

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

**Actuarial Valuation as of June 30, 2017**

**Prepared October 2017**

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

**June 30, 2017 Actuarial Valuation**

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

**June 30, 2017 Actuarial Valuation**

**Introduction and Purpose**

In this report, we present the results of the June 30, 2017 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, 2018 – June 30, 2019 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.

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

**June 30, 2017 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, 2017 for the fiscal year ending June 30, 2019. 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, 2017.

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, 2017 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, 2018 - June 30, 2019 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, 2016</u>	<u>June 30, 2017</u>
Applies to Fiscal Year	07/01/17 - 06/30/18	07/01/18 - 06/30/19
Total Contribution Rate	98.04%	91.52%
Member Contribution Rate – Police	17.70% *	17.70% *
City Contribution Rate – Police	80.34%	73.82%
Member Contribution Rate – Fire	15.13% **	15.13% **
City Contribution Rate – Fire	82.91%	76.39%

\* 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, 2017. A detailed reconciliation of the gain is shown below.

Unfunded Accrued Liability (UAL) as of June 30, 2016	\$112,572,152
Normal Cost as of June 30, 2016	5,996,654
Employer and Employee Contributions	(10,146,027)
Interest	<u>7,952,717</u>
Expected UAL as of June 30, 2017	\$116,375,496
Actual UAL as of June 30, 2017	88,062,904
(Gain)/Loss: Actual UAL – Expected UAL	(28,312,592)

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Sources of (Gain)/Loss:

Investment Return on Smoothed Assets	\$6,328,632
Other Contributions	(33,377,998)
Salary Scale/Active Data	(3,101,997)
Average Salary at Retirement	(323,301)
Retirement	(1,567,190)
Withdrawal	1,762,815
Disability	(792,574)
Death	(7,155)
Inactive Mortality	2,835,322
Terminated Vested Refunds	(69,165)
Other	<u>19</u>
Total	(\$28,312,592)

2. Plan Assets

The market value of assets increased from \$343,287,402 at June 30, 2016 to \$394,707,007 at June 30, 2017. A balance sheet and statement of income and disbursements are presented on pages 8 and 9, respectively. The net market rate of return was 10.0% for the period.

City contributions to the System for the year were \$6,974,401, employee contributions totaled \$3,171,626 and the sales tax revenue (including receivables) was \$32,264,970. Benefit payments total \$23,459,435 plus \$2,765,114 in refunded employee contributions.

The actuarial value of assets increased from \$367,311,417 at June 30, 2016 to \$403,438,824 at June 30, 2017. The net actuarial rate of return for the period was 5.3% 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 277 in the previous valuation to 256 in the current valuation. The number of retirees and beneficiaries increased from 547 to 559. The number of deferred vested participants remained at 17.

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, 2017 was 5.3% as compared to 10.0% 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, 2017 actuarial valuation results are shown below using both the actuarial value of assets and pure market value:

	June 30, 2017 Results	
	Using Actuarial Value of Assets	Using Market Value of Assets
Actuarial Liability	\$491,501,728	\$491,501,728
Asset Value	403,438,824	394,707,007
Unfunded Actuarial Liability	\$88,062,904	\$96,794,721
Funded Ratio	82.1%	80.3%
Total Contribution Rate	91.52%	97.35%
Member Contribution Rate – Police	17.70%	17.70%
City Contribution Rate – Police	73.82%	79.65%
Member Contribution Rate – Fire	15.13%	15.13%
City Contribution Rate – Fire	76.39%	82.22%

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

**June 30, 2017 Actuarial Valuation**

**Summary of Valuation Results**

	<u>Valuation Date June 30, 2014</u>	<u>Valuation Date June 30, 2015</u>	<u>Valuation Date June 30, 2016</u>	<u>Valuation Date June 30, 2017</u>
<b>Participant Counts</b>				
<u>Police</u>				
Actives	180	168	157	148
Receiving Payments	248	257	266	272
Terminated Vesteds	<u>16</u>	<u>16</u>	<u>15</u>	<u>15</u>
Total	444	441	438	435
<u>Fire</u>				
Actives	140	133	120	108
Receiving Payments	271	273	281	287
Terminated Vesteds	<u>2</u>	<u>2</u>	<u>2</u>	<u>2</u>
Total	413	408	403	397
Market Value of Assets	309,653,460	322,533,580	343,287,402	394,707,007
Actuarial Value of Assets	296,704,412	332,360,279	367,311,417	403,438,824
Present Value of Future Benefits	471,222,063	492,111,855	518,335,047	525,573,540
Entry Age Normal Accrued Liability	430,036,714	452,710,859	479,883,569	491,501,728
Unfunded Entry Age Normal Accrued Liability	133,332,302	120,350,580	112,572,152	88,062,904
Recommended Contribution (Employer and Employee)	19,863,847	18,965,701	18,657,544	15,866,914
Covered Payroll	18,770,274	18,844,060	19,031,138	17,337,474
Funded Ratio	69.0%	73.4%	76.5%	82.1%
<b>Recommended Contribution as a Percentage of Covered Payroll - Police</b>				
Member Portion	14.63%	14.63%	17.70%	17.70%
City Portion	<u>91.20%</u>	<u>86.02%</u>	<u>80.34%</u>	<u>73.82%</u>
Total	105.83%	100.65%	98.04%	91.52%
<b>Recommended Contribution as a Percentage of Covered Payroll - Fire</b>				
Member Portion	14.63%	14.63%	15.13%	15.13%
City Portion	<u>91.20%</u>	<u>86.02%</u>	<u>82.91%</u>	<u>76.39%</u>
Total	105.83%	100.65%	98.04%	91.52%
Present Value of Accrued Benefits	407,320,340	428,624,372	450,924,195	468,908,740

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**City of Springfield**  
**Police Officers' and Fire Fighters' Retirement System**  
**June 30, 2017 Actuarial Valuation**

**Statement of Assets as of June 30, 2017**

<u>Assets</u>	<u>Market Value</u>
1. Cash and Short Term Investments	\$5,630,294
2. Investments at Fair Market Value	383,190,376
3. Accrued Interest Receivable	612,341
4. Due from Other Funds	5,422,279
Total Assets	394,855,290
 <u>Liabilities</u>	
1. Accounts Payable	148,283
Total Liabilities	148,283
 Net Assets	 <u>394,707,007</u>

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

**June 30, 2017 Actuarial Valuation**

**Statement of Income and Disbursements**

1. Market Value of Assets as of July 1, 2016	\$343,287,402
2. Income:	
a. Employer Contributions	6,682,483
b. Employer Contributions for Fire AFC	291,918
c. Employee Contributions	3,171,626
d. Public Safety Sales Tax	32,264,970
e. Sale of Land	11,728
f. Donations	0
g. Other Revenue	12,731
h. Interest and Dividends	84,718
i. Net Appreciation/(Depreciation) in Fair Value	<u>37,089,715</u>
j. Total Income	79,609,889
3. Expenses:	
a. Employee Benefit Distributions	23,459,435
b. Refund of Employee Contributions	2,765,114
c. Administrative Expenses	377,509
d. Investment Expenses	<u>1,588,226</u>
e. Total Expenses	28,190,284
4. Net Increase (Decrease) = (2j) - (3e)	51,419,605
5. Market Value of Assets as of June 30, 2017	\$394,707,007
= (1) + (4)	
6. Net Rate of Return	10.0%

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

**June 30, 2017 Actuarial Valuation**

**Development of Actuarial Value of Assets**

	Valuation Date <u>June 30, 2017</u>
1. Actuarial Value Beginning of Year	\$367,311,417
2. Market Value End of Year	394,707,007
3. Market Value Beginning of Year	343,287,402
4. Non-Investment Cash Flows <sup>(1)</sup>	16,210,907
5. Investment Income	
a. Market Total: (2) - (3) - (4)	35,208,698
b. Assumed Rate of Return	7.00%
c. Amount for Immediate Recognition <sup>(2)</sup>	24,597,500
d. Amount for Phased-In Recognition: (5a) - (5c)	10,611,198
6. Phased-In Recognition of Investment Income	
a. Current Year: .25 x (5d)	2,652,800
b. First Prior Year	(4,973,811)
c. Second Prior Year	(6,742,589)
d. Third Prior Year	<u>4,382,600</u>
e. Phased-In Investment Gain Recognized	(4,681,000)
7. Actuarial Value End of Year: (1) + (4) + (5c) + (6e)	403,438,824
8. Excess of Market Value over Actuarial Value: (2) - (7)	(8,731,817)
9. Approximate Rate of Return on Actuarial Value	5.3%

<sup>(1)</sup> Contributions minus benefit payments

<sup>(2)</sup> 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, 2017 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, 2016	\$8,954,090	\$5,420,226	\$14,374,316
2. a. Employer Contributions	0	291,918	291,918
b. Employee Contributions	980,904	562,850	1,543,754
c. Net Investment Income	<u>951,861</u>	<u>574,078</u>	<u>1,525,939</u>
d. Total Income	1,932,765	1,428,846	3,361,611
3. a. Benefit Distributions and Refunds of Employee Contributions	<u>946,371</u>	<u>873,765</u>	<u>1,820,136</u>
b. Total Expenses	946,371	873,765	1,820,136
4. Net Increase (Decrease): (2d) - (3b)	986,394	555,081	1,541,475
5. Market Value of Assets as of June 30, 2017: (1) + (4)	\$9,940,484	\$5,975,307	\$15,915,791

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

**June 30, 2017 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	\$9,531,760	\$5,777,421	\$15,309,181
2. Market Value End of Year	9,940,484	5,975,307	15,915,791
3. Market Value Beginning of Year	8,954,090	5,420,226	14,374,316
4. Non-Investment Cash Flows (Contributions minus Benefit Payments)	34,533	(18,997)	15,536
5. Investment Income			
a. Market Total: (2) - (3) - (4)	951,861	574,078	1,525,939
b. Assumed Rate of Return	7.00%	7.00%	7.00%
c. Amount for Immediate Recognition: (3) x (5b) + (4) x (5b) / 2	627,995	378,751	1,006,746
d. Amount for Phased-In Recognition: (5a) - (5c)	323,866	195,327	519,193
6. Phased-In Recognition of Investment Income			
a. Current Year: .25 x (5d)	80,967	48,832	129,799
b. First Prior Year	(121,489)	(74,572)	(196,061)
c. Second Prior Year	(178,446)	(110,872)	(289,318)
d. Third Prior Year	<u>143,688</u>	<u>88,264</u>	<u>231,952</u>
e. Phased-In Investment Gain Recognized	(75,280)	(48,348)	(123,628)
7. Actuarial Value End of Year: (1) + (4) + (5c) + (6e)	10,119,008	6,088,827	16,207,835
8. Excess of Market Value over Actuarial Value:	(178,524)	(113,520)	(292,044)
9. Entry Age Normal Accrued Liability for 0.3% Multiplier	15,474,150	11,180,565	26,654,715
10. Unfunded Entry Age Normal Accrued Liability for 0.3% Multiplier: (9) - (7)	5,355,142	5,091,738	10,446,880

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

**June 30, 2017 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, 2017

**Liabilities**

1. Actuarial Present Value of Future Benefits	
a. Active Participants	\$181,294,474
b. Terminated Vested Participants	2,861,734
c. Retired Participants	<u>341,417,332</u>
d. Total	525,573,540

**Assets**

1. Current Valuation Assets	
a. Actuarial Value of Assets	403,438,824
2. Prospective Valuation Assets	
a. Unfunded Actuarial Liability	88,062,904
b. Present Value of Future Normal Cost Contributions	<u>34,071,812</u>
3. Total	525,573,540

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

**June 30, 2017 Actuarial Valuation**

**Development of Recommended Contribution**

1. Present Value of Future Benefits		
a. Active Participants		\$181,294,474
b. Terminated Vested Participants		2,861,734
c. Retired Participants		<u>341,417,332</u>
d. Total		525,573,540
2. Present Value of Future Normal Costs		34,071,812
3. Actuarial Value of Assets		403,438,824
4. Entry Age Unfunded Accrued Liability: (1d) - (2) - (3)		88,062,904
5. Entry Age Normal Cost		5,674,775
6. Present Value of Future Earnings		108,997,075
7. Payroll		17,337,474
8. Amortization Payment (Level Dollar 20 Year Closed Period from July 1, 2010) 13 years as of July 1, 2017		10,192,139
9. Recommended Contribution: (5) + (8)		15,866,914
10. Recommended Contribution as a Percentage of Payroll		
Normal Cost		32.73%
Amortization Payment		<u>58.79%</u>
Total		91.52%
	<u>Police</u>	<u>Fire</u>
11. Member Portion	17.70%	15.13%
12. City Portion	73.82%	76.39%

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

**June 30, 2017 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, 2017 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  
Police Officers' and Fire Fighters' Retirement System**

**June 30, 2017 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 1<sup>st</sup>, 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, 2017 Actuarial Valuation**

**Summary of Participant Data**

	<u>Police</u> <u>June 30, 2017</u>	<u>Fire</u> <u>June 30, 2017</u>
1. Active Participants		
a. Count	148	108
b. Plan Compensation	10,316,111	7,021,363
c. Average Compensation	69,703	65,013
d. Average Age	44.1	45.2
e. Average Service	17.8	17.7
2. Retired Participants (including Beneficiaries)		
a. Count	272	287
b. Total Monthly Benefits	\$1,013,771	\$1,029,215
c. Average Monthly Benefits	\$3,727	\$3,586
d. Average Age at Onset of Disability Retirements	40.3	45.8
3. Terminated Vested Participants		
a. Count	15	2
b. Total Monthly Benefits	\$23,601	\$5,887
c. Average Monthly Benefits	\$1,573	\$2,944

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

**June 30, 2017 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	3,427	3,427
50 – 54	19	76,941	4,050
55 – 59	30	126,071	4,202
60 – 64	24	95,930	3,997
65 – 69	24	115,066	4,794
70 – 74	29	117,489	4,051
75 – 79	20	70,332	3,517
80 +	<u>19</u>	<u>68,100</u>	<u>3,584</u>
Totals	166	\$673,356	\$4,056

**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	5	28,175	5,635
50 – 54	34	147,186	4,329
55 – 59	37	167,337	4,523
60 – 64	23	99,393	4,321
65 – 69	33	130,458	3,953
70 – 74	19	80,197	4,221
75 – 79	13	44,971	3,459
80 +	<u>9</u>	<u>27,580</u>	<u>3,064</u>
Totals	173	\$725,297	\$4,192

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

**June 30, 2017 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	4	\$8,487	\$2,122
45 – 49	2	4,816	2,408
50 – 54	5	18,104	3,621
55 – 59	8	28,729	3,591
60 – 64	12	43,238	3,603
65 – 69	8	31,656	3,957
70 – 74	12	41,702	3,475
75 – 79	6	21,746	3,624
80 +	<u>3</u>	<u>7,520</u>	<u>2,507</u>
Totals	60	\$205,998	\$3,433

**Police  
Distribution of Disability Retirees**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	7	\$19,566	\$2,795
45 – 49	7	18,985	2,712
50 – 54	7	23,684	3,383
55 – 59	14	49,264	3,519
60 – 64	9	31,336	3,482
65 – 69	8	27,165	3,396
70 – 74	5	16,330	3,266
75 – 79	1	2,141	2,141
80 +	<u>2</u>	<u>6,683</u>	<u>3,342</u>
Totals	60	\$195,154	\$3,253

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

**June 30, 2017 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	2	\$4,442	\$2,221
45 – 49	1	3,173	3,173
50 – 54	0	0	0
55 – 59	2	2,906	1,453
60 – 64	5	13,113	2,623
65 – 69	8	21,002	2,625
70 – 74	11	25,240	2,295
75 – 79	8	23,694	2,962
80 +	<u>24</u>	<u>56,290</u>	<u>2,345</u>
Totals	61	\$149,860	\$2,457

**Police  
Distribution of Beneficiaries**

<u>Age</u>	<u>Number</u>	<u>Total Monthly Pension</u>	<u>Average Monthly Pension</u>
Under 45	1	\$2,595	\$2,595
45 – 49	0	0	0
50 – 54	3	6,676	2,225
55 – 59	0	0	0
60 – 64	3	9,201	3,067
65 – 69	8	16,672	2,084
70 – 74	9	20,307	2,256
75 – 79	8	19,836	2,480
80 +	<u>7</u>	<u>18,032</u>	<u>2,576</u>
Totals	39	\$93,319	\$2,393

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

**June 30, 2017 Actuarial Valuation**

**Distribution of Active Police Participants by Age and by Years of Service**  
(as of June 30, 2017)

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		
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	16	10	0	0	0	0	0	0	26
40 to 44	0	0	0	11	36	9	0	0	0	0	0	56
45 to 49	0	0	0	4	19	23	0	0	0	0	0	46
50 to 54	0	0	0	2	5	9	0	0	0	0	0	16
55 to 59	0	0	0	0	1	0	0	0	0	0	0	1
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	36	71	41	0	0	0	0	0	148

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**City of Springfield**  
**Police Officers' and Fire Fighters' Retirement System**  
**June 30, 2017 Actuarial Valuation**

**Distribution of Active Fire Participants by Age and by Years of Service**  
**(as of June 30, 2017)**

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.	
Under 25	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
30 to 34	0	0	0	3	0	0	0	0	0	0	3
35 to 39	0	0	0	10	4	0	0	0	0	0	14
40 to 44	0	0	0	4	18	6	0	0	0	0	28
45 to 49	0	0	0	12	22	16	1	0	0	0	51
50 to 54	0	0	0	0	5	4	1	0	0	0	10
55 to 59	0	0	0	0	0	2	0	0	0	0	2
60 to 64	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
70 and up	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	29	49	28	2	0	0	0	108

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

**June 30, 2017 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, 2016	277	547	17	841
New Entrants	0	0	0	0
Rehires	0	0	0	0
Age and Service Retirements	(19)	19	0	0
Duty Disability Retirements	(1)	1	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	(1)	0	1	0
Nonvested Terminations - Received Refund	0	0	0	0
Nonvested Terminations - No Refund	0	0	0	0
Deceased with Beneficiary	0	(7)	0	(7)
New Beneficiaries	0	7	0	7
Deceased without Beneficiary	0	(8)	0	(8)
Received Refund	0	0	(1)	(1)
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>12</u>	<u>0</u>	<u>(9)</u>
Count as of June 30, 2017	<u>256</u>	<u>559</u>	<u>17</u>	<u>832</u>

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