

**MEMORANDUM
FINANCE DEPARTMENT**

TO: Randall Tweet, Interim City Manager **Number:** 009-17
SUBJECT: Firefighters Pension Fund and Police Pension Fund **Date:** 04-05-17
Preliminary Actuarial Valuation Results for January
1, 2017 and Assumption Study Results

At the Council Study Session on August 8, 2016, Heath Merlak of Nyhart presented to the Council the Actuarial Valuation Results for January 1, 2016. The results, which reflect the employer's contribution was then incorporated into the 2016 Property Tax Levy.

Mr. Merlak advised staff and Council that accounting standards require that actuarial assumptions be reviewed every 3-5 years and documented within the audited financial statements. He explained that it is important to ensure costs are based on reasonable assumptions and to better align costs across generations. The following assumptions were recommended to be reviewed:

- Interest rate
- Salary increases
- Payroll growth
- Mortality table

This review has been completed. Mr. Merlak will be presenting the valuation results along with the effect of recommended assumption changes on the pension fund liabilities and the City's employer contribution.

Attached please find the report along with property tax levy history to be presented to the City Council in the April 10, 2017 Study Session.

Submitted by: Stephanie Masson, Finance Director



CITY OF ROCK ISLAND

***Rock Island Firefighters Pension Fund &
Rock Island Police Pension Fund***

Preliminary Actuarial Valuation

Results as of January 1, 2017

April 10, 2017

Presented by Heath Merlak

This report was prepared for the City of Rock Island to summarize the alternative assumptions and preliminary key results of the 2017 actuarial valuations relating to the Rock Island Police and Firefighters Pension Funds and may not be appropriate for other uses. Please contact Nyhart prior to disclosing this report to any other party or relying on its content for any purpose other than the intended use.

Except where indicated otherwise, the results included in this report are based on the same data, assumptions, methods, and plan provisions as the 1/1/2017 valuation. As a result, these sections of the forthcoming 2017 funding valuation report should be considered part of this report.


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); and
- Changes in plan provisions or applicable law.

We did not perform an analysis of the potential range of future measurements due to the limited scope of our engagement.

This report has been prepared in accordance with generally accepted actuarial principles and practice.

The consultant indicated below is compliant with the continuing education requirements of the Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States.



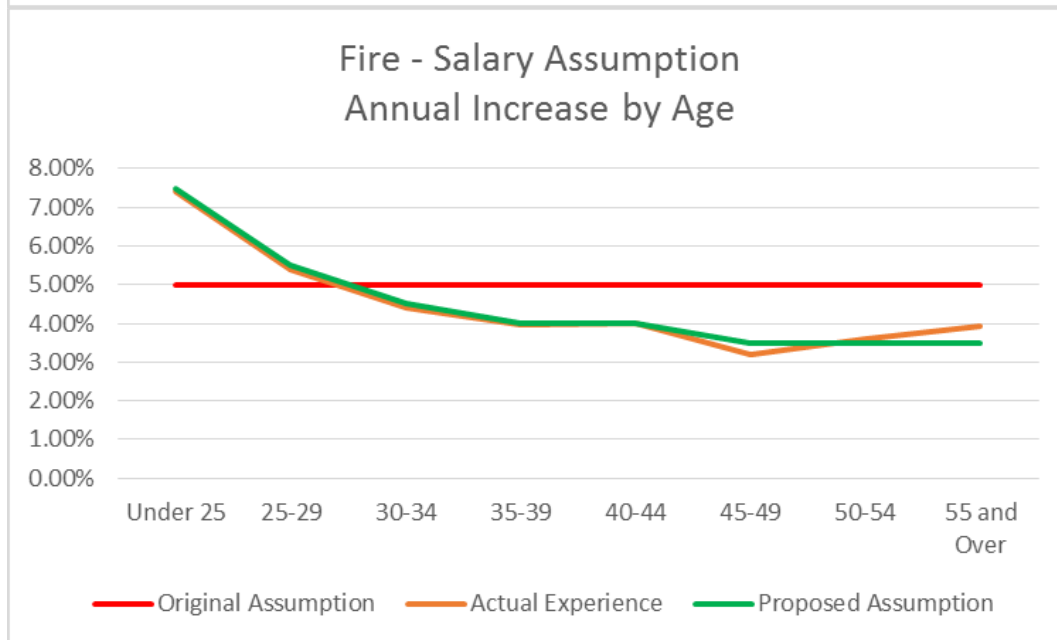
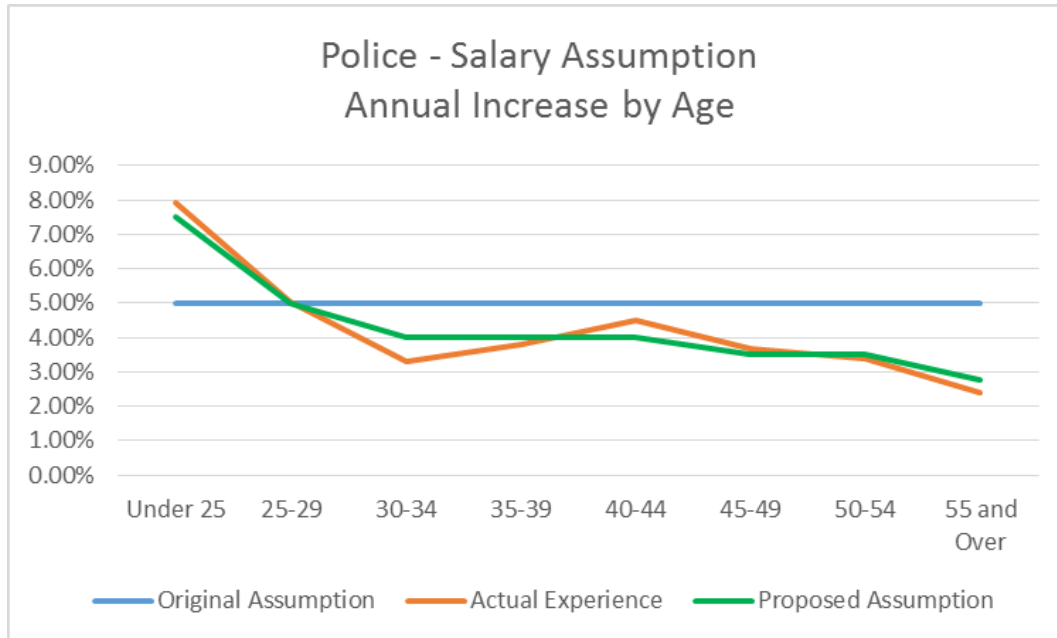
Heath W. Merlak
FSA, EA, FCA, MAAA

Table of Contents	
Assumption Review	3
Salary Increases	4
Payroll Growth	6
Interest Rate	8
Mortality	10
Asset Information	12
Funded Ratio	14
Funding Policy	15
Summary of Results	16
Appendix	19

Assumption Review

- Actuarial assumptions typically should be reviewed every 3-5 years.
- Assumption reviews are very important to ensure costs are based on reasonable assumptions and to better align costs across generations.
- During 2016 an assumption review was completed for the plans.
 - Salary increases
 - Payroll growth
 - Investment return
 - Mortality
- In total the recommendations result in higher contributions. The next several slides highlight the recommendations and impact to the contributions.

Assumption Review – Salary Increase



Assumption Review – Salary Increase

- Recommendation: Change from a flat 5.0% salary increase assumption to age-based salary scale

- Contribution impact:
 - Fire: Decrease of \$225,000 for 2017
 - Police: Decrease of \$307,000 for 2017

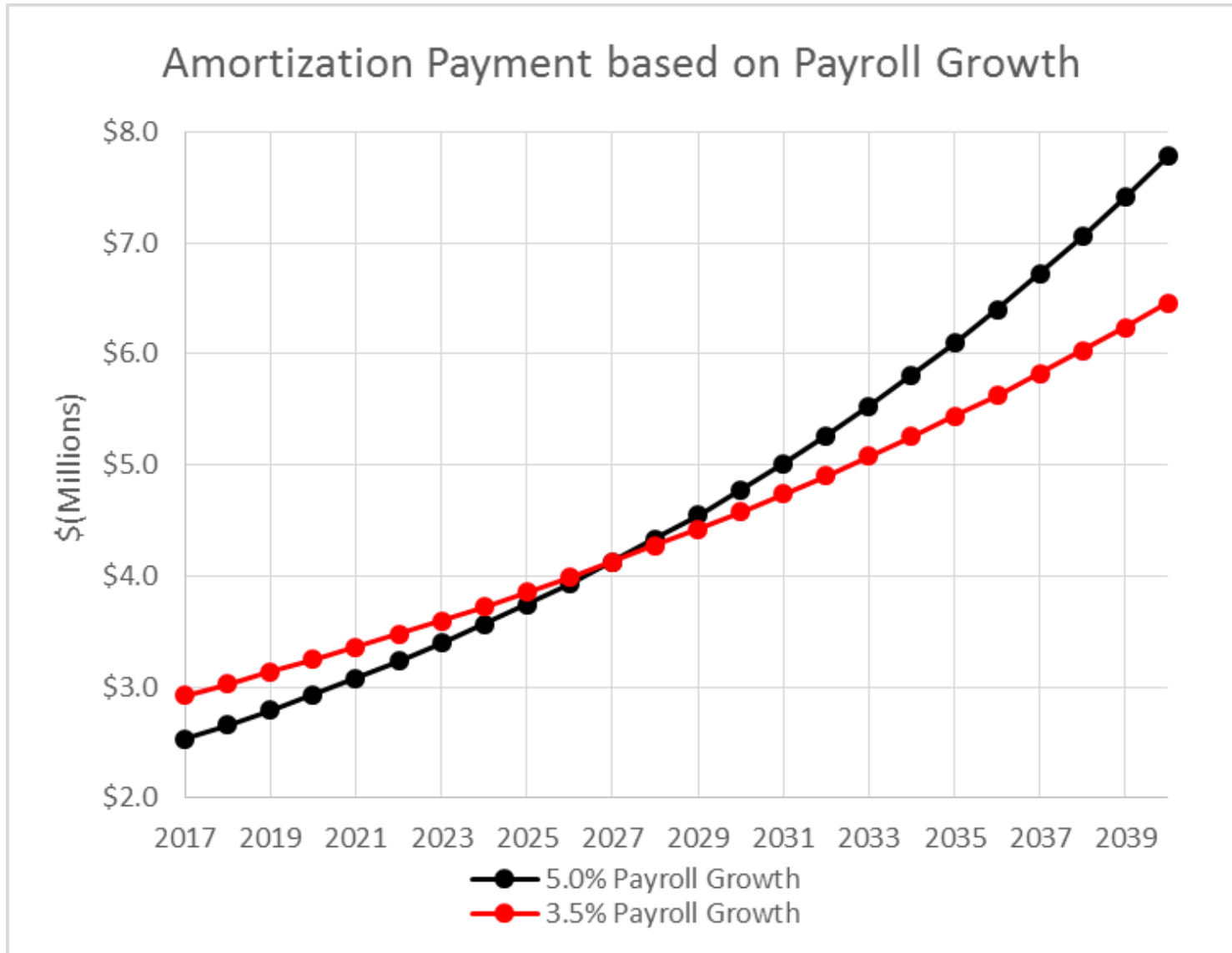
Assumption Review – Payroll Growth

Average Historical Payroll Growth	Police	Firefighters
5 Years	3.7%	3.0%
9 Years	3.0%	3.2%

- Recommendation: Lower payroll growth assumption from 5.0% to 3.5%
- Contribution impact:
 - Fire: Increase of \$395,000 for 2017
 - Police: Increase of \$404,000 for 2017

Payroll Growth Example – Police

nyhart



Assumption Review – Interest Rate

Average Historical Market Returns	Police	Firefighters
3 Years	5.03%	4.07%
5 Years	7.66%	6.28%
10 Years	6.11%	5.43%
15 Years	6.37%	
20 Years	6.64%	
25 Years	6.88%	

Assumption Review – Interest Rate

- Based on current market capital assumptions and asset allocations, future expected returns are approximately 7.00%.
- Downward trend across the country for expected returns given the low interest rate environment
- Recommendation: To lower the interest rate from 7.50%
- Contribution impact for every 0.25% decrease in the interest rate:
 - Fire: Increase of \$104,000 for 2017
 - Police: Increase of \$160,000 for 2017

Assumption Review – Mortality

- Based on national tables produced by the Society of Actuaries (SOA)
- Current mortality table is based on a 2000 study and supported by a Department of Insurance experience study completed in 2012
- SOA released a new mortality table in 2014. SOA is also conducting a specific public pension plan mortality study. Results are expected in 2018.
- Department of Insurance is looking to conduct another study although no date has been specified.
- Trend across the country is to update the mortality assumption and reflect anticipated mortality improvements

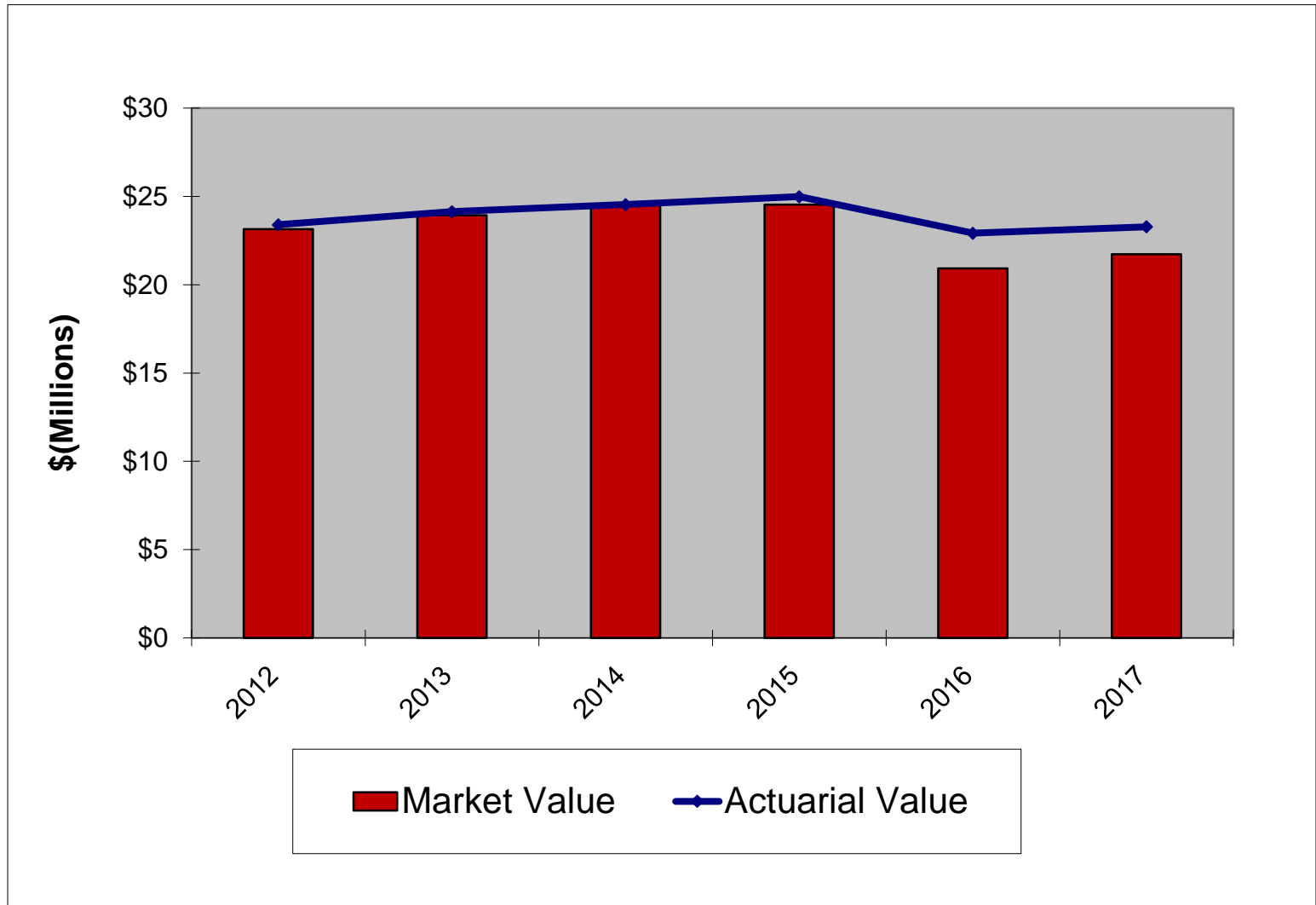
Assumption Review – Mortality

- Recommendation: Move to an updated mortality assumption based on national studies

- Contribution impact for moving to 2014 study with mortality improvements projected to the valuation date
 - Fire: Increase of \$252,000 for 2017
 - Police: Increase of \$276,000 for 2017

- Contribution impact for moving to 2014 study with mortality improvements projected for each future year
 - Fire: Increase of \$412,000 for 2017
 - Police: Increase of \$475,000 for 2017

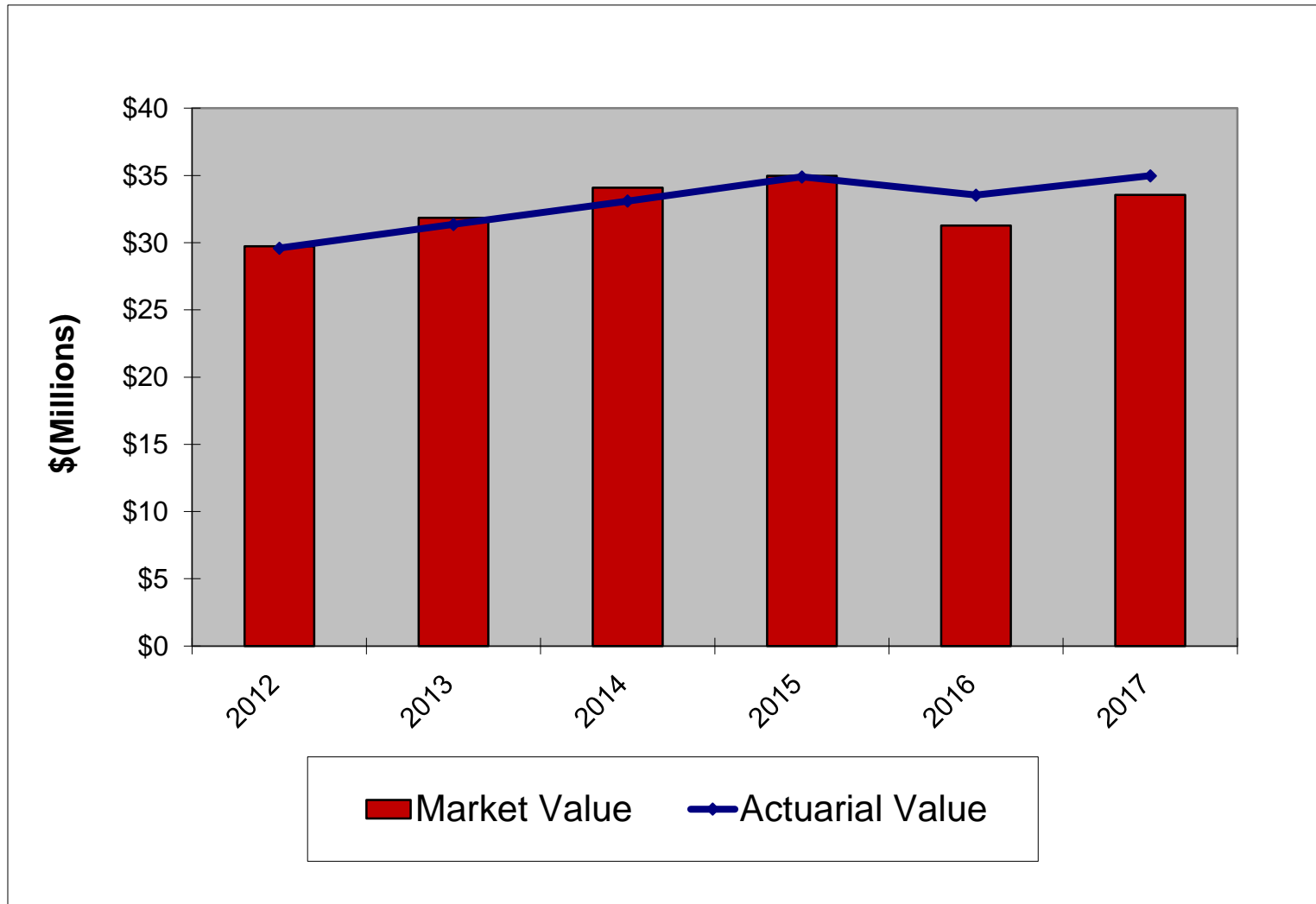
Actuarial vs. Market Value of Assets



Approximate 2016 rate of return on Market Value: 7.4%

Approximate 2016 rate of return on Actuarial Value: 4.8%

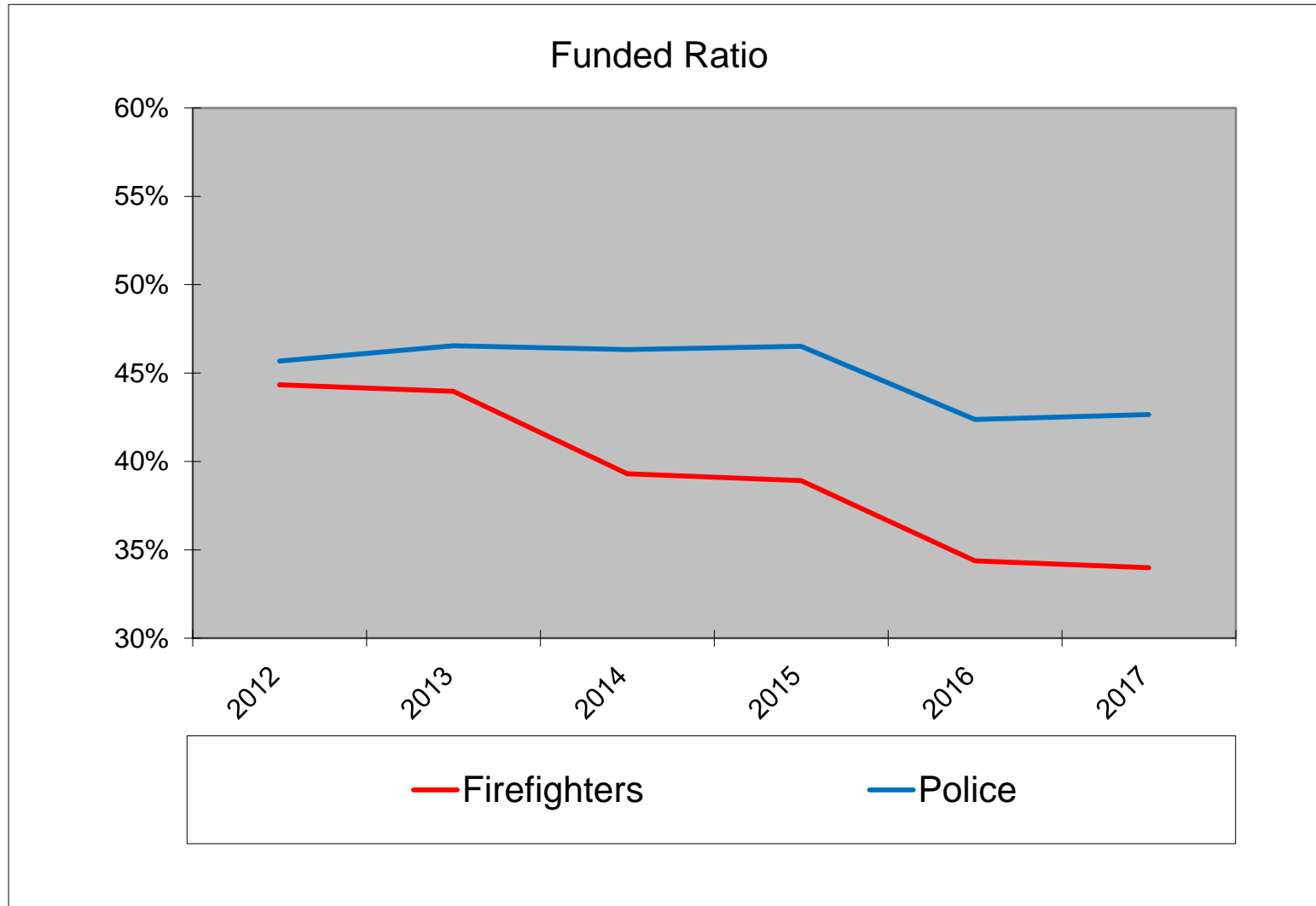
Actuarial vs. Market Value of Assets



Approximate 2016 rate of return on Market Value: 9.4%

Approximate 2016 rate of return on Actuarial Value: 6.2%

Funded Ratio – Firefighters & Police



Note: 2017 funded ratio is before assumption changes.

Funding Policy

- Funding policy has been to fund to 100% of the actuarial accrued liability by 2041
- Illinois minimum is to fund to 90% of the actuarial accrued liability by 2041
 - Is based on the projected unit cost method which results in a smaller accrued liability (roughly 3-4% for each plan as of January 1, 2017)
- Our recommendation is to fund to 100%.
- Funding to 100% of the accrued liability is the best actuarial approach and is used by almost or all other public pension plans outside of Illinois
- For budgetary reasons may need to consider changing the funding policy

Summary of Results – Firefighters

Valuation Date	1/1/2017 Before Changes	1/1/2017 After Changes	1/1/2017 After Changes
Actuarial Accrued Liability	\$ 68,505,158	\$ 72,295,123	\$ 76,462,945
Actuarial Value of Assets	<u>23,283,361</u>	<u>23,283,361</u>	<u>23,283,361</u>
Unfunded Accrued Liability	\$ 45,221,797	\$ 49,011,762	\$ 53,179,584
Funded Ratio	34.0%	32.2%	30.5%
Funding Policy Contribution (Total)	\$ 3,206,183	\$ 3,732,632	\$ 4,019,567
Illinois Tax Levy Contribution (Total)	\$ 2,798,687	\$ 3,253,783	\$ 3,521,479
Assumptions			
Salary Increase	5.00%	Graded	Graded
Payroll Growth	5.00%	3.50%	3.50%
Interest Rate	7.50%	7.25%	7.00%
Mortality	RP-2000 Blue Collar	RP-2014 Blue Collar projected to 2017 w/SSA16	RP-2014 Blue Collar w/fully generational projection w/SSA16

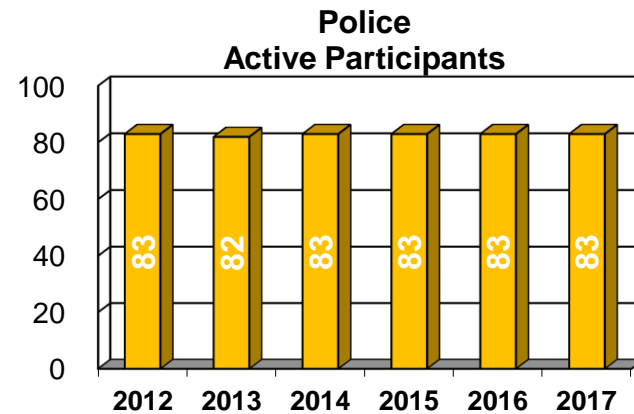
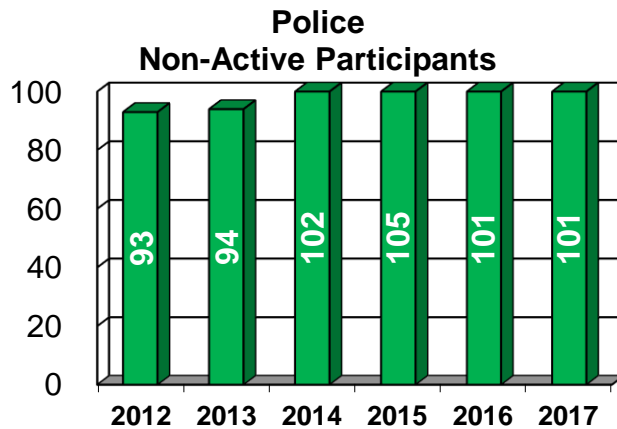
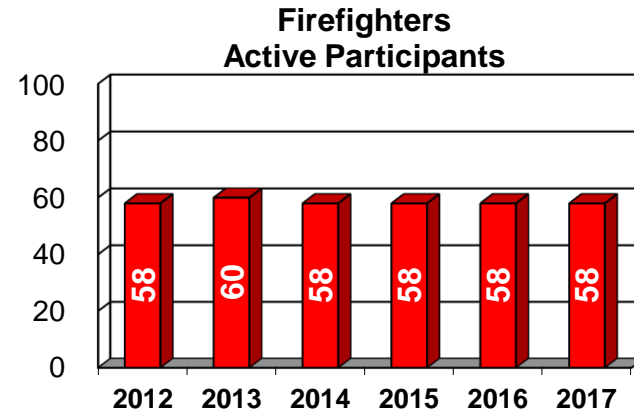
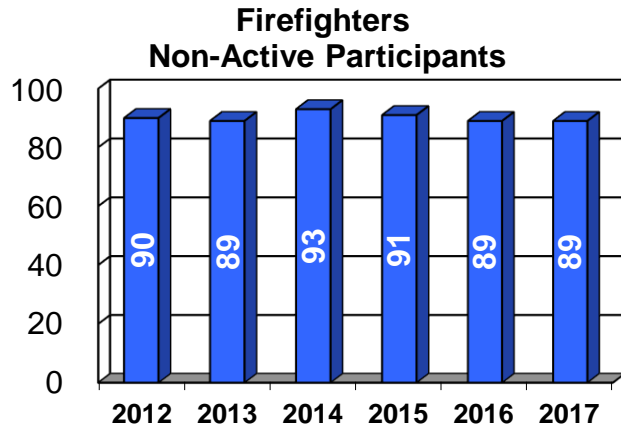
Summary of Results – Police

Valuation Date	1/1/2017 Before Changes	1/1/2017 After Changes	1/1/2017 After Changes
Actuarial Accrued Liability	\$ 81,979,932	\$ 85,927,920	\$ 91,265,709
Actuarial Value of Assets	<u>34,975,753</u>	<u>34,975,753</u>	<u>34,975,753</u>
Unfunded Accrued Liability	\$ 47,004,179	\$ 50,952,167	\$ 56,289,956
Funded Ratio	42.7%	40.7%	38.3%
Funding Policy Contribution (Total)	\$ 3,364,329	\$ 3,897,615	\$ 4,287,059
Illinois Tax Levy Contribution (Total)	\$ 2,956,915	\$ 3,399,685	\$ 3,768,101
Assumptions			
Salary Increase	5.00%	Graded	Graded
Payroll Growth	5.00%	3.50%	3.50%
Interest Rate	7.50%	7.25%	7.00%
Mortality	RP-2000 Blue Collar	RP-2014 Blue Collar projected to 2017 w/SSA16	RP-2014 Blue Collar w/fully generational projection w/SSA16

Questions?

Appendix

Participant Information



Active Demographics

	Firefighters		Police	
	2016	2017	2016	2017
Average Age	42.4	42.1	39.9	40.1
Average Service	14.4	14.4	13.9	13.9
Average Plan Compensation	\$71,236	\$73,157	\$70,067	\$71,437

Market and Actuarial Value of Assets

	1/1/2015	1/1/2016	1/1/2017
Firefighters			
Market Value	\$24,540,200	\$20,917,253	\$21,726,661
Actuarial Value	\$24,986,388	\$22,918,421	\$23,283,361
Actuarial Value/Market Value	102%	110%	107%
Rate of Return			
Market Value	3.3% ¹	-0.5%	7.4%
Actuarial Value	5.0% ¹	5.0%	4.8%
Police			
Market Value	\$34,981,353	\$31,274,328	\$33,554,905
Actuarial Value	\$34,742,735	\$33,537,930	\$34,975,753
Actuarial Value/Market Value	99%	107%	104%
Rate of Return			
Market Value	3.9% ¹	-0.9%	9.4%
Actuarial Value	6.3% ¹	6.5%	6.2%

¹ For 9 month period (4/1/2014-12/31/2014).

**City of Rock Island
Tax Levy
Breakdown by area 2011 through 2016**

	Property Tax Levy by Category					
	2011	2012	2013	2014	2015	2016*
General Fund	3,352,522	2,723,349	2,164,705	1,373,703	1,209,608	900,641
Police Pension	2,171,239	2,301,409	2,421,323	2,688,265	2,893,929	3,210,078
Fire Pension	1,978,959	2,030,816	2,186,165	2,676,616	2,803,551	3,059,212
Library	1,969,440	1,970,277	1,970,678	1,971,394	2,021,186	2,051,099
Park	1,752,412	1,752,886	1,753,403	1,753,645	1,797,523	1,824,126
Public Benefit	237,970	229,315	223,534	223,126	230,054	234,987
	11,462,542	11,008,052	10,719,808	10,686,749	10,955,851	11,280,143

*actual extension not available at 3/17

