

**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

Actuarial Valuation as of June 30, 2018

Prepared October 2018

**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Introduction and Purpose

In this report, we present the results of the June 30, 2018 actuarial valuation for the City of Springfield Police Officers' and Fire Fighters' Retirement System. The report has been prepared at the request of the System's Board for the sole use of the Board and the City of Springfield as the contributing plan sponsor.

PURPOSES OF THE VALUATION

The actuarial valuation of the Plan is intended to accomplish several purposes:

- Determine the recommended level of employer contributions for the City's July 1, 2019 – June 30, 2020 fiscal year;
- Prepare information required under applicable governmental accounting standards (results are provided in a separate report);
- Assess the relative funded position of the plan on an ongoing basis, i.e., through a comparison of plan assets and projected plan liabilities.

This work product was prepared solely for the City of Springfield for the purposes described herein and may not be appropriate to use for other purposes. Milliman does not intend to benefit and assumes no duty or liability to other parties who receive this work. Milliman recommends that third parties be aided by their own actuary or other qualified professional when reviewing the Milliman work product.

**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Actuarial Certification

As requested, we performed an actuarial valuation of the City of Springfield Police Officers' and Fire Fighters' Retirement System as of June 30, 2018 for the fiscal year ending June 30, 2020. Our findings are set forth in this actuary's report. This report reflects the benefit provisions and contribution rates in effect as of June 30, 2018.

In preparing this report, we relied, without audit, on information (some oral and some in writing) supplied by the City. This information includes, but is not limited to, statutory provisions, employee data, and financial information. We found this information to be reasonably consistent and comparable with information used for other purposes. The valuation results depend on the integrity of this information. If any of this information is inaccurate or incomplete our results may be different and our calculations may need to be revised.

All costs, liabilities, rates of interest, and other factors for the System have been determined on the basis of actuarial assumptions and methods which are individually reasonable (taking into account the experience of the System and reasonable expectations); and which, in combination, offer our best estimate of anticipated experience affecting the System.

This valuation report is only an estimate of the System's financial condition as of a single date. It can neither predict the System's future condition nor guarantee future financial soundness. Actuarial valuations do not affect the ultimate cost of System benefits, only the timing of System contributions. While the valuation is based on an array of individually reasonable assumptions, other assumption sets may also be reasonable and valuation results based on those assumptions would be different. No one set of assumptions is uniquely correct. Determining results using alternative assumptions is outside the scope of our engagement.

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; 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. Due to the limited scope of our assignment, we did not perform an analysis of the potential range of future measurements. The City has the final decision regarding the appropriateness of the assumptions and adopted them as indicated in this report.

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Actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. The calculations in the enclosed report have been made on a basis consistent with our understanding of the System's funding requirements and goals. Determinations for purposes other than meeting these requirements may be significantly different from the results contained in this report. Accordingly, additional determinations may be needed for other purposes.

Milliman's work is prepared solely for the internal business use of the City of Springfield. To the extent that Milliman's work is not subject to disclosure under applicable public records laws, Milliman's work may not be provided to third parties without Milliman's prior written consent. Milliman does not intend to benefit or create a legal duty to any third party recipient of its work product. Milliman's consent to release its work product to any third party may be conditioned on the third party signing a Release, subject to the following exception(s):

- (a) The City may provide a copy of Milliman's work, in its entirety, to the System's professional service advisors who are subject to a duty of confidentiality and who agree to not use Milliman's work for any purpose other than to benefit the System.
- (b) The City may provide a copy of Milliman's work, in its entirety, to other governmental entities, as required by law.

No third party recipient of Milliman's work product should rely upon Milliman's work product. Such recipients should engage qualified professionals for advice appropriate to their own specific needs.

The consultants who worked on this assignment are pension actuaries. Milliman's advice is not intended to be a substitute for qualified legal or accounting counsel.

The signing actuaries are independent of the plan sponsor. We are not aware of any relationship that would impair the objectivity of our work.

On the basis of the foregoing, we hereby certify that, to the best of our knowledge and belief, this report is complete and accurate and has been prepared in accordance with generally recognized and accepted actuarial principles and practices. We are members of the American Academy of Actuaries and meet the Qualification Standards to render the actuarial opinion contained herein.

We respectfully submit the following report, and we look forward to discussing it with you.

Sincerely,



Michael J. Zwiener, FSA
Consulting Actuary



Michael A. Sudduth, FSA
Consulting Actuary

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System
June 30, 2018 Actuarial Valuation**

Discussion of Valuation Results

1. Contribution Recommendation and Plan Experience

The results of this valuation are used to determine recommended contribution rates to the System for the July 1, 2019 - June 30, 2020 fiscal year. A comparison of recommended contribution rates (presented as a percentage of pay) for the current and immediately preceding valuations is shown below:

	<u>Actuarial Valuation as of</u>	
	<u>June 30, 2017</u>	<u>June 30, 2018</u>
Applies to Fiscal Year	07/01/18 - 06/30/19	07/01/19 - 06/30/20
Total Contribution Rate	91.52%	84.36%
Member Contribution Rate – Police	17.70% *	17.70% *
City Contribution Rate – Police	73.82%	66.66%
Member Contribution Rate – Fire	15.13% **	15.13% **
City Contribution Rate – Fire	76.39%	69.23%

* The Police Member's contribution rate is the sum of a flat 8.50% rate plus an Additional Funding Contribution (AFC). It increased from 6.13% to 9.20% of pay effective July 1, 2016. The next scheduled adjustment is July 1, 2019.

** The Fire Member's contribution rate is the sum of a flat 8.50% rate plus an AFC. The Fire AFC increased from 6.13% to 6.63% effective July 1, 2016. This rate will remain level until the earlier of July 1, 2029 or the date the Fire AFC UAL reaches zero, at which time it will cease.

The System experienced a net actuarial gain for the year ending June 30, 2018. A detailed reconciliation of the gain is shown below.

Unfunded Accrued Liability (UAL) as of June 30, 2017	\$88,062,904
Normal Cost as of June 30, 2017	5,482,874
Employer and Employee Contributions	(9,556,744)
Interest	<u>6,213,718</u>
Expected UAL as of June 30, 2018	\$90,202,752
Actual UAL as of June 30, 2018	70,739,363
(Gain)/Loss: Actual UAL – Expected UAL	(19,463,389)

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Sources of (Gain)/Loss:

Investment Return on Smoothed Assets	\$12,085,211
Other Contributions	(34,416,127)
Salary Scale/Active Data	436,374
Average Salary at Retirement	18,441
Retirement	2,245,055
Withdrawal	1,399,332
Disability	(635,035)
Death	1,751
Inactive Mortality	1,002,389
Terminated Vested Retirements	36,404
Other	<u>(1,637,184)</u>
Total	(\$19,463,389)

2. Plan Assets

The market value of assets increased from \$394,707,007 at June 30, 2017 to \$428,665,084 at June 30, 2018. A balance sheet and statement of income and disbursements are presented on pages 8 and 9, respectively. The net market rate of return was 4.6% for the period.

City contributions to the System for the year were \$6,578,099, employee contributions totaled \$2,978,645 and the sales tax revenue (including receivables) was \$33,237,631. Benefit payments total \$24,920,661 plus \$2,509,310 in refunded employee contributions.

The actuarial value of assets increased from \$403,438,824 at June 30, 2017 to \$435,525,104 at June 30, 2018. The net actuarial rate of return for the period was 4.1% vs. the assumed rate of 7.0%.

3. Actuarial Assumptions, Methods and Plan Provisions

All actuarial assumptions, methods and plan provisions remained the same as the prior year. Descriptions of these can be found on pages 15-20.

4. Plan Population

The number of active participants decreased from 256 in the previous valuation to 235 in the current valuation. The number of retirees and beneficiaries increased from 559 to 575. The number of deferred vested participants increased from 17 to 18.

5. GASB 67/68

Results under GASB 67 and 68 will be presented in a separate report.

6. Missouri Pension Reform Legislation

In 2007, and later modified in 2013, the Missouri legislature passed legislation aimed at the state's public sector pension plans. The legislation was based on private pension

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reform instituted at the federal level. Many of the provisions are applicable to the Springfield Police Officers' and Fire Fighters' Retirement System, including:

- Plans less than 60% funded are required to have an accelerated contribution schedule prepared by their actuary. Because the System's ratio is now over 60%, we have not prepared the schedule this year.
- Plans less than 60% funded that have contributed less than 100% of the required contribution for 5 consecutive years and have a declining funded ratio shall have state funds withheld.
- Plans less than 80% funded are prohibited from providing benefit enhancements, and plans over 80% funded may only provide benefit increases that allow the funded ratio to remain over 75%.
- Benefit increases must be amortized over 20 years.
- Increased fiduciary responsibility and education requirements.

7. Additional Comments

Retirement plans use several mechanisms to attempt to provide more stability in contribution levels, one of which is an asset smoothing method. This System utilizes a method that compares the expected return on assets with the return actually experienced. One quarter of the difference between expected and actual return (positive or negative) is recognized in the current year and each of the next three years. Due to the smoothing method, the rate of return on the actuarial value of assets for the year ending June 30, 2018 was 4.1% as compared to 4.6% on a pure market value basis.

Use of an asset smoothing method is a common practice for public sector retirement plans. However, it is important to identify the potential impact of the deferred investment experience. Key June 30, 2018 actuarial valuation results are shown below using both the actuarial value of assets and pure market value:

	<u>June 30, 2018 Results</u>	
	<u>Using Actuarial Value of Assets</u>	<u>Using Market Value of Assets</u>
Actuarial Liability	\$506,264,467	\$506,264,467
Asset Value	435,525,104	428,665,084
Unfunded Actuarial Liability	\$70,739,363	\$77,599,383
Funded Ratio	86.0%	84.7%
Total Contribution Rate	84.36%	89.40%
Member Contribution Rate – Police	17.70%	17.70%
City Contribution Rate – Police	66.66%	71.70%
Member Contribution Rate – Fire	15.13%	15.13%
City Contribution Rate – Fire	69.23%	74.27%

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Summary of Valuation Results

	<u>Valuation Date June 30, 2015</u>	<u>Valuation Date June 30, 2016</u>	<u>Valuation Date June 30, 2017</u>	<u>Valuation Date June 30, 2018</u>
Participant Counts				
<u>Police</u>				
Actives	168	157	148	136
Receiving Payments	257	266	272	280
Terminated Vesteds	<u>16</u>	<u>15</u>	<u>15</u>	<u>17</u>
Total	441	438	435	433
<u>Fire</u>				
Actives	133	120	108	99
Receiving Payments	273	281	287	295
Terminated Vesteds	<u>2</u>	<u>2</u>	<u>2</u>	<u>1</u>
Total	408	403	397	395
Market Value of Assets	322,533,580	343,287,402	394,707,007	428,665,084
Actuarial Value of Assets	332,360,279	367,311,417	403,438,824	435,525,104
Present Value of Future Benefits	492,111,855	518,335,047	525,573,540	537,184,500
Entry Age Normal Accrued Liability	452,710,859	479,883,569	491,501,728	506,264,467
Unfunded Entry Age Normal Accrued Liability	120,350,580	112,572,152	88,062,904	70,739,363
Recommended Contribution (Employer and Employee)	18,965,701	18,657,544	15,866,914	13,994,359
Covered Payroll	18,844,060	19,031,138	17,337,474	16,588,735
Funded Ratio	73.4%	76.5%	82.1%	86.0%
Recommended Contribution as a Percentage of Covered Payroll - Police				
Member Portion	14.63%	17.70%	17.70%	17.70%
City Portion	<u>86.02%</u>	<u>80.34%</u>	<u>73.82%</u>	<u>66.66%</u>
Total	100.65%	98.04%	91.52%	84.36%
Recommended Contribution as a Percentage of Covered Payroll - Fire				
Member Portion	14.63%	15.13%	15.13%	15.13%
City Portion	<u>86.02%</u>	<u>82.91%</u>	<u>76.39%</u>	<u>69.23%</u>
Total	100.65%	98.04%	91.52%	84.36%
Present Value of Accrued Benefits	428,624,372	450,924,195	468,908,740	486,457,060

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Statement of Assets as of June 30, 2018

<u>Assets</u>	<u>Market Value</u>
1. Cash and Short Term Investments	\$10,236,016
2. Investments at Fair Market Value	412,269,768
3. Accrued Interest Receivable	702,514
4. Due from Other Funds	5,699,194
Total Assets	428,907,492
 <u>Liabilities</u>	
1. Accounts Payable	239,778
2. Due to Other Funds	2,630
Total Liabilities	242,408
 Net Assets	 <u>428,665,084</u>

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Statement of Income and Disbursements

1. Market Value of Assets as of July 1, 2017	\$394,707,007
2. Income:	
a. Employer Contributions	6,256,537
b. Employer Contributions for Fire AFC	321,562
c. Employee Contributions	2,978,645
d. Public Safety Sales Tax	33,237,631
e. Sale of Land	14,666
f. Donations	0
g. Other Revenue	309
h. Interest and Dividends	101,040
i. Net Appreciation/(Depreciation) in Fair Value	<u>20,736,677</u>
j. Total Income	63,647,067
3. Expenses:	
a. Employee Benefit Distributions	24,920,661
b. Refund of Employee Contributions	2,509,310
c. Administrative Expenses	387,743
d. Investment Expenses	<u>1,871,276</u>
e. Total Expenses	29,688,990
4. Net Increase (Decrease) = (2j) - (3e)	33,958,077
5. Market Value of Assets as of June 30, 2018 = (1) + (4)	\$428,665,084
6. Net Rate of Return	4.6%

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Development of Actuarial Value of Assets

	Valuation Date <u>June 30, 2018</u>
1. Actuarial Value Beginning of Year	\$403,438,824
2. Market Value End of Year	428,665,084
3. Market Value Beginning of Year	394,707,007
4. Non-Investment Cash Flows ⁽¹⁾	15,379,379
5. Investment Income	
a. Market Total: (2) - (3) - (4)	18,578,698
b. Assumed Rate of Return	7.00%
c. Amount for Immediate Recognition ⁽²⁾	28,167,769
d. Amount for Phased-In Recognition: (5a) - (5c)	(9,589,071)
6. Phased-In Recognition of Investment Income	
a. Current Year: .25 x (5d)	(2,397,268)
b. First Prior Year	2,652,800
c. Second Prior Year	(4,973,811)
d. Third Prior Year	<u>(6,742,589)</u>
e. Phased-In Investment Gain Recognized	(11,460,868)
7. Actuarial Value End of Year: (1) + (4) + (5c) + (6e)	435,525,104
8. Excess of Market Value over Actuarial Value: (2) - (7)	(6,860,020)
9. Approximate Rate of Return on Actuarial Value	4.1%

⁽¹⁾ Contributions minus benefit payments

⁽²⁾ Assumed Rate times (3) + Assumed Rate/2 times (4)

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City of Springfield
Police Officers and Fire Fighters' Retirement Fund
June 30, 2018 Actuarial Valuation

Development of Market Value of Assets for 0.3% Multiplier

	<u>Police</u>	<u>Fire</u>	<u>Total</u>
1. Market Value of Assets as of July 1, 2017	\$9,940,484	\$5,975,307	\$15,915,791
2. a. Employer Contributions	0	321,562	321,562
b. Employee Contributions	923,766	526,456	1,450,222
c. Net Investment Income	<u>513,151</u>	<u>310,096</u>	<u>823,247</u>
d. Total Income	1,436,917	1,158,114	2,595,031
3. a. Benefit Distributions and Refunds of Employee Contributions	<u>1,030,112</u>	<u>848,880</u>	<u>1,878,992</u>
b. Total Expenses	1,030,112	848,880	1,878,992
4. Net Increase (Decrease): (2d) - (3b)	406,805	309,234	716,039
5. Market Value of Assets as of June 30, 2018: (1) + (4)	\$10,347,289	\$6,284,541	\$16,631,830

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**City of Springfield
Police Officers and Fire Fighters' Retirement Fund**

June 30, 2018 Actuarial Valuation

Development of Actuarial Assets and Unfunded Accrued Liability for 0.3% Multiplier

	<u>Police</u>	<u>Fire</u>	<u>Total</u>
1. Actuarial Value Beginning of Year	\$10,119,008	\$6,088,827	\$16,207,835
2. Market Value End of Year	10,347,289	6,284,541	16,631,830
3. Market Value Beginning of Year	9,940,484	5,975,307	15,915,791
4. Non-Investment Cash Flows (Contributions minus Benefit Payments)	(106,346)	(862)	(107,208)
5. Investment Income			
a. Market Total: (2) - (3) - (4)	513,151	310,096	823,247
b. Assumed Rate of Return	7.00%	7.00%	7.00%
c. Amount for Immediate Recognition: (3) x (5b) + (4) x (5b) / 2	692,112	418,241	1,110,353
d. Amount for Phased-In Recognition: (5a) - (5c)	(178,961)	(108,145)	(287,106)
6. Phased-In Recognition of Investment Income			
a. Current Year: .25 x (5d)	(44,740)	(27,036)	(71,776)
b. First Prior Year	80,967	48,832	129,799
c. Second Prior Year	(121,489)	(74,572)	(196,061)
d. Third Prior Year	<u>(178,446)</u>	<u>(110,872)</u>	<u>(289,318)</u>
e. Phased-In Investment Gain Recognized	(263,708)	(163,648)	(427,356)
7. Actuarial Value End of Year: (1) + (4) + (5c) + (6e)	10,441,066	6,342,558	16,783,624
8. Excess of Market Value over Actuarial Value:	(93,777)	(58,017)	(151,794)
9. Entry Age Normal Accrued Liability for 0.3% Multiplier	17,283,269	11,871,041	29,154,310
10. Unfunded Entry Age Normal Accrued Liability for 0.3% Multiplier: (9) - (7)	6,842,203	5,528,483	12,370,686

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Actuarial Balance Sheet

The key elements of the actuarial funding process are illustrated in the Actuarial Balance Sheet. The format of the balance sheet captures the essential purpose of an actuarial cost method - the determination of assets sufficient to provide for pension benefits.

The Actuarial Present Value of Current and Prospective Plan Benefits is the liability that must be balanced by Current and Prospective assets. The Present Value of Future Normal Cost Contributions represents the prospective assets from contributions that will be made for costs allocated to the future.

June 30, 2018

Liabilities

1. Actuarial Present Value of Future Benefits	
a. Active Participants	\$174,208,473
b. Terminated Vested Participants	4,248,376
c. Retired Participants	<u>358,727,651</u>
d. Total	537,184,500

Assets

1. Current Valuation Assets	
a. Actuarial Value of Assets	435,525,104
2. Prospective Valuation Assets	
a. Unfunded Actuarial Liability	70,739,363
b. Present Value of Future Normal Cost Contributions	<u>30,920,033</u>
3. Total	537,184,500

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Development of Recommended Contribution

1. Present Value of Future Benefits		
a. Active Participants		\$174,208,473
b. Terminated Vested Participants		4,248,376
c. Retired Participants		<u>358,727,651</u>
d. Total		537,184,500
2. Present Value of Future Normal Costs		30,920,033
3. Actuarial Value of Assets		435,525,104
4. Entry Age Unfunded Accrued Liability: (1d) - (2) - (3)		70,739,363
5. Entry Age Normal Cost		5,379,458
6. Present Value of Future Earnings		100,705,071
7. Payroll		16,588,735
8. Amortization Payment (Level Dollar 20 Year Closed Period from July 1, 2010) 12 years as of July 1, 2018		8,614,901
9. Recommended Contribution: (5) + (8)		13,994,359
10. Recommended Contribution as a Percentage of Payroll		
Normal Cost		32.43%
Amortization Payment		<u>51.93%</u>
Total		84.36%
	<u>Police</u>	<u>Fire</u>
11. Member Portion	17.70%	15.13%
12. City Portion	66.66%	69.23%

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Actuarial Methods

Following are brief descriptions of the actuarial cost and asset valuation methods used in the valuation:

Actuarial Cost Method

The Entry Age Normal Cost Method on an individual basis is used. Normal costs are computed as a level percentage of pay.

The Unfunded Entry Age Accrued Liability is amortized as a level dollar amount over a 20 year closed period measured from June 30, 2010. Each year, the amortization period will decrease by 1 until it reaches 0 years as of June 30, 2030.

Asset Valuation Method

An asset valuation method is used to help smooth short term fluctuations in market value.

The actuarial value of assets is equal to the prior years actuarial value of assets adjusted as follows:

1. increased with actual contributions for the year;
2. reduced by actual benefit payments and expenses for the year;
3. increased by investment income equal to the assumed rate of return multiplied by the beginning market value;
4. increased by phased in investment gains /(losses)

Each year, the amount of investment income to be phased in is equal to the excess of the plan's actual investment performance in excess of the amount credited under item 3) above. 25% of this amount plus 25% of the similar amounts calculated in each of the three preceding years are summed and recognized as the amount of phased-in gains recognized in the current year. There is no specific corridor around market value in which the resulting value must fall.

The actuarial value of assets was reset to the market value of assets for the June 30, 2007 valuation.

**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Actuarial Assumptions

Following are the primary actuarial assumptions used in performing the valuation:

Interest Rate (effective July 1, 2014)

7.00% per annum, net of investment expenses

Annual Pay Increases (effective July 1, 2014)

<u>Years of Service</u>	<u>Fire</u>	<u>Police</u>
1	7.0%	7.0%
2	7.0%	7.0%
3	7.0%	7.0%
4	7.0%	7.0%
5	7.0%	7.0%
6	7.0%	7.0%
7	4.0%	7.0%
8	4.0%	7.0%
9	4.0%	4.0%
10	4.0%	4.0%
11	2.5%	4.0%
12	2.5%	4.0%
13 and later	2.5%	2.5%

Final Average Salary Adjustment (effective July 1, 2014)

For Fire Members, the Average Salary at retirement is increased by a factor of 1.09 for Members 40 and older and a factor of 1.03 for Members younger than 40.

For Police Members, the Average Salary at retirement is increased to reflect the assumption that each participant will have the maximum accrual paid out from their continuous operating holiday balance. For Members 40 and older, the maximum accrual amount is quadrupled.

Mortality (effective July 1, 2014)

RP-2000 Employees and Healthy Annuitant Mortality Tables, male and female rates, with generational projection based on Scale AA and RP-2000 Disabled Mortality Table, male and female rates

Active deaths are assumed to be 50% duty related and 50% non-duty related.

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Turnover

Separation from service for reasons other than disability, death, or age/service retirement. Rate at selected ages are:

<u>Age</u>	<u>Percentage Terminating in the next Year</u>	
	<u>Police</u>	<u>Fire</u>
25	5.27%	1.75%
30	4.83%	1.61%
35	4.47%	1.49%
40	3.84%	1.28%
45	3.21%	1.07%
50	1.52%	0.51%
55	0.33%	0.11%

Forfeiture of City Provided Benefit

A vested member who terminates employment may elect to receive a return of his/her own contributions (ROC) and forfeit any City-provided benefit. The portion of members making such election at selected ages are:

<u>Age</u>	<u>Percentage Electing ROC</u>
35 and under	100%
36 - 54	grading from 95% to 5%
55 and over	0%

Rate of Disability

Probability of becoming disabled during the next year. Rates at selected ages are:

<u>Age</u>	<u>Percentage Becoming Disabled in the Next Year</u>
20	0.25%
25	0.29%
30	0.34%
35	0.43%
40	0.58%
45	0.89%
50	1.86%
55	3.80%

100% of all disabilities are assumed to be duty related.

The Workers Compensation offset to the plan disability benefit is assumed to be zero.

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Rates of Retirement (effective July 1, 2014)

Probability of an eligible member retiring under the age/service provisions during the next year.

Rates are as follows:

<u>Age</u>	<u>Percentage of Members Eligible for Retirement Assumed to Retire during Year</u>
45	25%
46	25%
47	25%
48	25%
49	25%
50	25%
51	20%
52	20%
53	20%
54	25%
55	50%
56	50%
57	50%
58	50%
59	50%
60	100%

Dependent Information

For retired members, actual marital status and spouse birth dates are used. For active members, 90% are assumed to be married, with males assumed three years older than their spouses. Members are assumed to have no dependent children.

Cost-of-Living Adjustment (COLA)

Automatic 3% COLA reflected

**City of Springfield
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June 30, 2018 Actuarial Valuation

Summary of Plan Provisions

A summary of the current primary provisions of the System are described below. A complete description of the provisions can be found in Sections 2-441 through 2-483 of the Springfield City Code as amended through General Ordinance 6287 adopted June 27, 2016.

Average Salary

Average of the highest three years salary within the last 10 Years of Service. Salary for this calculation is equal to actual salary before deductions, plus payments for unused floating holidays, unused compensatory time, scheduled holidays, Kelly days, pin days and accrued vacation time.

Normal Retirement Age

Eligibility for unreduced benefits upon meeting any of the following:

- Age 50 and 20 Years of Service,
- 25 Years of Service, or
- Age 60.

Age/Service Benefit

A monthly benefit equal to 1/12 of Average Salary times 2.8% times Years of Service. The maximum benefit is 70% of Average Salary.

Normal Form of Payment

The benefit is payable for the member's lifetime. If the member should predecease his/her spouse, the spouse is entitled to a lifetime survivors benefit. The amount of the benefit is a percentage of the Average Salary. The percentage is equal to 25% plus 1-1/8% for each Year of Service over five years, not to exceed 50% in total. There are no optional forms of payment.

Cost of Living Adjustment (COLA)

Every July 1st, the monthly pension is increased by 3% for the following groups of retirees provided pension payment has been paid at least 12 months prior to July 1:

- Age/service retirees age 56 or greater
- Disability retirees of any age

Early Retirement Age

Eligibility for early retirement is satisfied upon attainment of age 55 and completion of five Years of Service.

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Early Retirement Benefit

Determined using regular formula and reducing the result 1/200 for each month by which the benefit start date precedes age 60.

Member Contributions

17.70% of pay for Police Members and 15.13% of pay for Fire Members

Duty Disability

All members are eligible. The monthly benefit is equal to 2/3 of the salary in effect at the time of retirement.

Non-Duty Disability

Employees hired on or before January 1, 2005: A monthly benefit equal to 2.45% of Average Salary times Years of Service. A member must have three Years of Service to be eligible.

Employees hired after January 1, 2005 and before June 1, 2006: A monthly benefit equal to 2.45% of Average Salary times Years of Service. A member must have five Years of Service to be eligible.

In all cases, the minimum/maximum benefits are 25%/50% of Average Salary.

Duty Death in Service

All members are eligible. A monthly benefit to the spouse equal to 50% of salary in effect at time of death. Additional benefits to unmarried children under age 18, but total cannot exceed 75% of pre-death salary.

Non-Duty Death in Service

A member is eligible after completing five Years of Service. The benefit is 25% of Average Salary plus 1 1/8% of Average Salary for each Year of Service in excess of five, not to exceed 50%. Additional benefits to unmarried children under 18 but total benefit cannot exceed 60% of Average Salary.

Return of Contributions

Member contributions are returned to age/service retirees and disability retirees upon commencement of monthly benefits, without interest.

Vested members who terminate before eligible for retirement may elect to receive a return of their own contributions without interest. Election of this benefit results in a forfeiture of any City provided benefit.

Eligibility

The Plan is now closed to new employees. Members hired on or after June 1, 2006 have been removed from the Plan and are currently participants in the LAGERS Pension System. Their contributions in this Plan have been refunded, and they are no longer due any benefits. Members hired before June 1, 2006 will continue to earn benefits under the Plan as described above.

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Summary of Participant Data

	<u>Police</u> <u>June 30, 2018</u>	<u>Fire</u> <u>June 30, 2018</u>
1. Active Participants		
a. Count	136	99
b. Plan Compensation	9,897,875	6,760,775
c. Average Compensation	72,778	68,291
d. Average Age	44.6	45.7
e. Average Service	18.5	18.4
2. Retired Participants (including Beneficiaries)		
a. Count	280	295
b. Total Monthly Benefits	\$1,070,934	\$1,089,957
c. Average Monthly Benefits	\$3,825	\$3,695
d. Average Age at Onset of Disability Retirements	40.3	46.1
3. Terminated Vested Participants		
a. Count	17	1
b. Total Monthly Benefits	\$32,756	\$3,442
c. Average Monthly Benefits	\$1,927	\$3,442

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Retiree and Beneficiary Distributions

**Fire
Distribution of Age and Service Retirees**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	0	\$0	\$0
45 – 49	1	3,726	3,726
50 – 54	21	85,854	4,088
55 – 59	29	126,227	4,353
60 – 64	24	94,734	3,947
65 – 69	28	136,851	4,888
70 – 74	25	105,847	4,234
75 – 79	26	98,694	3,796
80 +	<u>19</u>	<u>70,800</u>	<u>3,726</u>
Totals	173	\$722,733	\$4,178

**Police
Distribution of Age and Service Retirees**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	0	\$0	\$0
45 – 49	3	16,725	5,575
50 – 54	33	152,394	4,618
55 – 59	37	164,719	4,452
60 – 64	25	107,426	4,297
65 – 69	29	130,551	4,502
70 – 74	23	96,025	4,175
75 – 79	14	52,084	3,720
80 +	<u>13</u>	<u>41,572</u>	<u>3,198</u>
Totals	177	\$761,496	\$4,302

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Retiree and Beneficiary Distributions

**Fire
Distribution of Disability Retirees**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	1	\$2,752	\$2,752
45 – 49	4	9,943	2,486
50 – 54	4	11,160	2,790
55 – 59	9	32,016	3,557
60 – 64	7	26,663	3,809
65 – 69	8	31,208	3,901
70 – 74	15	55,478	3,699
75 – 79	7	25,288	3,613
80 +	<u>4</u>	<u>11,693</u>	<u>2,923</u>
Totals	59	\$206,201	\$3,495

**Police
Distribution of Disability Retirees**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	4	\$10,929	\$2,732
45 – 49	7	22,068	3,153
50 – 54	3	6,943	2,314
55 – 59	16	54,401	3,400
60 – 64	10	36,969	3,697
65 – 69	9	33,294	3,699
70 – 74	6	18,249	3,042
75 – 79	3	9,600	3,200
80 +	<u>2</u>	<u>6,884</u>	<u>3,442</u>
Totals	60	\$199,337	\$3,322

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Retiree and Beneficiary Distributions

**Fire
Distribution of Beneficiaries**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	1	\$2,231	\$2,231
45 – 49	2	5,059	2,530
50 – 54	1	3,431	3,431
55 – 59	1	1,848	1,848
60 – 64	4	8,181	2,045
65 – 69	6	17,973	2,996
70 – 74	13	32,315	2,486
75 – 79	8	21,960	2,745
80 +	<u>27</u>	<u>68,025</u>	<u>2,519</u>
Totals	63	\$161,023	\$2,556

**Police
Distribution of Beneficiaries**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	1	\$2,673	\$2,673
45 – 49	0	0	0
50 – 54	2	4,759	2,380
55 – 59	2	5,903	2,952
60 – 64	3	11,608	3,869
65 – 69	9	20,049	2,228
70 – 74	6	13,028	2,171
75 – 79	9	23,577	2,620
80 +	<u>11</u>	<u>28,506</u>	<u>2,591</u>
Totals	43	\$110,103	\$2,561

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Distribution of Active Police Participants by Age and by Years of Service
(as of June 30, 2018)

Attained Age	YEARS OF CREDITED SERVICE										Total	
	Under 1 No.	1 to 4 No.	5 to 9 No.	10 to 14 No.	15 to 19 No.	20 to 24 No.	25 to 29 No.	30 to 34 No.	35 to 39 No.	40 and up No.		
Under 25	0	0	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	0	0	0	0	0	0	0	0	0
35 to 39	0	0	0	12	9	0	0	0	0	0	0	21
40 to 44	0	0	0	3	37	12	0	0	0	0	0	52
45 to 49	0	0	0	5	22	24	0	0	0	0	0	51
50 to 54	0	0	0	0	4	5	0	0	0	0	0	9
55 to 59	0	0	0	0	3	0	0	0	0	0	0	3
60 to 64	0	0	0	0	0	0	0	0	0	0	0	0
65 to 69	0	0	0	0	0	0	0	0	0	0	0	0
70 and up	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	20	75	41	0	0	0	0	0	136

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**City of Springfield
Police Officers' and Fire Fighters' Retirement System**

June 30, 2018 Actuarial Valuation

Distribution of Active Fire Participants by Age and by Years of Service
(as of June 30, 2018)

Attained Age	YEARS OF CREDITED SERVICE										Total	
	Under 1	1 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 and up		
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
Under 25	0	0	0	0	0	0	0	0	0	0	0	0
25 to 29	0	0	0	0	0	0	0	0	0	0	0	0
30 to 34	0	0	0	3	0	0	0	0	0	0	0	3
35 to 39	0	0	0	10	2	1	0	0	0	0	0	13
40 to 44	0	0	0	4	11	7	0	0	0	0	0	22
45 to 49	0	0	0	7	17	24	0	0	0	0	0	48
50 to 54	0	0	0	2	3	6	0	0	0	0	0	11
55 to 59	0	0	0	0	0	2	0	0	0	0	0	2
60 to 64	0	0	0	0	0	0	0	0	0	0	0	0
65 to 69	0	0	0	0	0	0	0	0	0	0	0	0
70 and up	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	26	33	40	0	0	0	0	0	99

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**City of Springfield
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June 30, 2018 Actuarial Valuation

Summary of Changes in Participant Data

	<u>Active Participants</u>	<u>Retired Participants</u>	<u>Terminated Vested Participants</u>	<u>Total</u>
Count as of July 1, 2017	256	559	17	832
New Entrants	0	0	0	0
Rehires	0	0	0	0
Age and Service Retirements	(18)	19	(1)	0
Duty Disability Retirements	0	0	0	0
Non-Duty Disability Retirements	0	0	0	0
Duty Related Deaths	0	0	0	0
Non-Duty Related Deaths	0	0	0	0
Vested Terminations - Received Refund	0	0	0	0
Vested Terminations - No Refund	(2)	0	2	0
Nonvested Terminations - Received Refund	(1)	0	0	(1)
Nonvested Terminations - No Refund	0	0	0	0
Deceased with Beneficiary	0	(8)	0	(8)
New Beneficiaries	0	8	0	8
Deceased without Beneficiary	0	(3)	0	(3)
Received Refund	0	0	0	0
Alternate Payee No Longer Due a Benefit	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Changes	<u>(21)</u>	<u>16</u>	<u>1</u>	<u>(4)</u>
Count as of June 30, 2018	<u>235</u>	<u>575</u>	<u>18</u>	<u>828</u>

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