



The Initial Valuation For

# Marshfield Fire Protection District

as of May 31, 2020



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July 10, 2020

Marshfield Fire Protection District  
Marshfield, 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 May 31, 2020. The valuation was based on data furnished from your records concerning individual employees (see Appendix V).

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

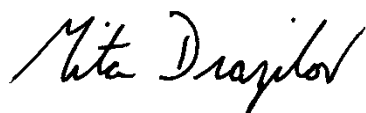
If you have any questions concerning this report or LAGERS in general, please contact the LAGERS office in Jefferson City.

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

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

The signing actuary is independent of the plan sponsor.

Respectfully submitted,



Mita D. Drazilov, ASA, FCA, MAAA



## Alternate Plan Provisions Affecting Employer Contribution Rates

The law governing LAGERS provides for 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.

# Marshfield Fire Protection District

## 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	Fire	1.40%	4.30%	0.60%	6.30%
L-3	Fire	1.80	6.10	0.70	8.60
LT-4(65)	Fire	1.90	6.30	0.60	8.80
LT-5(65)	Fire	2.20	7.60	0.70	10.50
L-7	Fire	2.20	7.90	0.80	10.90
LT-8(65)	Fire	2.40	8.90	0.80	12.10
L-12	Fire	2.60	9.80	0.90	13.30
LT-14(65)	Fire	2.70	10.20	0.90	13.80
L-6	Fire	3.00	11.60	1.00	15.60

\* 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.

# Marshfield Fire Protection District

## 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	Fire	1.50%	4.60%	0.60%	6.70%
L-3	Fire	1.90	6.50	0.70	9.10
LT-4(65)	Fire	1.90	6.60	0.60	9.10
LT-5(65)	Fire	2.20	8.00	0.70	10.90
L-7	Fire	2.30	8.30	0.80	11.40
LT-8(65)	Fire	2.50	9.30	0.80	12.60
L-12	Fire	2.70	10.20	0.90	13.80
LT-14(65)	Fire	2.80	10.70	0.90	14.40
L-6	Fire	3.10	12.10	1.00	16.20

\* 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.

# Marshfield Fire Protection District

## 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	Fire	1.50%	8.10%	0.60%	10.20%
L-3	Fire	1.90	9.90	0.70	12.50
LT-4(65)	Fire	2.00	10.10	0.60	12.70
LT-5(65)	Fire	2.30	11.40	0.70	14.40
L-7	Fire	2.30	11.70	0.80	14.80
LT-8(65)	Fire	2.50	12.70	0.80	16.00
L-12	Fire	2.70	13.60	0.90	17.20
LT-14(65)	Fire	2.80	14.00	0.90	17.70
L-6	Fire	3.10	15.40	1.00	19.50

\* 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.



# Marshfield Fire Protection District

## 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	Fire	1.60%	8.40%	0.60%	10.60%
L-3	Fire	2.00	10.30	0.70	13.00
LT-4(65)	Fire	2.00	10.40	0.60	13.00
LT-5(65)	Fire	2.30	11.80	0.70	14.80
L-7	Fire	2.40	12.10	0.80	15.30
LT-8(65)	Fire	2.60	13.10	0.80	16.50
L-12	Fire	2.80	14.00	0.90	17.70
LT-14(65)	Fire	2.90	14.50	0.90	18.30
L-6	Fire	3.20	15.90	1.00	20.10

\* 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.

# Marshfield Fire Protection District

## 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	Fire	1.50%	4.50%	0.60%	6.60%
L-3	Fire	1.90	6.30	0.70	8.90
LT-4(65)	Fire	2.00	6.70	0.60	9.30
LT-5(65)	Fire	2.30	8.00	0.70	11.00
L-7	Fire	2.30	8.20	0.80	11.30
LT-8(65)	Fire	2.50	9.30	0.80	12.60
L-12	Fire	2.70	10.00	0.90	13.60
LT-14(65)	Fire	2.80	10.60	0.90	14.30
L-6	Fire	3.10	11.90	1.00	16.00

# 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.

# Marshfield Fire Protection District

## 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			
		Prior Service Cost *	Current Cost	Disability Cost	Total Employer Contribution Rate
L-1	Fire	1.50%	4.80%	0.60%	6.90%
L-3	Fire	1.90	6.70	0.70	9.30
LT-4(65)	Fire	2.10	7.00	0.60	9.70
LT-5(65)	Fire	2.30	8.40	0.70	11.40
L-7	Fire	2.40	8.60	0.80	11.80
LT-8(65)	Fire	2.60	9.70	0.80	13.10
L-12	Fire	2.80	10.50	0.90	14.20
LT-14(65)	Fire	2.90	11.10	0.90	14.90
L-6	Fire	3.20	12.40	1.00	16.60

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# Marshfield Fire Protection District

## 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	Fire	1.60%	8.30%	0.60%	10.50%
L-3	Fire	2.00	10.10	0.70	12.80
LT-4(65)	Fire	2.10	10.50	0.60	13.20
LT-5(65)	Fire	2.40	11.80	0.70	14.90
L-7	Fire	2.40	12.00	0.80	15.20
LT-8(65)	Fire	2.60	13.10	0.80	16.50
L-12	Fire	2.80	13.80	0.90	17.50
LT-14(65)	Fire	2.90	14.40	0.90	18.20
L-6	Fire	3.20	15.70	1.00	19.90

# 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.

# Marshfield Fire Protection District

## 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	Fire	1.60%	8.60%	0.60%	10.80%
L-3	Fire	2.00	10.50	0.70	13.20
LT-4(65)	Fire	2.20	10.80	0.60	13.60
LT-5(65)	Fire	2.40	12.20	0.70	15.30
L-7	Fire	2.50	12.40	0.80	15.70
LT-8(65)	Fire	2.70	13.50	0.80	17.00
L-12	Fire	2.90	14.30	0.90	18.10
LT-14(65)	Fire	3.00	14.90	0.90	18.80
L-6	Fire	3.30	16.20	1.00	20.50

# 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.

# Marshfield Fire Protection District

## 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	Fire
L-1	\$ 5,726
L-3	7,816
LT-4(65)	7,998
LT-5(65)	9,543
L-7	9,907
LT-8(65)	10,997
L-12	12,088
LT-14(65)	12,542
L-6	14,178

3 Year FAS	
Benefit Program	Fire
L-1	\$ 6,089
L-3	8,271
LT-4(65)	8,271
LT-5(65)	9,907
L-7	10,361
LT-8(65)	11,452
L-12	12,542
LT-14(65)	13,088
L-6	14,724

### Non-Contributory Plan

5 Year FAS	
Benefit Program	Fire
L-1	\$ 9,270
L-3	11,361
LT-4(65)	11,543
LT-5(65)	13,088
L-7	13,451
LT-8(65)	14,542
L-12	15,632
LT-14(65)	16,087
L-6	17,723

3 Year FAS	
Benefit Program	Fire
L-1	\$ 9,634
L-3	11,815
LT-4(65)	11,815
LT-5(65)	13,451
L-7	13,906
LT-8(65)	14,996
L-12	16,087
LT-14(65)	16,632
L-6	18,268

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.

# Marshfield Fire Protection District

## 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	Fire
L-1	\$ 5,998
L-3	8,089
LT-4(65)	8,452
LT-5(65)	9,997
L-7	10,270
LT-8(65)	11,452
L-12	12,360
LT-14(65)	12,997
L-6	14,542

3 Year FAS	
Benefit Program	Fire
L-1	\$ 6,271
L-3	8,452
LT-4(65)	8,816
LT-5(65)	10,361
L-7	10,725
LT-8(65)	11,906
L-12	12,906
LT-14(65)	13,542
L-6	15,087

### Non-Contributory Plan

5 Year FAS	
Benefit Program	Fire
L-1	\$ 9,543
L-3	11,633
LT-4(65)	11,997
LT-5(65)	13,542
L-7	13,815
LT-8(65)	14,996
L-12	15,905
LT-14(65)	16,541
L-6	18,086

3 Year FAS	
Benefit Program	Fire
L-1	\$ 9,816
L-3	11,997
LT-4(65)	12,360
LT-5(65)	13,906
L-7	14,269
LT-8(65)	15,451
L-12	16,450
LT-14(65)	17,087
L-6	18,632

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.

## Marshfield Fire Protection District

### Employees and Payroll Included in the Valuation

	Fire
Number of Employees	2
Annual Payroll	\$ 90,886

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:

### Marshfield Fire Protection District

#### 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	Fire	\$ 22,872	\$ 23,729	\$ 24,627	\$ 25,442
L-3	Fire	29,150	30,178	30,768	31,806
LT-4(65)	Fire	29,951	31,030	31,668	32,698
LT-5(65)	Fire	34,442	35,658	36,054	37,249
L-7	Fire	35,345	36,567	36,938	38,169
LT-8(65)	Fire	38,876	40,224	40,450	41,809
L-12	Fire	41,523	42,965	43,079	44,506
LT-14(65)	Fire	43,306	44,802	44,837	46,312
L-6	Fire	47,730	49,374	49,258	50,864

# Marshfield Fire Protection District

## 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	Fire	\$ 23,555	\$ 24,482	\$ 25,325	\$ 26,172
L-3	Fire	30,006	31,070	31,634	32,704
LT-4(65)	Fire	31,657	32,845	33,384	34,510
LT-5(65)	Fire	36,083	37,362	37,683	38,951
L-7	Fire	36,408	37,669	37,977	39,249
LT-8(65)	Fire	40,438	41,845	41,998	43,403
L-12	Fire	42,737	44,226	44,305	45,782
LT-14(65)	Fire	44,748	46,314	46,319	47,867
L-6	Fire	49,109	50,814	50,630	52,317

## **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
		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**

# Marshfield Fire Protection District

May 31, 2020

## By Attained Age and Years of Service

Attained Age	Years of Service to Valuation Date							Totals	
	0-4	5-9	10-14	15-19	20-24	25-29	30 Plus	No.	Valuation Payroll
<b>Under 20</b>									
20-24									
25-29									
30-34	1							1	\$ 28,080
35-39									
40-44									
45-49			1					1	\$ 62,806
50-54									
55-59									
60-64									
65-69									
70 & Over									
<b>Totals</b>	<b>1</b>		<b>1</b>					<b>2</b>	<b>\$ 90,886</b>

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

Age: 38.0 years.

Benefit Service: 1.9 years.

Annual Pay: \$45,443.



## **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.



July 10, 2020 E-mail

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

Dear Bob:

Enclosed is the report of the May 31, 2020 Initial Actuarial Valuation of LAGERS benefits for the employees of

Marshfield Fire Protection District

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

July 10, 2020

Marshfield Fire Protection District  
Marshfield, Missouri

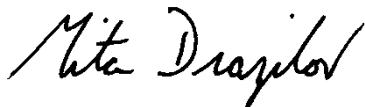
Ladies and Gentlemen:

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 May 31, 2020 Initial Valuation for the Marshfield Fire Protection District dated July 10, 2020.

The actuarial assumptions and methods used to determine the stated costs are described in Appendix II of the Initial Valuation Report. In our opinion, they do produce results which, in the aggregate, are reasonable. Additional miscellaneous and technical assumptions as well as disclosures required by the actuarial standards of practice may be found in the LAGERS Compiled Annual Actuarial Valuation report as of February 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

# Marshfield Fire Protection District - Fire

## 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
2020	\$ 90,886	6.3%	\$5,726	\$ 22,872	8.6%	\$7,816	\$ 29,150	8.8%	\$7,998	\$ 29,951
2021	93,840	6.3	5,912	23,185	8.6	8,070	29,549	8.8	8,258	30,361
2022	96,890	6.3	6,104	23,477	8.6	8,333	29,922	8.8	8,526	30,744
2023	100,039	6.3	6,302	23,745	8.6	8,603	30,264	8.8	8,803	31,095
2024	103,290	6.3	6,507	23,986	8.6	8,883	30,572	8.8	9,090	31,411
2025	106,647	6.3	6,719	24,197	8.6	9,172	30,840	8.8	9,385	31,687
2026	110,113	6.3	6,937	24,373	8.6	9,470	31,065	8.8	9,690	31,918
2027	113,692	6.3	7,163	24,511	8.6	9,778	31,241	8.8	10,005	32,098
2028	117,387	6.3	7,395	24,606	8.6	10,095	31,362	8.8	10,330	32,222
2029	121,202	6.3	7,636	24,653	8.6	10,423	31,422	8.8	10,666	32,284

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	10.5%	\$9,543	\$ 34,442	10.9%	\$9,907	\$ 35,345	12.1%	\$10,997	\$ 38,876
2021	93,840	10.5	9,853	34,914	10.9	10,229	35,829	12.1	11,355	39,409
2022	96,890	10.5	10,173	35,354	10.9	10,561	36,281	12.1	11,724	39,906
2023	100,039	10.5	10,504	35,758	10.9	10,904	36,696	12.1	12,105	40,362
2024	103,290	10.5	10,845	36,121	10.9	11,259	37,069	12.1	12,498	40,772
2025	106,647	10.5	11,198	36,438	10.9	11,625	37,395	12.1	12,904	41,130
2026	110,113	10.5	11,562	36,703	10.9	12,002	37,667	12.1	13,324	41,430
2027	113,692	10.5	11,938	36,910	10.9	12,392	37,880	12.1	13,757	41,664
2028	117,387	10.5	12,326	37,053	10.9	12,795	38,026	12.1	14,204	41,825
2029	121,202	10.5	12,726	37,124	10.9	13,211	38,099	12.1	14,665	41,905

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	13.3%	\$12,088	\$ 41,523	13.8%	\$12,542	\$ 43,306	15.6%	\$14,178	\$ 47,730
2021	93,840	13.3	12,481	42,092	13.8	12,950	43,899	15.6	14,639	48,384
2022	96,890	13.3	12,886	42,623	13.8	13,371	44,453	15.6	15,115	48,994
2023	100,039	13.3	13,305	43,110	13.8	13,805	44,961	15.6	15,606	49,554
2024	103,290	13.3	13,738	43,548	13.8	14,254	45,418	15.6	16,113	50,058
2025	106,647	13.3	14,184	43,930	13.8	14,717	45,817	15.6	16,637	50,498
2026	110,113	13.3	14,645	44,250	13.8	15,196	46,151	15.6	17,178	50,866
2027	113,692	13.3	15,121	44,500	13.8	15,689	46,412	15.6	17,736	51,153
2028	117,387	13.3	15,612	44,672	13.8	16,199	46,591	15.6	18,312	51,351
2029	121,202	13.3	16,120	44,757	13.8	16,726	46,680	15.6	18,908	51,449

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.

# Marshfield Fire Protection District - Fire

## 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
2020	\$ 90,886	6.7%	\$6,089	\$ 23,729	9.1%	\$8,271	\$ 30,178	9.1%	\$8,271	\$ 31,030
2021	93,840	6.7	6,287	24,054	9.1	8,539	30,591	9.1	8,539	31,455
2022	96,890	6.7	6,492	24,357	9.1	8,817	30,977	9.1	8,817	31,852
2023	100,039	6.7	6,703	24,635	9.1	9,104	31,331	9.1	9,104	32,216
2024	103,290	6.7	6,920	24,885	9.1	9,399	31,649	9.1	9,399	32,543
2025	106,647	6.7	7,145	25,104	9.1	9,705	31,927	9.1	9,705	32,829
2026	110,113	6.7	7,378	25,287	9.1	10,020	32,160	9.1	10,020	33,068
2027	113,692	6.7	7,617	25,430	9.1	10,346	32,342	9.1	10,346	33,255
2028	117,387	6.7	7,865	25,528	9.1	10,682	32,467	9.1	10,682	33,384
2029	121,202	6.7	8,121	25,577	9.1	11,029	32,529	9.1	11,029	33,448

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	10.9%	\$9,907	\$ 35,658	11.4%	\$10,361	\$ 36,567	12.6%	\$11,452	\$ 40,224
2021	93,840	10.9	10,229	36,147	11.4	10,698	37,068	12.6	11,824	40,775
2022	96,890	10.9	10,561	36,603	11.4	11,045	37,535	12.6	12,208	41,289
2023	100,039	10.9	10,904	37,021	11.4	11,404	37,964	12.6	12,605	41,761
2024	103,290	10.9	11,259	37,397	11.4	11,775	38,350	12.6	13,015	42,185
2025	106,647	10.9	11,625	37,725	11.4	12,158	38,687	12.6	13,438	42,555
2026	110,113	10.9	12,002	38,000	11.4	12,553	38,969	12.6	13,874	42,865
2027	113,692	10.9	12,392	38,215	11.4	12,961	39,189	12.6	14,325	43,107
2028	117,387	10.9	12,795	38,363	11.4	13,382	39,341	12.6	14,791	43,274
2029	121,202	10.9	13,211	38,436	11.4	13,817	39,416	12.6	15,271	43,357

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	13.8%	\$12,542	\$ 42,965	14.4%	\$13,088	\$ 44,802	16.2%	\$14,724	\$ 49,374
2021	93,840	13.8	12,950	43,554	14.4	13,513	45,416	16.2	15,202	50,050
2022	96,890	13.8	13,371	44,103	14.4	13,952	45,989	16.2	15,696	50,681
2023	100,039	13.8	13,805	44,607	14.4	14,406	46,515	16.2	16,206	51,260
2024	103,290	13.8	14,254	45,060	14.4	14,874	46,988	16.2	16,733	51,781
2025	106,647	13.8	14,717	45,456	14.4	15,357	47,401	16.2	17,277	52,236
2026	110,113	13.8	15,196	45,787	14.4	15,856	47,746	16.2	17,838	52,617
2027	113,692	13.8	15,689	46,046	14.4	16,372	48,016	16.2	18,418	52,914
2028	117,387	13.8	16,199	46,224	14.4	16,904	48,202	16.2	19,017	53,119
2029	121,202	13.8	16,726	46,312	14.4	17,453	48,294	16.2	19,635	53,220

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.

# Marshfield Fire Protection District - Fire

## 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
2020	\$ 90,886	10.2%	\$9,270	\$ 24,627	12.5%	\$11,361	\$ 30,768	12.7%	\$11,543	\$ 31,668
2021	93,840	10.2	9,572	24,964	12.5	11,730	31,190	12.7	11,918	32,102
2022	96,890	10.2	9,883	25,279	12.5	12,111	31,583	12.7	12,305	32,507
2023	100,039	10.2	10,204	25,568	12.5	12,505	31,944	12.7	12,705	32,879
2024	103,290	10.2	10,536	25,828	12.5	12,911	32,269	12.7	13,118	33,213
2025	106,647	10.2	10,878	26,055	12.5	13,331	32,552	12.7	13,544	33,505
2026	110,113	10.2	11,232	26,245	12.5	13,764	32,789	12.7	13,984	33,749
2027	113,692	10.2	11,597	26,393	12.5	14,212	32,974	12.7	14,439	33,940
2028	117,387	10.2	11,973	26,495	12.5	14,673	33,102	12.7	14,908	34,071
2029	121,202	10.2	12,363	26,546	12.5	15,150	33,165	12.7	15,393	34,136

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	14.4%	\$13,088	\$ 36,054	14.8%	\$13,451	\$ 36,938	16.0%	\$14,542	\$ 40,450
2021	93,840	14.4	13,513	36,548	14.8	13,888	37,444	16.0	15,014	41,004
2022	96,890	14.4	13,952	37,009	14.8	14,340	37,916	16.0	15,502	41,521
2023	100,039	14.4	14,406	37,432	14.8	14,806	38,349	16.0	16,006	41,996
2024	103,290	14.4	14,874	37,812	14.8	15,287	38,739	16.0	16,526	42,423
2025	106,647	14.4	15,357	38,144	14.8	15,784	39,079	16.0	17,064	42,796
2026	110,113	14.4	15,856	38,422	14.8	16,297	39,364	16.0	17,618	43,108
2027	113,692	14.4	16,372	38,639	14.8	16,826	39,586	16.0	18,191	43,352
2028	117,387	14.4	16,904	38,788	14.8	17,373	39,739	16.0	18,782	43,520
2029	121,202	14.4	17,453	38,862	14.8	17,938	39,815	16.0	19,392	43,603

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	17.2%	\$15,632	\$ 43,079	17.7%	\$16,087	\$ 44,837	19.5%	\$17,723	\$ 49,258
2021	93,840	17.2	16,140	43,669	17.7	16,610	45,451	19.5	18,299	49,933
2022	96,890	17.2	16,665	44,220	17.7	17,150	46,024	19.5	18,894	50,563
2023	100,039	17.2	17,207	44,726	17.7	17,707	46,550	19.5	19,508	51,141
2024	103,290	17.2	17,766	45,180	17.7	18,282	47,023	19.5	20,142	51,661
2025	106,647	17.2	18,343	45,577	17.7	18,877	47,436	19.5	20,796	52,115
2026	110,113	17.2	18,939	45,909	17.7	19,490	47,782	19.5	21,472	52,495
2027	113,692	17.2	19,555	46,168	17.7	20,123	48,052	19.5	22,170	52,792
2028	117,387	17.2	20,191	46,347	17.7	20,777	48,238	19.5	22,890	52,996
2029	121,202	17.2	20,847	46,435	17.7	21,453	48,330	19.5	23,634	53,097

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.



# Marshfield Fire Protection District - Fire

## 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 % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	10.6%	\$9,634	\$ 25,442	13.0%	\$11,815	\$ 31,806	13.0%	\$11,815	\$ 32,698
2021	93,840	10.6	9,947	25,791	13.0	12,199	32,242	13.0	12,199	33,146
2022	96,890	10.6	10,270	26,116	13.0	12,596	32,649	13.0	12,596	33,564
2023	100,039	10.6	10,604	26,415	13.0	13,005	33,022	13.0	13,005	33,948
2024	103,290	10.6	10,949	26,683	13.0	13,428	33,358	13.0	13,428	34,293
2025	106,647	10.6	11,305	26,917	13.0	13,864	33,651	13.0	13,864	34,594
2026	110,113	10.6	11,672	27,113	13.0	14,315	33,896	13.0	14,315	34,846
2027	113,692	10.6	12,051	27,266	13.0	14,780	34,088	13.0	14,780	35,043
2028	117,387	10.6	12,443	27,371	13.0	15,260	34,220	13.0	15,260	35,179
2029	121,202	10.6	12,847	27,423	13.0	15,756	34,285	13.0	15,756	35,246

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	14.8%	\$13,451	\$ 37,249	15.3%	\$13,906	\$ 38,169	16.5%	\$14,996	\$ 41,809
2021	93,840	14.8	13,888	37,759	15.3	14,358	38,692	16.5	15,484	42,382
2022	96,890	14.8	14,340	38,235	15.3	14,824	39,180	16.5	15,987	42,916
2023	100,039	14.8	14,806	38,672	15.3	15,306	39,628	16.5	16,506	43,407
2024	103,290	14.8	15,287	39,065	15.3	15,803	40,031	16.5	17,043	43,848
2025	106,647	14.8	15,784	39,408	15.3	16,317	40,383	16.5	17,597	44,233
2026	110,113	14.8	16,297	39,695	15.3	16,847	40,677	16.5	18,169	44,555
2027	113,692	14.8	16,826	39,919	15.3	17,395	40,907	16.5	18,759	44,807
2028	117,387	14.8	17,373	40,073	15.3	17,960	41,065	16.5	19,369	44,980
2029	121,202	14.8	17,938	40,150	15.3	18,544	41,143	16.5	19,998	45,066

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	17.7%	\$16,087	\$ 44,506	18.3%	\$16,632	\$ 46,312	20.1%	\$18,268	\$ 50,864
2021	93,840	17.7	16,610	45,116	18.3	17,173	46,946	20.1	18,862	51,561
2022	96,890	17.7	17,150	45,685	18.3	17,731	47,538	20.1	19,475	52,211
2023	100,039	17.7	17,707	46,207	18.3	18,307	48,081	20.1	20,108	52,808
2024	103,290	17.7	18,282	46,677	18.3	18,902	48,570	20.1	20,761	53,345
2025	106,647	17.7	18,877	47,087	18.3	19,516	48,997	20.1	21,436	53,813
2026	110,113	17.7	19,490	47,430	18.3	20,151	49,354	20.1	22,133	54,205
2027	113,692	17.7	20,123	47,698	18.3	20,806	49,633	20.1	22,852	54,511
2028	117,387	17.7	20,777	47,882	18.3	21,482	49,825	20.1	23,595	54,722
2029	121,202	17.7	21,453	47,973	18.3	22,180	49,920	20.1	24,362	54,826

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.

# Marshfield Fire Protection District - Fire

## 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
2020	\$ 90,886	6.6%	\$5,998	\$ 23,555	8.9%	\$8,089	\$ 30,006	9.3%	\$8,452	\$ 31,657
2021	93,840	6.6	6,193	23,878	8.9	8,352	30,417	9.3	8,727	32,091
2022	96,890	6.6	6,395	24,179	8.9	8,623	30,801	9.3	9,011	32,496
2023	100,039	6.6	6,603	24,455	8.9	8,903	31,153	9.3	9,304	32,868
2024	103,290	6.6	6,817	24,703	8.9	9,193	31,470	9.3	9,606	33,202
2025	106,647	6.6	7,039	24,920	8.9	9,492	31,746	9.3	9,918	33,494
2026	110,113	6.6	7,267	25,102	8.9	9,800	31,977	9.3	10,241	33,738
2027	113,692	6.6	7,504	25,244	8.9	10,119	32,158	9.3	10,573	33,929
2028	117,387	6.6	7,748	25,342	8.9	10,447	32,282	9.3	10,917	34,060
2029	121,202	6.6	7,999	25,390	8.9	10,787	32,344	9.3	11,272	34,125

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	11.0%	\$9,997	\$ 36,083	11.3%	\$10,270	\$ 36,408	12.6%	\$11,452	\$ 40,438
2021	93,840	11.0	10,322	36,577	11.3	10,604	36,907	12.6	11,824	40,992
2022	96,890	11.0	10,658	37,038	11.3	10,949	37,372	12.6	12,208	41,509
2023	100,039	11.0	11,004	37,461	11.3	11,304	37,799	12.6	12,605	41,984
2024	103,290	11.0	11,362	37,842	11.3	11,672	38,183	12.6	13,015	42,411
2025	106,647	11.0	11,731	38,174	11.3	12,051	38,518	12.6	13,438	42,783
2026	110,113	11.0	12,112	38,452	11.3	12,443	38,799	12.6	13,874	43,095
2027	113,692	11.0	12,506	38,669	11.3	12,847	39,018	12.6	14,325	43,339
2028	117,387	11.0	12,913	38,819	11.3	13,265	39,169	12.6	14,791	43,507
2029	121,202	11.0	13,332	38,893	11.3	13,696	39,244	12.6	15,271	43,590

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	13.6%	\$12,360	\$ 42,737	14.3%	\$12,997	\$ 44,748	16.0%	\$14,542	\$ 49,109
2021	93,840	13.6	12,762	43,322	14.3	13,419	45,361	16.0	15,014	49,782
2022	96,890	13.6	13,177	43,868	14.3	13,855	45,933	16.0	15,502	50,410
2023	100,039	13.6	13,605	44,370	14.3	14,306	46,458	16.0	16,006	50,986
2024	103,290	13.6	14,047	44,821	14.3	14,770	46,930	16.0	16,526	51,504
2025	106,647	13.6	14,504	45,215	14.3	15,251	47,342	16.0	17,064	51,956
2026	110,113	13.6	14,975	45,544	14.3	15,746	47,687	16.0	17,618	52,334
2027	113,692	13.6	15,462	45,801	14.3	16,258	47,957	16.0	18,191	52,630
2028	117,387	13.6	15,965	45,978	14.3	16,786	48,142	16.0	18,782	52,834
2029	121,202	13.6	16,483	46,066	14.3	17,332	48,234	16.0	19,392	52,935

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.

# Marshfield Fire Protection District - Fire

## 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
2020	\$ 90,886	6.9%	\$6,271	\$ 24,482	9.3%	\$8,452	\$ 31,070	9.7%	\$8,816	\$ 32,845
2021	93,840	6.9	6,475	24,817	9.3	8,727	31,496	9.7	9,102	33,295
2022	96,890	6.9	6,685	25,130	9.3	9,011	31,893	9.7	9,398	33,715
2023	100,039	6.9	6,903	25,417	9.3	9,304	32,258	9.7	9,704	34,100
2024	103,290	6.9	7,127	25,675	9.3	9,606	32,586	9.7	10,019	34,446
2025	106,647	6.9	7,359	25,900	9.3	9,918	32,872	9.7	10,345	34,749
2026	110,113	6.9	7,598	26,089	9.3	10,241	33,111	9.7	10,681	35,002
2027	113,692	6.9	7,845	26,236	9.3	10,573	33,298	9.7	11,028	35,200
2028	117,387	6.9	8,100	26,337	9.3	10,917	33,427	9.7	11,387	35,336
2029	121,202	6.9	8,363	26,387	9.3	11,272	33,491	9.7	11,757	35,403

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	11.4%	\$10,361	\$ 37,362	11.8%	\$10,725	\$ 37,669	13.1%	\$11,906	\$ 41,845
2021	93,840	11.4	10,698	37,874	11.8	11,073	38,185	13.1	12,293	42,418
2022	96,890	11.4	11,045	38,352	11.8	11,433	38,666	13.1	12,693	42,953
2023	100,039	11.4	11,404	38,790	11.8	11,805	39,108	13.1	13,105	43,444
2024	103,290	11.4	11,775	39,184	11.8	12,188	39,505	13.1	13,531	43,885
2025	106,647	11.4	12,158	39,528	11.8	12,584	39,852	13.1	13,971	44,270
2026	110,113	11.4	12,553	39,816	11.8	12,993	40,142	13.1	14,425	44,592
2027	113,692	11.4	12,961	40,041	11.8	13,416	40,369	13.1	14,894	44,844
2028	117,387	11.4	13,382	40,196	11.8	13,852	40,525	13.1	15,378	45,017
2029	121,202	11.4	13,817	40,273	11.8	14,302	40,602	13.1	15,877	45,103

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	14.2%	\$12,906	\$ 44,226	14.9%	\$13,542	\$ 46,314	16.6%	\$15,087	\$ 50,814
2021	93,840	14.2	13,325	44,832	14.9	13,982	46,948	16.6	15,577	51,510
2022	96,890	14.2	13,758	45,397	14.9	14,437	47,540	16.6	16,084	52,160
2023	100,039	14.2	14,206	45,916	14.9	14,906	48,084	16.6	16,606	52,756
2024	103,290	14.2	14,667	46,383	14.9	15,390	48,573	16.6	17,146	53,292
2025	106,647	14.2	15,144	46,790	14.9	15,890	49,000	16.6	17,703	53,760
2026	110,113	14.2	15,636	47,131	14.9	16,407	49,357	16.6	18,279	54,152
2027	113,692	14.2	16,144	47,397	14.9	16,940	49,636	16.6	18,873	54,458
2028	117,387	14.2	16,669	47,580	14.9	17,491	49,828	16.6	19,486	54,669
2029	121,202	14.2	17,211	47,671	14.9	18,059	49,923	16.6	20,120	54,773

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.

# Marshfield Fire Protection District - Fire

**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 % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	10.5%	\$9,543	\$ 25,325	12.8%	\$11,633	\$ 31,634	13.2%	\$11,997	\$ 33,384
2021	93,840	10.5	9,853	25,672	12.8	12,012	32,067	13.2	12,387	33,841
2022	96,890	10.5	10,173	25,996	12.8	12,402	32,471	13.2	12,789	34,268
2023	100,039	10.5	10,504	26,293	12.8	12,805	32,842	13.2	13,205	34,660
2024	103,290	10.5	10,845	26,560	12.8	13,221	33,176	13.2	13,634	35,012
2025	106,647	10.5	11,198	26,793	12.8	13,651	33,467	13.2	14,077	35,319
2026	110,113	10.5	11,562	26,988	12.8	14,094	33,711	13.2	14,535	35,576
2027	113,692	10.5	11,938	27,141	12.8	14,553	33,902	13.2	15,007	35,777
2028	117,387	10.5	12,326	27,246	12.8	15,026	34,033	13.2	15,495	35,915
2029	121,202	10.5	12,726	27,298	12.8	15,514	34,098	13.2	15,999	35,984

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	14.9%	\$13,542	\$ 37,683	15.2%	\$13,815	\$ 37,859	16.5%	\$14,996	\$ 41,998
2021	93,840	14.9	13,982	38,199	15.2	14,264	38,378	16.5	15,484	42,573
2022	96,890	14.9	14,437	38,681	15.2	14,727	38,862	16.5	15,987	43,110
2023	100,039	14.9	14,906	39,123	15.2	15,206	39,306	16.5	16,506	43,603
2024	103,290	14.9	15,390	39,521	15.2	15,700	39,705	16.5	17,043	44,046
2025	106,647	14.9	15,890	39,868	15.2	16,210	40,054	16.5	17,597	44,433
2026	110,113	14.9	16,407	40,158	15.2	16,737	40,346	16.5	18,169	44,757
2027	113,692	14.9	16,940	40,385	15.2	17,281	40,574	16.5	18,759	45,010
2028	117,387	14.9	17,491	40,541	15.2	17,843	40,731	16.5	19,369	45,184
2029	121,202	14.9	18,059	40,618	15.2	18,423	40,809	16.5	19,998	45,270

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	17.5%	\$15,905	\$ 44,305	18.2%	\$16,541	\$ 46,319	19.9%	\$18,086	\$ 50,630
2021	93,840	17.5	16,422	44,912	18.2	17,079	46,954	19.9	18,674	51,324
2022	96,890	17.5	16,956	45,478	18.2	17,634	47,546	19.9	19,281	51,971
2023	100,039	17.5	17,507	45,998	18.2	18,207	48,090	19.9	19,908	52,565
2024	103,290	17.5	18,076	46,465	18.2	18,799	48,579	19.9	20,555	53,099
2025	106,647	17.5	18,663	46,873	18.2	19,410	49,006	19.9	21,223	53,565
2026	110,113	17.5	19,270	47,214	18.2	20,041	49,363	19.9	21,912	53,955
2027	113,692	17.5	19,896	47,481	18.2	20,692	49,642	19.9	22,625	54,260
2028	117,387	17.5	20,543	47,665	18.2	21,364	49,834	19.9	23,360	54,470
2029	121,202	17.5	21,210	47,756	18.2	22,059	49,929	19.9	24,119	54,574

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.

**Marshfield Fire Protection District - Fire**

## 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	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	10.8%	\$9,816	\$ 26,172	13.2%	\$11,997	\$ 32,704	13.6%	\$12,360	\$ 34,510
2021	93,840	10.8	10,135	26,531	13.2	12,387	33,152	13.6	12,762	34,983
2022	96,890	10.8	10,464	26,866	13.2	12,789	33,570	13.6	13,177	35,424
2023	100,039	10.8	10,804	27,173	13.2	13,205	33,954	13.6	13,605	35,829
2024	103,290	10.8	11,155	27,449	13.2	13,634	34,299	13.6	14,047	36,193
2025	106,647	10.8	11,518	27,690	13.2	14,077	34,600	13.6	14,504	36,511
2026	110,113	10.8	11,892	27,892	13.2	14,535	34,852	13.6	14,975	36,777
2027	113,692	10.8	12,279	28,050	13.2	15,007	35,049	13.6	15,462	36,985
2028	117,387	10.8	12,678	28,158	13.2	15,495	35,185	13.6	15,965	37,128
2029	121,202	10.8	13,090	28,212	13.2	15,999	35,252	13.6	16,483	37,199

Valuation Year	Estimated Projected Payroll	LT-5(65) Benefit Program			L-7 Benefit Program			LT-8(65) Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	15.3%	\$13,906	\$ 38,951	15.7%	\$14,269	\$ 39,249	17.0%	\$15,451	\$ 43,403
2021	93,840	15.3	14,358	39,485	15.7	14,733	39,787	17.0	15,953	43,998
2022	96,890	15.3	14,824	39,983	15.7	15,212	40,289	17.0	16,471	44,553
2023	100,039	15.3	15,306	40,440	15.7	15,706	40,750	17.0	17,007	45,062
2024	103,290	15.3	15,803	40,851	15.7	16,217	41,164	17.0	17,559	45,520
2025	106,647	15.3	16,317	41,210	15.7	16,744	41,526	17.0	18,130	45,920
2026	110,113	15.3	16,847	41,510	15.7	17,288	41,828	17.0	18,719	46,254
2027	113,692	15.3	17,395	41,745	15.7	17,850	42,064	17.0	19,328	46,515
2028	117,387	15.3	17,960	41,906	15.7	18,430	42,227	17.0	19,956	46,695
2029	121,202	15.3	18,544	41,986	15.7	19,029	42,308	17.0	20,604	46,784

Valuation Year	Estimated Projected Payroll	L-12 Benefit Program			LT-14(65) Benefit Program			L-6 Benefit Program		
		Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial	Estimated Employer Contribution		Unfunded Actuarial
		As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability	As a % of Payroll	Annual Dollars	Accrued Liability
2020	\$ 90,886	18.1%	\$16,450	\$ 45,782	18.8%	\$17,087	\$ 47,867	20.5%	\$18,632	\$ 52,317
2021	93,840	18.1	16,985	46,409	18.8	17,642	48,523	20.5	19,237	53,034
2022	96,890	18.1	17,537	46,994	18.8	18,215	49,135	20.5	19,862	53,703
2023	100,039	18.1	18,107	47,531	18.8	18,807	49,697	20.5	20,508	54,317
2024	103,290	18.1	18,695	48,014	18.8	19,419	50,202	20.5	21,174	54,869
2025	106,647	18.1	19,303	48,436	18.8	20,050	50,643	20.5	21,863	55,351
2026	110,113	18.1	19,930	48,789	18.8	20,701	51,012	20.5	22,573	55,754
2027	113,692	18.1	20,578	49,065	18.8	21,374	51,300	20.5	23,307	56,069
2028	117,387	18.1	21,247	49,255	18.8	22,069	51,498	20.5	24,064	56,286
2029	121,202	18.1	21,938	49,349	18.8	22,786	51,596	20.5	24,846	56,393

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.