	1,050	656	1,516	1,050	2,172	30%	62%
4,000	1,200	750	1,662	1,200	2,412	30%	60%

<sup>1</sup> "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.

<sup>2</sup> "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 2019 - it does not include any amounts which might be payable to an eligible spouse or children.

<sup>3</sup> 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 <sup>1</sup> to age 65)**  
**1.50% of FAS <sup>1</sup> at age 65)**

Final Average Salary (FAS) <sup>1</sup>	LAGERS BENEFIT <sup>3</sup>		Estimated Social Security <sup>2</sup>	Estimated Monthly Total		Percent of FAS	
	To 65	At 65		To 65	At 65	To 65	At 65
35 Years of Service:							
\$1,500	\$1,050	\$ 788	\$ 930	\$1,050	\$1,718	70%	115%
2,000	1,400	1,050	1,076	1,400	2,126	70%	106%
2,500	1,750	1,313	1,223	1,750	2,536	70%	101%
3,000	2,100	1,575	1,370	2,100	2,945	70%	98%
3,500	2,450	1,838	1,516	2,450	3,354	70%	96%
4,000	2,800	2,100	1,662	2,800	3,762	70%	94%
25 Years of Service:							
\$1,500	\$ 750	\$ 563	\$ 930	\$ 750	\$1,493	50%	100%
2,000	1,000	750	1,076	1,000	1,826	50%	91%
2,500	1,250	938	1,223	1,250	2,161	50%	86%
3,000	1,500	1,125	1,370	1,500	2,495	50%	83%
3,500	1,750	1,313	1,516	1,750	2,829	50%	81%
4,000	2,000	1,500	1,662	2,000	3,162	50%	79%
15 Years of Service:							
\$1,500	\$ 450	\$338	\$ 930	\$ 450	\$1,268	30%	85%
2,000	600	450	1,076	600	1,526	30%	76%
2,500	750	563	1,223	750	1,786	30%	71%
3,000	900	675	1,370	900	2,045	30%	68%
3,500	1,050	788	1,516	1,050	2,304	30%	66%
4,000	1,200	900	1,662	1,200	2,562	30%	64%

<sup>1</sup> "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.

<sup>2</sup> "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 2019 - it does not include any amounts which might be payable to an eligible spouse or children.

<sup>3</sup> 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 <sup>1</sup> to age 65)**  
**1.75% of FAS <sup>1</sup> at age 65)**

Final Average Salary (FAS) <sup>1</sup>	LAGERS BENEFIT <sup>3</sup>		Estimated Social Security <sup>2</sup>	Estimated Monthly Total		Percent of FAS	
	To 65	At 65		To 65	At 65	To 65	At 65
35 Years of Service:							
\$1,500	\$1,050	\$ 919	\$ 930	\$1,050	\$1,849	70%	123%
2,000	1,400	1,225	1,076	1,400	2,301	70%	115%
2,500	1,750	1,531	1,223	1,750	2,754	70%	110%
3,000	2,100	1,838	1,370	2,100	3,208	70%	107%
3,500	2,450	2,144	1,516	2,450	3,660	70%	105%
4,000	2,800	2,450	1,662	2,800	4,112	70%	103%
25 Years of Service:							
\$1,500	\$ 750	\$ 656	\$ 930	\$ 750	\$1,586	50%	106%
2,000	1,000	875	1,076	1,000	1,951	50%	98%
2,500	1,250	1,094	1,223	1,250	2,317	50%	93%
3,000	1,500	1,313	1,370	1,500	2,683	50%	89%
3,500	1,750	1,531	1,516	1,750	3,047	50%	87%
4,000	2,000	1,750	1,662	2,000	3,412	50%	85%
15 Years of Service:							
\$1,500	\$ 450	\$ 394	\$ 930	\$ 450	\$1,324	30%	88%
2,000	600	525	1,076	600	1,601	30%	80%
2,500	750	656	1,223	750	1,879	30%	75%
3,000	900	788	1,370	900	2,158	30%	72%
3,500	1,050	919	1,516	1,050	2,435	30%	70%
4,000	1,200	1,050	1,662	1,200	2,712	30%	68%

<sup>1</sup> "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.

<sup>2</sup> "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 2019 - it does not include any amounts which might be payable to an eligible spouse or children.

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

## **APPENDIX V**

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### **AGE AND SERVICE CHARACTERISTICS OF EMPLOYEES**

# Jefferson County PWSD #3

June 30, 2019

## 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
<b>Under 20</b>									
20-24									
25-29									
30-34	1	1						2	\$ 59,583
35-39									
40-44			1	1				2	\$ 139,759
45-49	1							1	\$ 51,451
50-54	2							2	\$ 94,156
55-59		2			1			3	\$ 151,222
60-64			1				1	2	\$ 129,717
65-69									
<b>70 &amp; Over</b>									
<b>Totals</b>	<b>4</b>	<b>3</b>	<b>2</b>	<b>1</b>	<b>1</b>		<b>1</b>	<b>12</b>	<b>\$ 625,888</b>

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

Age: 49.0 years.

Benefit Service: 11.0 years.

Annual Pay: \$52,157.



## **APPENDIX VI**

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### **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 11 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.



August 16, 2019 E-mail

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

Dear Bob:

Enclosed is the report of the June 30, 2019 Initial Actuarial Valuation of LAGERS benefits for the employees of

Jefferson County PWSD #3

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

August 16, 2019

Jefferson County PWSD #3  
Arnold, Missouri

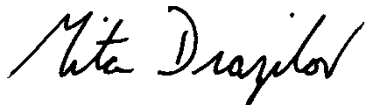
Ladies and Gentlemen:

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 June 30, 2019 Initial Valuation for the Jefferson County PWSD #3 dated August 16, 2019.

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 28, 2019.

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,



Mita D. Drazilov, ASA, FCA, MAAA

# Jefferson County PWSD #3 - General

## Employer Contribution Rates (Contributory Plan - 5 Year FAS)

(4% 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
2019	\$ 624,888	10.6%	\$66,238	\$ 795,773	14.0%	\$87,484	\$ 1,003,293	12.3%	\$76,861	\$ 902,487
2020	645,197	10.6	68,391	806,675	14.0	90,328	1,017,038	12.3	79,359	914,851
2021	666,166	10.6	70,614	816,847	14.0	93,263	1,029,862	12.3	81,938	926,387
2022	687,816	10.6	72,908	826,186	14.0	96,294	1,041,636	12.3	84,601	936,978
2023	710,170	10.6	75,278	834,581	14.0	99,424	1,052,220	12.3	87,351	946,499
2024	733,251	10.6	77,725	841,911	14.0	102,655	1,061,461	12.3	90,190	954,811
2025	757,082	10.6	80,251	848,044	14.0	105,991	1,069,193	12.3	93,121	961,766
2026	781,687	10.6	82,859	852,837	14.0	109,436	1,075,236	12.3	96,148	967,202
2027	807,092	10.6	85,552	856,135	14.0	112,993	1,079,394	12.3	99,272	970,942
2028	833,322	10.6	88,332	857,770	14.0	116,665	1,081,455	12.3	102,499	972,796

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
2019	\$ 624,888	15.2%	\$94,983	\$ 1,083,304	17.3%	\$108,106	\$ 1,210,630	18.1%	\$113,105	\$ 1,264,011
2020	645,197	15.2	98,070	1,098,145	17.3	111,619	1,227,215	18.1	116,781	1,281,328
2021	666,166	15.2	101,257	1,111,992	17.3	115,247	1,242,689	18.1	120,576	1,297,485
2022	687,816	15.2	104,548	1,124,705	17.3	118,992	1,256,897	18.1	124,495	1,312,319
2023	710,170	15.2	107,946	1,136,133	17.3	122,859	1,269,668	18.1	128,541	1,325,653
2024	733,251	15.2	111,454	1,146,111	17.3	126,852	1,280,819	18.1	132,718	1,337,295
2025	757,082	15.2	115,076	1,154,460	17.3	130,975	1,290,149	18.1	137,032	1,347,036
2026	781,687	15.2	118,816	1,160,985	17.3	135,232	1,297,441	18.1	141,485	1,354,649
2027	807,092	15.2	122,678	1,165,475	17.3	139,627	1,302,458	18.1	146,084	1,359,887
2028	833,322	15.2	126,665	1,167,700	17.3	144,165	1,304,945	18.1	150,831	1,362,484

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
2019	\$ 624,888	20.7%	\$129,352	\$ 1,417,979	21.1%	\$131,851	\$ 1,444,657	24.1%	\$150,598	\$ 1,625,057
2020	645,197	20.7	133,556	1,437,405	21.1	136,137	1,464,449	24.1	155,492	1,647,320
2021	666,166	20.7	137,896	1,455,530	21.1	140,561	1,482,915	24.1	160,546	1,668,092
2022	687,816	20.7	142,378	1,472,171	21.1	145,129	1,499,869	24.1	165,764	1,687,163
2023	710,170	20.7	147,005	1,487,130	21.1	149,846	1,515,109	24.1	171,151	1,704,306
2024	733,251	20.7	151,783	1,500,190	21.1	154,716	1,528,415	24.1	176,713	1,719,274
2025	757,082	20.7	156,716	1,511,118	21.1	159,744	1,539,548	24.1	182,457	1,731,798
2026	781,687	20.7	161,809	1,519,658	21.1	164,936	1,548,249	24.1	188,387	1,741,586
2027	807,092	20.7	167,068	1,525,535	21.1	170,296	1,554,236	24.1	194,509	1,748,321
2028	833,322	20.7	172,498	1,528,448	21.1	175,831	1,557,204	24.1	200,831	1,751,659

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 28<sup>th</sup> 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.

# Jefferson County PWSD #3 - General

## Employer Contribution Rates (Contributory Plan - 3 Year FAS)

(4% 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
2019	\$ 624,888	11.1%	\$69,363	\$ 824,071	14.5%	\$90,609	\$ 1,038,669	12.9%	\$80,611	\$ 934,532
2020	645,197	11.1	71,617	835,361	14.5	93,554	1,052,899	12.9	83,230	947,335
2021	666,166	11.1	73,944	845,894	14.5	96,594	1,066,175	12.9	85,935	959,280
2022	687,816	11.1	76,348	855,565	14.5	99,733	1,078,365	12.9	88,728	970,247
2023	710,170	11.1	78,829	864,258	14.5	102,975	1,089,322	12.9	91,612	980,106
2024	733,251	11.1	81,391	871,848	14.5	106,321	1,098,889	12.9	94,589	988,714
2025	757,082	11.1	84,036	878,199	14.5	109,777	1,106,894	12.9	97,664	995,916
2026	781,687	11.1	86,767	883,162	14.5	113,345	1,113,150	12.9	100,838	1,001,545
2027	807,092	11.1	89,587	886,577	14.5	117,028	1,117,455	12.9	104,115	1,005,418
2028	833,322	11.1	92,499	888,270	14.5	120,832	1,119,589	12.9	107,499	1,007,338

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
2019	\$ 624,888	15.9%	\$99,357	\$ 1,121,496	18.0%	\$112,480	\$ 1,253,105	18.8%	\$117,479	\$ 1,308,334
2020	645,197	15.9	102,586	1,136,860	18.0	116,135	1,270,272	18.8	121,297	1,326,258
2021	666,166	15.9	105,920	1,151,195	18.0	119,910	1,286,289	18.8	125,239	1,342,981
2022	687,816	15.9	109,363	1,164,357	18.0	123,807	1,300,995	18.8	129,309	1,358,335
2023	710,170	15.9	112,917	1,176,188	18.0	127,831	1,314,214	18.8	133,512	1,372,137
2024	733,251	15.9	116,587	1,186,518	18.0	131,985	1,325,756	18.8	137,851	1,384,188
2025	757,082	15.9	120,376	1,195,161	18.0	136,275	1,335,413	18.8	142,331	1,394,271
2026	781,687	15.9	124,288	1,201,916	18.0	140,704	1,342,960	18.8	146,957	1,402,151
2027	807,092	15.9	128,328	1,206,564	18.0	145,277	1,348,153	18.8	151,733	1,407,573
2028	833,322	15.9	132,498	1,208,868	18.0	149,998	1,350,727	18.8	156,665	1,410,261

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
2019	\$ 624,888	21.5%	\$134,351	\$ 1,467,407	21.9%	\$136,850	\$ 1,495,028	25.0%	\$156,222	\$ 1,681,529
2020	645,197	21.5	138,717	1,487,510	21.9	141,298	1,515,510	25.0	161,299	1,704,566
2021	666,166	21.5	143,226	1,506,267	21.9	145,890	1,534,620	25.0	166,542	1,726,060
2022	687,816	21.5	147,880	1,523,488	21.9	150,632	1,552,165	25.0	171,954	1,745,794
2023	710,170	21.5	152,687	1,538,968	21.9	155,527	1,567,936	25.0	177,543	1,763,533
2024	733,251	21.5	157,649	1,552,484	21.9	160,582	1,581,706	25.0	183,313	1,779,021
2025	757,082	21.5	162,773	1,563,793	21.9	165,801	1,593,228	25.0	189,271	1,791,980
2026	781,687	21.5	168,063	1,572,631	21.9	171,189	1,602,232	25.0	195,422	1,802,108
2027	807,092	21.5	173,525	1,578,712	21.9	176,753	1,608,428	25.0	201,773	1,809,077
2028	833,322	21.5	179,164	1,581,727	21.9	182,498	1,611,499	25.0	208,331	1,812,531

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 28<sup>th</sup> 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.

# Jefferson County PWSD #3 - General

## Employer Contribution Rates (Non-Contributory Plan - 5 Year FAS)

(0% 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
2019	\$ 624,888	14.4%	\$89,984	\$ 829,661	17.8%	\$111,230	\$ 1,037,054	16.1%	\$100,607	\$ 935,415
2020	645,197	14.4	92,908	841,027	17.8	114,845	1,051,261	16.1	103,877	948,230
2021	666,166	14.4	95,928	851,632	17.8	118,578	1,064,517	16.1	107,253	960,187
2022	687,816	14.4	99,046	861,369	17.8	122,431	1,076,688	16.1	110,738	971,165
2023	710,170	14.4	102,264	870,121	17.8	126,410	1,087,628	16.1	114,337	981,033
2024	733,251	14.4	105,588	877,763	17.8	130,519	1,097,180	16.1	118,053	989,649
2025	757,082	14.4	109,020	884,157	17.8	134,761	1,105,172	16.1	121,890	996,858
2026	781,687	14.4	112,563	889,154	17.8	139,140	1,111,418	16.1	125,852	1,002,492
2027	807,092	14.4	116,221	892,592	17.8	143,662	1,115,716	16.1	129,942	1,006,369
2028	833,322	14.4	119,998	894,296	17.8	148,331	1,117,846	16.1	134,165	1,008,291

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
2019	\$ 624,888	19.1%	\$119,354	\$ 1,116,385	21.2%	\$132,476	\$ 1,244,466	22.0%	\$137,475	\$ 1,297,372
2020	645,197	19.1	123,233	1,131,679	21.2	136,782	1,261,515	22.0	141,943	1,315,146
2021	666,166	19.1	127,238	1,145,949	21.2	141,227	1,277,422	22.0	146,557	1,331,729
2022	687,816	19.1	131,373	1,159,051	21.2	145,817	1,292,027	22.0	151,320	1,346,955
2023	710,170	19.1	135,642	1,170,828	21.2	150,556	1,305,155	22.0	156,237	1,360,641
2024	733,251	19.1	140,051	1,181,111	21.2	155,449	1,316,617	22.0	161,315	1,372,591
2025	757,082	19.1	144,603	1,189,715	21.2	160,501	1,326,208	22.0	166,558	1,382,589
2026	781,687	19.1	149,302	1,196,439	21.2	165,718	1,333,703	22.0	171,971	1,390,403
2027	807,092	19.1	154,155	1,201,066	21.2	171,104	1,338,860	22.0	177,560	1,395,780
2028	833,322	19.1	159,165	1,203,359	21.2	176,664	1,341,417	22.0	183,331	1,398,445

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
2019	\$ 624,888	24.6%	\$153,722	\$ 1,451,917	25.0%	\$156,222	\$ 1,478,360	28.0%	\$174,969	\$ 1,659,298
2020	645,197	24.6	158,718	1,471,808	25.0	161,299	1,498,613	28.0	180,655	1,682,030
2021	666,166	24.6	163,877	1,490,367	25.0	166,542	1,517,510	28.0	186,526	1,703,239
2022	687,816	24.6	169,203	1,507,406	25.0	171,954	1,534,860	28.0	192,588	1,722,712
2023	710,170	24.6	174,702	1,522,723	25.0	177,543	1,550,456	28.0	198,848	1,740,216
2024	733,251	24.6	180,380	1,536,096	25.0	183,313	1,564,073	28.0	205,310	1,755,499
2025	757,082	24.6	186,242	1,547,285	25.0	189,271	1,575,466	28.0	211,983	1,768,287
2026	781,687	24.6	192,295	1,556,030	25.0	195,422	1,584,370	28.0	218,872	1,778,281
2027	807,092	24.6	198,545	1,562,047	25.0	201,773	1,590,497	28.0	225,986	1,785,158
2028	833,322	24.6	204,997	1,565,030	25.0	208,331	1,593,534	28.0	233,330	1,788,567

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 28<sup>th</sup> 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.



# Jefferson County PWSD #3 - General

## Employer Contribution Rates (Non-Contributory Plan - 3 Year FAS)

(0% 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 %	Annual	Accrued	As a %	Annual	Accrued	As a %	Annual	Accrued
		of Payroll	Dollars	Liability	of Payroll	Dollars	Liability	of Payroll	Dollars	Liability
2019	\$ 624,888	14.9%	\$93,108	\$ 857,959	18.4%	\$114,979	\$ 1,072,487	16.6%	\$103,731	\$ 967,384
2020	645,197	14.9	96,134	869,713	18.4	118,716	1,087,180	16.6	107,103	980,637
2021	666,166	14.9	99,259	880,680	18.4	122,575	1,100,889	16.6	110,584	993,002
2022	687,816	14.9	102,485	890,749	18.4	126,558	1,113,475	16.6	114,177	1,004,355
2023	710,170	14.9	105,815	899,800	18.4	130,671	1,124,789	16.6	117,888	1,014,560
2024	733,251	14.9	109,254	907,702	18.4	134,918	1,134,667	16.6	121,720	1,023,470
2025	757,082	14.9	112,805	914,314	18.4	139,303	1,142,932	16.6	125,676	1,030,925
2026	781,687	14.9	116,471	919,481	18.4	143,830	1,149,391	16.6	129,760	1,036,751
2027	807,092	14.9	120,257	923,037	18.4	148,505	1,153,836	16.6	133,977	1,040,760
2028	833,322	14.9	124,165	924,800	18.4	153,331	1,156,039	16.6	138,331	1,042,747

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 %	Annual	Accrued	As a %	Annual	Accrued	As a %	Annual	Accrued
		of Payroll	Dollars	Liability	of Payroll	Dollars	Liability	of Payroll	Dollars	Liability
2019	\$ 624,888	19.7%	\$123,103	\$ 1,154,555	21.9%	\$136,850	\$ 1,286,951	22.7%	\$141,850	\$ 1,341,675
2020	645,197	19.7	127,104	1,170,372	21.9	141,298	1,304,582	22.7	146,460	1,360,056
2021	666,166	19.7	131,235	1,185,130	21.9	145,890	1,321,032	22.7	151,220	1,377,205
2022	687,816	19.7	135,500	1,198,680	21.9	150,632	1,336,135	22.7	156,134	1,392,950
2023	710,170	19.7	139,903	1,210,860	21.9	155,527	1,349,711	22.7	161,209	1,407,104
2024	733,251	19.7	144,450	1,221,494	21.9	160,582	1,361,565	22.7	166,448	1,419,462
2025	757,082	19.7	149,145	1,230,392	21.9	165,801	1,371,483	22.7	171,858	1,429,802
2026	781,687	19.7	153,992	1,237,346	21.9	171,189	1,379,234	22.7	177,443	1,437,883
2027	807,092	19.7	158,997	1,242,131	21.9	176,753	1,384,568	22.7	183,210	1,443,443
2028	833,322	19.7	164,164	1,244,503	21.9	182,498	1,387,212	22.7	189,164	1,446,199

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 %	Annual	Accrued	As a %	Annual	Accrued	As a %	Annual	Accrued
		of Payroll	Dollars	Liability	of Payroll	Dollars	Liability	of Payroll	Dollars	Liability
2019	\$ 624,888	25.4%	\$158,722	\$ 1,501,448	25.8%	\$161,221	\$ 1,528,792	28.9%	\$180,593	\$ 1,715,968
2020	645,197	25.4	163,880	1,522,018	25.8	166,461	1,549,736	28.9	186,462	1,739,477
2021	666,166	25.4	169,206	1,541,210	25.8	171,871	1,569,277	28.9	192,522	1,761,411
2022	687,816	25.4	174,705	1,558,831	25.8	177,457	1,587,218	28.9	198,779	1,781,549
2023	710,170	25.4	180,383	1,574,670	25.8	183,224	1,603,346	28.9	205,239	1,799,651
2024	733,251	25.4	186,246	1,588,499	25.8	189,179	1,617,427	28.9	211,910	1,815,456
2025	757,082	25.4	192,299	1,600,070	25.8	195,327	1,629,209	28.9	218,797	1,828,680
2026	781,687	25.4	198,548	1,609,113	25.8	201,675	1,638,417	28.9	225,908	1,839,015
2027	807,092	25.4	205,001	1,615,336	25.8	208,230	1,644,753	28.9	233,250	1,846,127
2028	833,322	25.4	211,664	1,618,420	25.8	214,997	1,647,894	28.9	240,830	1,849,652

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 28<sup>th</sup> 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.

# Jefferson County PWSD #3 - General

## Employer Contribution Rates (Contributory Plan - 5 Year FAS)

(4% 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
2019	\$ 624,888	11.6%	\$72,487	\$ 861,280	15.3%	\$95,608	\$ 1,084,530	14.5%	\$90,609	\$ 1,040,220
2020	645,197	11.6	74,843	873,079	15.3	98,715	1,099,388	14.5	93,554	1,054,471
2021	666,166	11.6	77,275	884,088	15.3	101,923	1,113,251	14.5	96,594	1,067,767
2022	687,816	11.6	79,787	894,196	15.3	105,236	1,125,979	14.5	99,733	1,079,975
2023	710,170	11.6	82,380	903,282	15.3	108,656	1,137,420	14.5	102,975	1,090,949
2024	733,251	11.6	85,057	911,215	15.3	112,187	1,147,409	14.5	106,321	1,100,530
2025	757,082	11.6	87,822	917,853	15.3	115,834	1,155,767	14.5	109,777	1,108,547
2026	781,687	11.6	90,676	923,040	15.3	119,598	1,162,299	14.5	113,345	1,114,812
2027	807,092	11.6	93,623	926,609	15.3	123,485	1,166,794	14.5	117,028	1,119,123
2028	833,322	11.6	96,665	928,378	15.3	127,498	1,169,022	14.5	120,832	1,121,260

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
2019	\$ 624,888	17.4%	\$108,731	\$ 1,218,723	18.8%	\$117,479	\$ 1,307,624	20.2%	\$126,227	\$ 1,397,087
2020	645,197	17.4	112,264	1,235,419	18.8	121,297	1,325,538	20.2	130,330	1,416,227
2021	666,166	17.4	115,913	1,250,997	18.8	125,239	1,342,252	20.2	134,566	1,434,085
2022	687,816	17.4	119,680	1,265,300	18.8	129,309	1,357,598	20.2	138,939	1,450,481
2023	710,170	17.4	123,570	1,278,157	18.8	133,512	1,371,392	20.2	143,454	1,465,219
2024	733,251	17.4	127,586	1,289,382	18.8	137,851	1,383,436	20.2	148,117	1,478,087
2025	757,082	17.4	131,732	1,298,774	18.8	142,331	1,393,513	20.2	152,931	1,488,854
2026	781,687	17.4	136,014	1,306,114	18.8	146,957	1,401,389	20.2	157,901	1,497,269
2027	807,092	17.4	140,434	1,311,165	18.8	151,733	1,406,808	20.2	163,033	1,503,059
2028	833,322	17.4	144,998	1,313,669	18.8	156,665	1,409,494	20.2	168,331	1,505,929

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
2019	\$ 624,888	22.4%	\$139,975	\$ 1,530,666	23.1%	\$144,349	\$ 1,575,393	26.1%	\$163,096	\$ 1,753,556
2020	645,197	22.4	144,524	1,551,636	23.1	149,041	1,596,976	26.1	168,396	1,777,579
2021	666,166	22.4	149,221	1,571,201	23.1	153,884	1,617,113	26.1	173,869	1,799,993
2022	687,816	22.4	154,071	1,589,164	23.1	158,885	1,635,601	26.1	179,520	1,820,572
2023	710,170	22.4	159,078	1,605,311	23.1	164,049	1,652,220	26.1	185,354	1,839,071
2024	733,251	22.4	164,248	1,619,409	23.1	169,381	1,666,730	26.1	191,379	1,855,222
2025	757,082	22.4	169,586	1,631,205	23.1	174,886	1,678,871	26.1	197,598	1,868,736
2026	781,687	22.4	175,098	1,640,424	23.1	180,570	1,688,359	26.1	204,020	1,879,297
2027	807,092	22.4	180,789	1,646,768	23.1	186,438	1,694,888	26.1	210,651	1,886,564
2028	833,322	22.4	186,664	1,649,912	23.1	192,497	1,698,124	26.1	217,497	1,890,166

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 28<sup>th</sup> 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.

# Jefferson County PWSD #3 - General

## Employer Contribution Rates (Contributory Plan - 3 Year FAS)

(4% 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
2019	\$ 624,888	12.1%	\$75,611	\$ 892,220	15.8%	\$98,732	\$ 1,123,149	15.1%	\$94,358	\$ 1,077,477
2020	645,197	12.1	78,069	904,443	15.8	101,941	1,138,536	15.1	97,425	1,092,238
2021	666,166	12.1	80,606	915,847	15.8	105,254	1,152,892	15.1	100,591	1,106,010
2022	687,816	12.1	83,226	926,318	15.8	108,675	1,166,073	15.1	103,860	1,118,655
2023	710,170	12.1	85,931	935,730	15.8	112,207	1,177,921	15.1	107,236	1,130,022
2024	733,251	12.1	88,723	943,948	15.8	115,854	1,188,266	15.1	110,721	1,139,946
2025	757,082	12.1	91,607	950,824	15.8	119,619	1,196,922	15.1	114,319	1,148,250
2026	781,687	12.1	94,584	956,198	15.8	123,507	1,203,687	15.1	118,035	1,154,740
2027	807,092	12.1	97,658	959,896	15.8	127,521	1,208,342	15.1	121,871	1,159,205
2028	833,322	12.1	100,832	961,729	15.8	131,665	1,210,649	15.1	125,832	1,161,418

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
2019	\$ 624,888	18.1%	\$113,105	\$ 1,262,110	19.5%	\$121,853	\$ 1,353,956	20.9%	\$130,602	\$ 1,446,575
2020	645,197	18.1	116,781	1,279,401	19.5	125,813	1,372,505	20.9	134,846	1,466,393
2021	666,166	18.1	120,576	1,295,533	19.5	129,902	1,389,811	20.9	139,229	1,484,883
2022	687,816	18.1	124,495	1,310,345	19.5	134,124	1,405,701	20.9	143,754	1,501,860
2023	710,170	18.1	128,541	1,323,659	19.5	138,483	1,419,984	20.9	148,426	1,517,120
2024	733,251	18.1	132,718	1,335,284	19.5	142,984	1,432,455	20.9	153,249	1,530,444
2025	757,082	18.1	137,032	1,345,011	19.5	147,631	1,442,889	20.9	158,230	1,541,592
2026	781,687	18.1	141,485	1,352,613	19.5	152,429	1,451,044	20.9	163,373	1,550,305
2027	807,092	18.1	146,084	1,357,844	19.5	157,383	1,456,655	20.9	168,682	1,556,300
2028	833,322	18.1	150,831	1,360,437	19.5	162,498	1,459,436	20.9	174,164	1,559,272

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
2019	\$ 624,888	23.3%	\$145,599	\$ 1,584,657	24.0%	\$149,973	\$ 1,630,975	27.1%	\$169,345	\$ 1,815,190
2020	645,197	23.3	150,331	1,606,367	24.0	154,847	1,653,319	27.1	174,848	1,840,058
2021	666,166	23.3	155,217	1,626,622	24.0	159,880	1,674,166	27.1	180,531	1,863,260
2022	687,816	23.3	160,261	1,645,219	24.0	165,076	1,693,307	27.1	186,398	1,884,563
2023	710,170	23.3	165,470	1,661,936	24.0	170,441	1,710,513	27.1	192,456	1,903,712
2024	733,251	23.3	170,847	1,676,532	24.0	175,980	1,725,535	27.1	198,711	1,920,431
2025	757,082	23.3	176,400	1,688,744	24.0	181,700	1,738,104	27.1	205,169	1,934,420
2026	781,687	23.3	182,133	1,698,288	24.0	187,605	1,747,927	27.1	211,837	1,945,353
2027	807,092	23.3	188,052	1,704,855	24.0	193,702	1,754,686	27.1	218,722	1,952,876
2028	833,322	23.3	194,164	1,708,110	24.0	199,997	1,758,037	27.1	225,830	1,956,605

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 28<sup>th</sup> 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.

# Jefferson County PWSD #3 - General

## Employer Contribution Rates (Non-Contributory Plan - 5 Year FAS)

(0% 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 %	Annual	Accrued	As a %	Annual	Accrued	As a %	Annual	Accrued
		of Payroll	Dollars	Liability	of Payroll	Dollars	Liability	of Payroll	Dollars	Liability
2019	\$ 624,888	15.4%	\$96,233	\$ 892,991	19.0%	\$118,729	\$ 1,116,197	18.2%	\$113,730	\$ 1,070,674
2020	645,197	15.4	99,360	905,225	19.0	122,587	1,131,489	18.2	117,426	1,085,342
2021	666,166	15.4	102,590	916,639	19.0	126,572	1,145,756	18.2	121,242	1,099,027
2022	687,816	15.4	105,924	927,119	19.0	130,685	1,158,855	18.2	125,183	1,111,592
2023	710,170	15.4	109,366	936,539	19.0	134,932	1,170,630	18.2	129,251	1,122,887
2024	733,251	15.4	112,921	944,764	19.0	139,318	1,180,911	18.2	133,452	1,132,749
2025	757,082	15.4	116,591	951,646	19.0	143,846	1,189,513	18.2	137,789	1,141,000
2026	781,687	15.4	120,380	957,024	19.0	148,521	1,196,236	18.2	142,267	1,147,449
2027	807,092	15.4	124,292	960,725	19.0	153,347	1,200,862	18.2	146,891	1,151,886
2028	833,322	15.4	128,332	962,559	19.0	158,331	1,203,155	18.2	151,665	1,154,085

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	Annual	Accrued	As a % of	Annual	Accrued	As a % of	Annual	Accrued
		Payroll	Dollars	Liability	Payroll	Dollars	Liability	Payroll	Dollars	Liability
2019	\$ 624,888	21.2%	\$132,476	\$ 1,249,469	22.7%	\$141,850	\$ 1,339,471	24.1%	\$150,598	\$ 1,428,323
2020	645,197	21.2	136,782	1,266,587	22.7	146,460	1,357,822	24.1	155,492	1,447,891
2021	666,166	21.2	141,227	1,282,558	22.7	151,220	1,374,943	24.1	160,546	1,466,148
2022	687,816	21.2	145,817	1,297,221	22.7	156,134	1,390,663	24.1	165,764	1,482,910
2023	710,170	21.2	150,556	1,310,402	22.7	161,209	1,404,793	24.1	171,151	1,497,978
2024	733,251	21.2	155,449	1,321,910	22.7	166,448	1,417,130	24.1	176,713	1,511,134
2025	757,082	21.2	160,501	1,331,539	22.7	171,858	1,427,453	24.1	182,457	1,522,142
2026	781,687	21.2	165,718	1,339,064	22.7	177,443	1,435,521	24.1	188,387	1,530,745
2027	807,092	21.2	171,104	1,344,242	22.7	183,210	1,441,072	24.1	194,509	1,536,664
2028	833,322	21.2	176,664	1,346,809	22.7	189,164	1,443,824	24.1	200,831	1,539,598

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	Annual	Accrued	As a % of	Annual	Accrued	As a % of	Annual	Accrued
		Payroll	Dollars	Liability	Payroll	Dollars	Liability	Payroll	Dollars	Liability
2019	\$ 624,888	26.3%	\$164,346	\$ 1,562,720	27.0%	\$168,720	\$ 1,607,110	30.0%	\$187,466	\$ 1,785,948
2020	645,197	26.3	169,687	1,584,129	27.0	174,203	1,629,127	30.0	193,559	1,810,415
2021	666,166	26.3	175,202	1,604,104	27.0	179,865	1,649,669	30.0	199,850	1,833,243
2022	687,816	26.3	180,896	1,622,444	27.0	185,710	1,668,530	30.0	206,345	1,854,202
2023	710,170	26.3	186,775	1,638,930	27.0	191,746	1,685,484	30.0	213,051	1,873,042
2024	733,251	26.3	192,845	1,653,324	27.0	197,978	1,700,287	30.0	219,975	1,889,492
2025	757,082	26.3	199,113	1,665,367	27.0	204,412	1,712,672	30.0	227,125	1,903,256
2026	781,687	26.3	205,584	1,674,779	27.0	211,055	1,722,351	30.0	234,506	1,914,013
2027	807,092	26.3	212,265	1,681,255	27.0	217,915	1,729,011	30.0	242,128	1,921,415
2028	833,322	26.3	219,164	1,684,465	27.0	224,997	1,732,313	30.0	249,997	1,925,084

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 28<sup>th</sup> 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.

# Jefferson County PWSD #3 - General

## Employer Contribution Rates (Non-Contributory Plan - 3 Year FAS)

(0% 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 Accrued Liability	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability
		As a % of Payroll	Annual Dollars		As a % of Payroll	Annual Dollars		As a % of Payroll	Annual Dollars	
2019	\$ 624,888	15.9%	\$99,357	\$ 923,897	19.7%	\$123,103	\$ 1,154,892	18.9%	\$118,104	\$ 1,107,847
2020	645,197	15.9	102,586	936,554	19.7	127,104	1,170,714	18.9	121,942	1,123,024
2021	666,166	15.9	105,920	948,363	19.7	131,235	1,185,476	18.9	125,905	1,137,185
2022	687,816	15.9	109,363	959,206	19.7	135,500	1,199,029	18.9	129,997	1,150,186
2023	710,170	15.9	112,917	968,952	19.7	139,903	1,211,212	18.9	134,222	1,161,873
2024	733,251	15.9	116,587	977,462	19.7	144,450	1,221,849	18.9	138,584	1,172,077
2025	757,082	15.9	120,376	984,582	19.7	149,145	1,230,749	18.9	143,088	1,180,615
2026	781,687	15.9	124,288	990,147	19.7	153,992	1,237,705	18.9	147,739	1,187,287
2027	807,092	15.9	128,328	993,976	19.7	158,997	1,242,491	18.9	152,540	1,191,878
2028	833,322	15.9	132,498	995,874	19.7	164,164	1,244,864	18.9	157,498	1,194,154

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial Accrued Liability	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability
		As a % of Payroll	Annual Dollars		As a % of Payroll	Annual Dollars		As a % of Payroll	Annual Dollars	
2019	\$ 624,888	21.9%	\$136,850	\$ 1,292,848	23.4%	\$146,224	\$ 1,385,849	24.8%	\$154,972	\$ 1,477,833
2020	645,197	21.9	141,298	1,310,560	23.4	150,976	1,404,835	24.8	160,009	1,498,079
2021	666,166	21.9	145,890	1,327,085	23.4	155,883	1,422,549	24.8	165,209	1,516,969
2022	687,816	21.9	150,632	1,342,257	23.4	160,949	1,438,813	24.8	170,578	1,534,312
2023	710,170	21.9	155,527	1,355,896	23.4	166,180	1,453,433	24.8	176,122	1,549,902
2024	733,251	21.9	160,582	1,367,804	23.4	171,581	1,466,198	24.8	181,846	1,563,514
2025	757,082	21.9	165,801	1,377,768	23.4	177,157	1,476,878	24.8	187,756	1,574,903
2026	781,687	21.9	171,189	1,385,555	23.4	182,915	1,485,225	24.8	193,858	1,583,804
2027	807,092	21.9	176,753	1,390,913	23.4	188,860	1,490,968	24.8	200,159	1,589,929
2028	833,322	21.9	182,498	1,393,569	23.4	194,997	1,493,815	24.8	206,664	1,592,965

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial Accrued Liability	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability	Estimated Employer Contribution		Unfunded Actuarial Accrued Liability
		As a % of Payroll	Annual Dollars		As a % of Payroll	Annual Dollars		As a % of Payroll	Annual Dollars	
2019	\$ 624,888	27.2%	\$169,970	\$ 1,616,848	27.9%	\$174,344	\$ 1,662,831	31.0%	\$193,715	\$ 1,847,816
2020	645,197	27.2	175,494	1,638,999	27.9	180,010	1,685,612	31.0	200,011	1,873,131
2021	666,166	27.2	181,197	1,659,666	27.9	185,860	1,706,867	31.0	206,511	1,896,750
2022	687,816	27.2	187,086	1,678,641	27.9	191,901	1,726,382	31.0	213,223	1,918,435
2023	710,170	27.2	193,166	1,695,698	27.9	198,137	1,743,924	31.0	220,153	1,937,928
2024	733,251	27.2	199,444	1,710,590	27.9	204,577	1,759,240	31.0	227,308	1,954,948
2025	757,082	27.2	205,926	1,723,051	27.9	211,226	1,772,055	31.0	234,695	1,969,189
2026	781,687	27.2	212,619	1,732,789	27.9	218,091	1,782,070	31.0	242,323	1,980,318
2027	807,092	27.2	219,529	1,739,490	27.9	225,179	1,788,961	31.0	250,199	1,987,976
2028	833,322	27.2	226,664	1,742,812	27.9	232,497	1,792,377	31.0	258,330	1,991,772

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 28<sup>th</sup> 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.