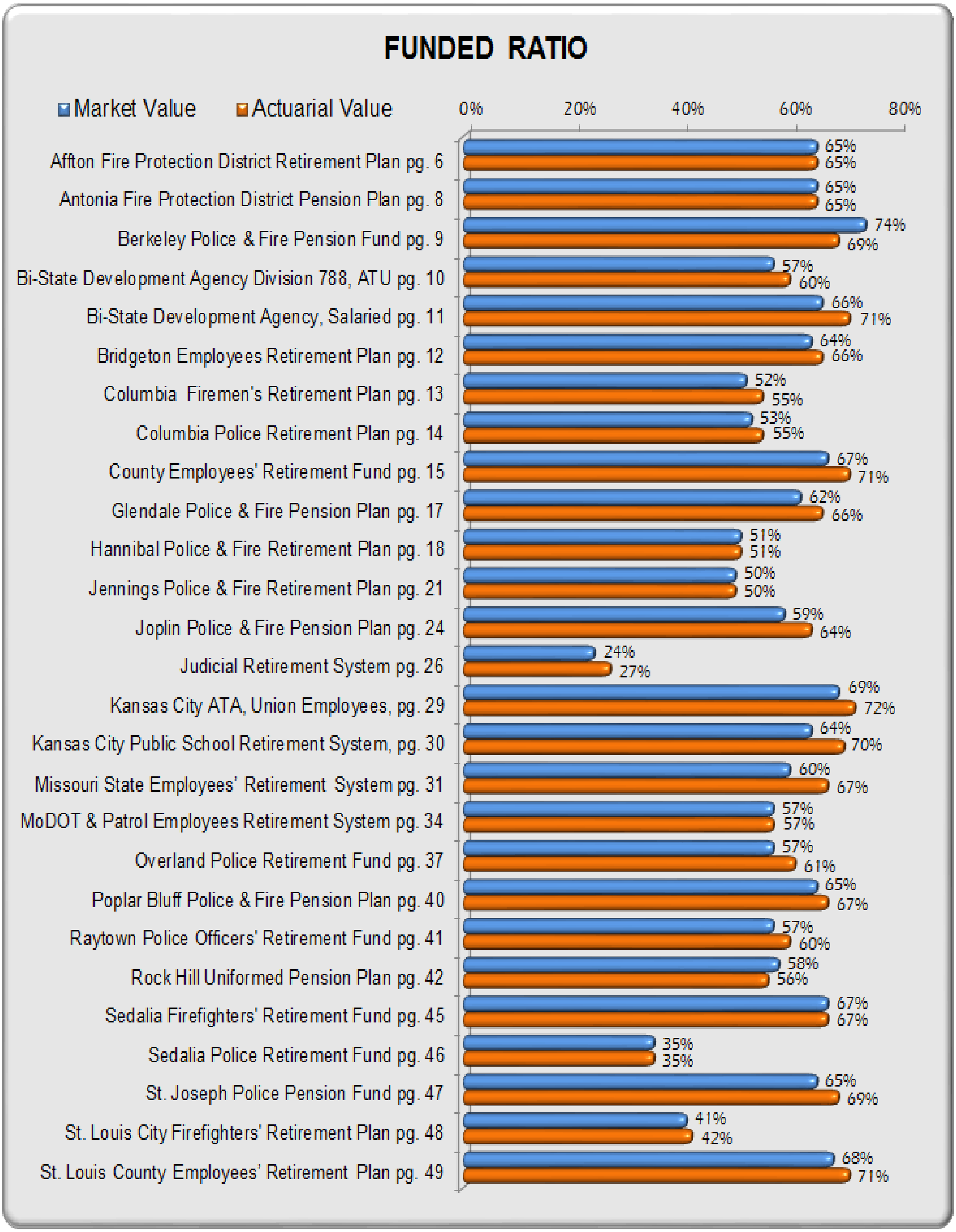
JOINT COMMITTEE ON PUBLIC EMPLOYEE RETIREMENT

WATCH LIST

November 2017


FUNDED RATIO
Market Value
Actuarial Value
0%
20%
40%
60%
80%
Affton Fire Protection District Retirement Plan pg. 6
65%
65%
Antonia Fire Protection District Pension Plan pg. 8
65%
65%
Berkeley Police & Fire Pension Fund pg. 9
74%
69%
Bi-State Development Agency Division 788, ATU pg. 10
57%
60%
Bi-State Development Agency, Salaried pg. 11
66%
71%
Bridgeton Employees Retirement Plan pg. 12
64%
66%
Columbia Firemen's Retirement Plan pg. 13
52%
55%
Columbia Police Retirement Plan pg. 14
53%
55%
County Employees' Retirement Fund pg. 15
67%
71%
Glendale Police & Fire Pension Plan pg. 17
62%
66%
Hannibal Police & Fire Retirement Plan pg. 18
51%
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Jennings Police & Fire Retirement Plan pg. 21
50%
50%
Joplin Police & Fire Pension Plan pg. 24
59%
64%
Judicial Retirement System pg. 26
24%
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Kansas City Public School Retirement System, pg. 30
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Missouri State Employees' Retirement System pg. 31
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MoDOT & Patrol Employees Retirement System pg. 34
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Overland Police Retirement Fund pg. 37
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Poplar Bluff Police & Fire Pension Plan pg. 40
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Raytown Police Officers' Retirement Fund pg. 41
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Rock Hill Uniformed Pension Plan pg. 42
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Sedalia Firefighters' Retirement Fund pg. 45
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Sedalia Police Retirement Fund pg. 46
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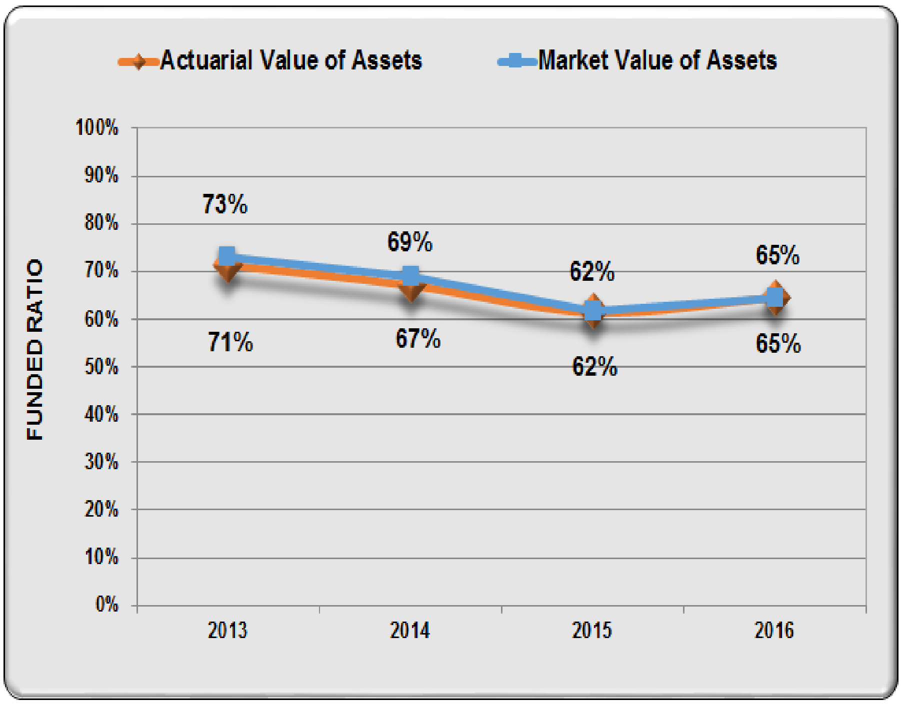
35%
St. Joseph Police Pension Fund pg. 47
65%
69%
St. Louis City Firefighters' Retirement Plan pg. 48
41%
42%
St. Louis County Employees' Retirement Plan pg. 49
68%
71%

Please Note: 1. For purposes of the Watch List, the term "inactive" includes terminated vested, retired, surviving beneficiary, disabled members, and for some plans, terminated nonvested members who have not withdrawn employee contributions.

2. The term "interest" under Actuarial Assumptions refers to the assumed rate of return for investments.

AFFTON FIRE PROTECTION DISTRICT RETIREMENT PLAN

- Rate of return on investments equaled 8.07% (Market) vs. 6.5% assumed.
- Employer contribution is funded by a property tax levy. At the April 2017 election, the voters adopted an increase in the tax levy of twenty-five cents. In response to an April 2017 JCPER communication, an attorney for the district wrote "The directors are aware of the challenges and are dedicated to improving the pension plan."
- Assets are valued at market value except for 2008 loss which was smoothed over 5 years.
- Effective with the 1/1/16 valuation, the actuarial cost method was changed from the Aggregate method to the Entry Age Normal Method with a 30-year amortization of the unfunded liability.
- Plan provisions were modified effective 01/01/13. The benefit multiplier was changed from 2.1667% to 1.7333%. Accrued benefits are not modified; however, new and prospective service will be at new provision levels. Lump sum benefit payments were also ceased.
- Employee contributions were implemented in 2010 at 4% and then 7% thereafter.



January 1,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2016	$453,879	$300,389	66%
2015	$315,183	$304,357	97%
2014	$248,521	$300,403	120%
2013	$264,490	$298,054	113%

As of 1/1/17

Market Value: **$7,931,637**
Actuarial Value: **$7,931,637**
AAL: **$12,285,739**

MEMBERSHIP:
Active: 39 **Inactive:** 26

Normal Retirement Formula:
1.7333% of three-year average monthly compensation times service, maximum of 30 years.

Normal Retirement Benefits:
Age 60 with 5 years of service

Social Security Coverage: Yes

COLA: No COLA

ACTUARIAL ASSUMPTIONS:

Interest: 6.5% **Salary:** 3.5%

From:	Nickolas Fahs
To:	Michael Ruff; "John Hefele"; "Frank Vatterott"
Subject:	RE: Affton Fire Protection District Pension Plan
Date:	Monday, November 6, 2017 9:47:35 AM

Feel free to contact Mr. Vatterott and Hefele again this year.
Nick

From: Michael Ruff [mailto:mruff@senate.mo.gov]
Sent: Friday, November 03, 2017 3:47 PM
To: nfahs@afftonfire.com
Subject: Affton Fire Protection District Pension Plan

Dear Chief Fahs:
Each year, the Joint Committee on Public Employee Retirement staff compiles a report for the committee's review that includes any defined benefit retirement plan that has a funded ratio of less than 70% on a market value basis. We have used information submitted to the committee as part of the plan year 2016 survey to prepare this report. This report is designed to increase awareness of trends in plan funding and contribution levels.

I am attaching an information page relating to Affton FPD that will be presented to the committee at its fourth quarter meeting on Wednesday, November 29, 2017 at 1pm in Senate Committee Room 2. Please feel free to review this information and respond with any additional information or thoughts you deem appropriate. If you would like to respond, please provide any information or comments by Friday, November 17, 2017. In the past year, I have spoken with both John Hefele and Frank Vatterott on behalf of Affton FPD regarding the plan's funding and April's tax levy increase. I would be happy to speak with them again if you would like.

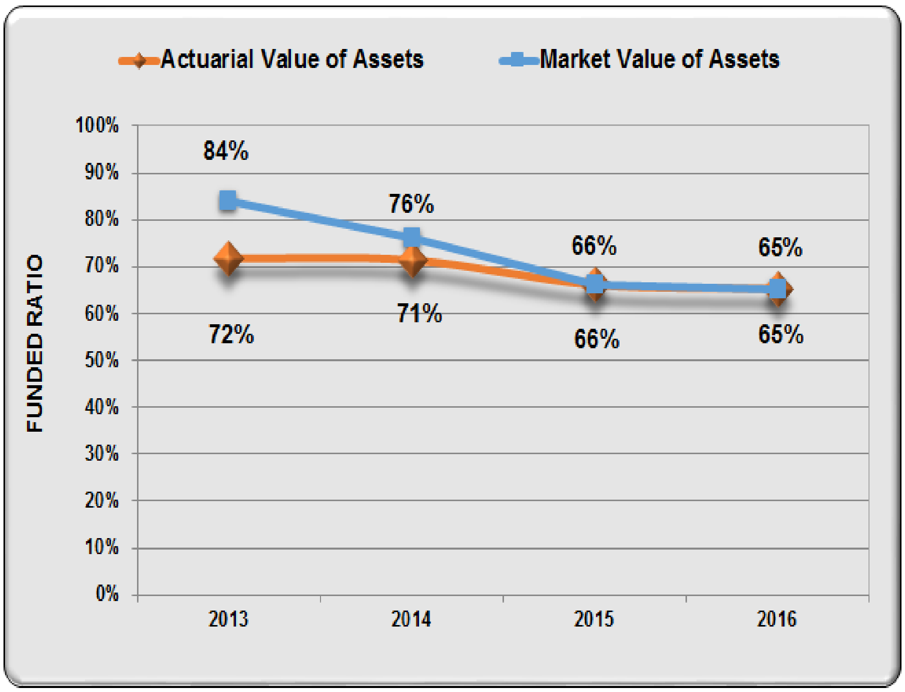
Thank you for your consideration and ongoing cooperation with the JCPER. Please do not hesitate to contact me if you have any questions or would like additional information.

Sincerely,

Michael Ruff
Executive Director
Joint Committee on Public Employee Retirement
State Capitol, Room 219-A
Jefferson City, MO 65101
573-751-1280
mruff@senate.mo.gov

ANTONIA FIRE PROTECTION DISTRICT PENSION PLAN

- Rate of return on investments equaled 5.42% vs. 6.0% assumed.
- Updated mortality tables.
- The plan experienced demographic losses due to people working another year past their normal retirement age of 55. The Plan changed the assumed retirement age to age 60 to better reflect when members actually retire.
- Plan was frozen in February 2009. The FPD implemented a defined contribution plan for employees in 2010. The DC plan was terminated and proceeds distributed in 2013. Joined LAGERS in July 2012.
- Lump sum payment option eliminated.
- Closed 15-year amortization policy beginning in 2014 for payment of unfunded liabilities.



January 1,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2017	$112,452	N/A	N/A
2016	$104,304	101,925	98%
2015	$85,237	$74,250	87%
2014	$68,700	$75,000	109%
2013	$58,625	$75,000	128%

As of 1/1/17

Market Value: **$2,079,590**
Actuarial Value: **$2,079,590**
AAL: **$3,189,496**

MEMBERSHIP:
Active: 15 **Inactive:** 6

Normal Retirement Formula:
2.25% of compensation for first 24 years of service plus 1% for the next 6 years of service
Formula frozen 01/01/09

Normal Retirement Benefits:
Age 55 or 30 years of service

Social Security Coverage: Yes

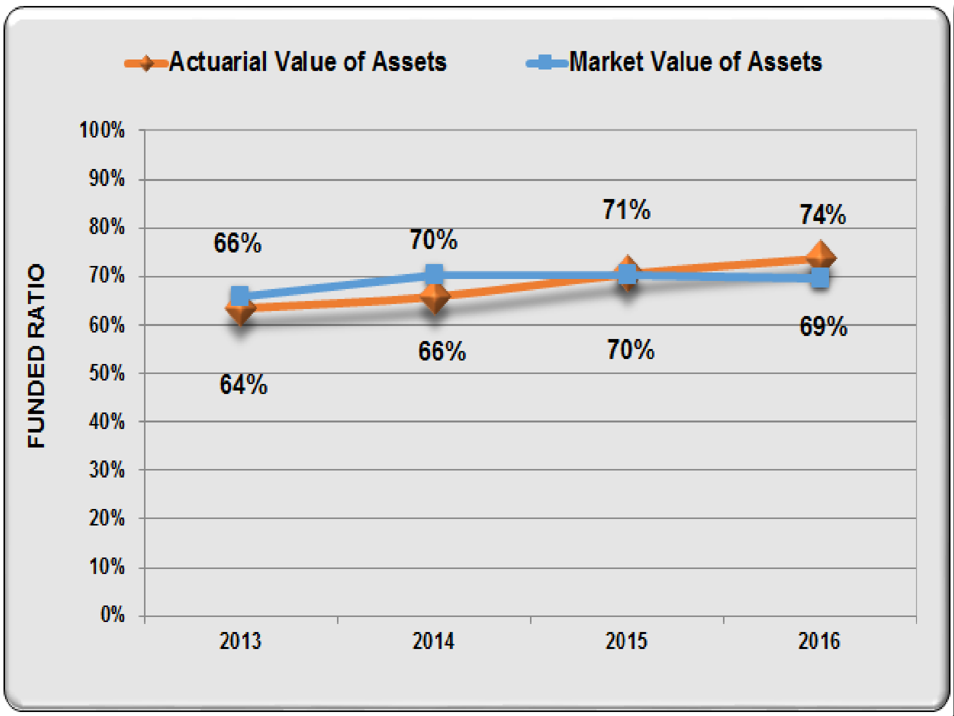
COLA: No COLA

ACTUARIAL ASSUMPTIONS:

Interest: 6% **Salary:** N/A

Berkeley Police & Fire Pension Fund

- Rate of return on investments equaled 0% (Market) & 5.5% (Actuarial) vs. 7.5% assumed.
- Lowered the assumed rate of return for investments from 7.5 to 7.0.
- The plan is funded by a dedicated tax levy that has been insufficient to meet the actuary's recommended contribution since 2003. At the April 2016 election, the tax levy was increased from $0.11 to $0.33 per $100 of assessed valuation.
- Voters adopted plan changes at the April 2016 election, including decreasing the multiplier from 2.5 to 2.0 for service earned on/after 1/1/17; eliminating the COLA after 7/1/15, and only refunding 2/3s of a member's contributions upon retirement.
- The actuarial cost statement for the April 2016 plan changes notes that the "changes are projected to improve the ability of the plan to meet its obligations."
- Employees contribute 6% to this plan.
- The actuary notes that the plan experienced a small actuarial gain primarily due to six employee terminations.
- On the JCPER Watch List from 2010-2014.



Year ending 6/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2017	$924,236	N/A	N/A
2016	$1,060,472	$199,306	19%
2015	$1,247,121	$198,187	16%
2014	$1,337,551	$204,885	15%
2013	$1,279,952	$186,654	15%

As of 6/30/16

Market Value: **$11,890,389**

Actuarial Value: **$12,638,858**

AAL: **$17,125,602**

MEMBERSHIP:

Active: 52 **Inactive:** 55

BENEFITS:

Normal Retirement Formula:

Average salary times 2.5% times years of service to a maximum of 20 years plus average salary times 1% times years of service in excess of 20 years to a maximum of 5 years.

Maximum: 55% of compensation

Normal Retirement Benefits:

Age 55 with 10 years of service

Social Security Coverage: Yes

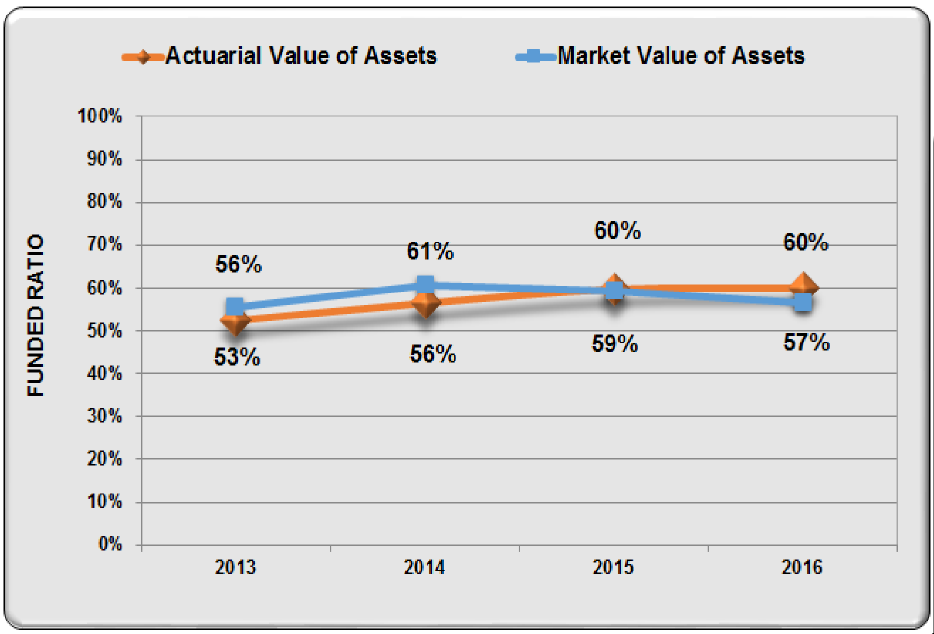
COLA: No COLA

ACTUARIAL ASSUMPTIONS:

Interest: 7% **Salary:** 4%

BI-STATE DEVELOPMENT AGENCY
DIVISION 788, A.T.U.

- Rate of return on investments equaled –3.4% (Market) and 6.6% (Actuarial) vs. 7.25% assumed.
- Effective with the 4/1/16 valuation, the assumed rate of return was lowered from 7.25% to 7%.
- Unfunded Actuarial Accrued Liability is amortized on a closed 30-year period effective April 1, 2003.
- At the 12/10/15 meeting, the Pension Committee adopted the weekly contribution amount of $173.03 per active participant.
- With the April 1, 2010 actuarial valuation, an additional 5 year weekly contribution of $8.87 was calculated for the plan to achieve a 60% funded ratio. The actuary has estimated this same amount would be required to achieve a 65% and 70% funded ratio over 5 years. This additional contribution continues to be made.
- The Employer continues to meet the full ADC.
- Effective April 1, 2015, this plan merged with the 788 Clerical Unit ATU plan pursuant to a resolution and vote of the membership and acceptance by the plans' pension committees. The Clerical Unit ATU plan had previously been on the JCPER Watch List.
- The contribution history below is taken from the plan's 3/31/16 Financial Statements (pg. 23), which revised the contribution history to include the previous amounts from the Clerical Plan.



FY ending 6/30,	EMPLOYER RECOMMENDED CONTRIBUTION	EMPLOYER ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2016	$9,342,714	$9,342,714	100%
2015	$9,199,407	$9,199,407	100%
2014	$9,249,791	$9,249,791	100%
2013	$8,157,204	$8,157,204	100%
2012	$7,307,095	$7,307,095	100%

As of 4/1/16

Market Value: $ 116,103,177
Actuarial Value: $ 122,802,782
AAL: $ 205,061,983

MEMBERSHIP:
Active: 1,378 **Inactive:** 1,309

BENEFITS:
Normal Retirement Formula:
$40 times years of service for those retiring with less than 25 years of service
$55 times years of service for those retiring with 25 or more years of service

Normal Retirement Benefits:
25 years of service, age 65, or age 55 with 20 years of service

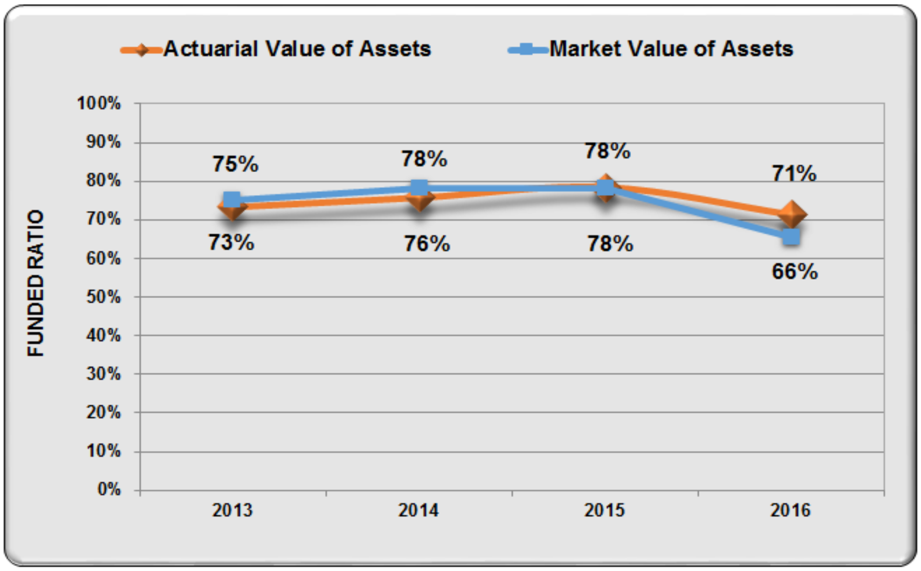
Social Security Coverage: Yes

COLA: Ad Hoc COLA

ACTUARIAL ASSUMPTIONS:
Interest: 7%

BI-STATE DEVELOPMENT AGENCY, Pension Plan for Salaried Employees

- Rate of return on investments equaled –3.6% (Market) and 4.5% (Actuarial) vs. 7.5% assumed.
- Effective with the 6/1/16 valuation, the assumed rate of return was lowered from 7.5% to 7%.
- The actuary attributes an increase in the recommended contribution to three primary reasons: average salary increases higher than the assumed rate, the decrease in the assumed rate of return, and actual investment return lower than the assumed rate.
- Unfunded Actuarial Accrued Liability is amortized on a closed 30-year period effective April 1, 2010.
- The Employer continues to meet the full ADC.
- Employees contribute 3% to the plan.
- The Plan was closed on 7/1/13 to new participants.



FY ending 6/30,	EMPLOYER RECOMMENDED CONTRIBUTION*	EMPLOYER ACTUAL CONTRIBUTION*	PERCENT CONTRIBUTED
2016	$2,752,597	$2,752,597	100%
2015	$3,500,784	$3,500,784	100%
2014	$4,998,198	$4,998,198	100%
2013	$4,370,010	$4,370,010	100%
2012	$3,129,976	$3,129,976	100%

*Contribution history is from Financial Statements, Year Ended May 31, 2016, Page 23, Schedule of Employer Contributions

As of 6/1/16

Market Value: **$ 54,855,337**
Actuarial Value: **$ 59,578,888**
AAL: **$ 83,570,358**

MEMBERSHIP:
Active: 329 **Inactive:** 462

BENEFITS:
Normal Retirement Formula:
1.5% of compensation times years of service

Normal Retirement Benefits:
Age 60 with 5 years of service

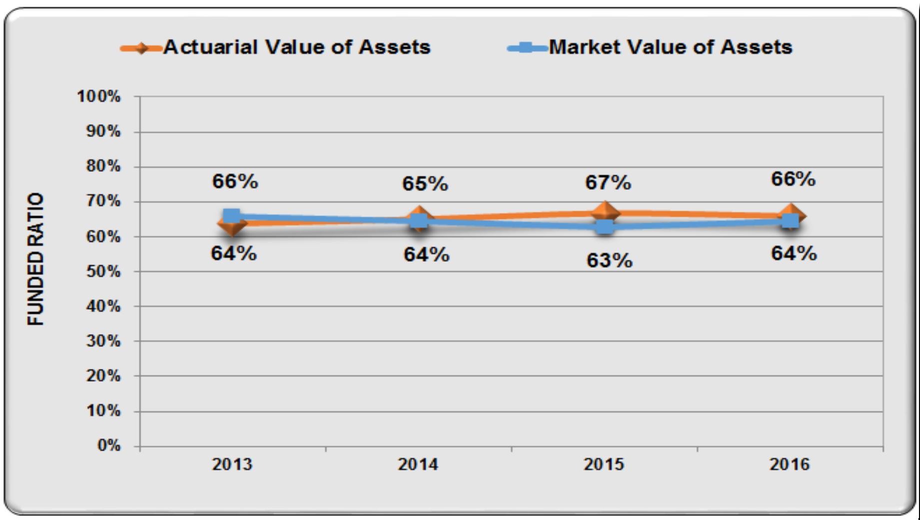
Social Security Coverage: Yes

COLA: No COLA

ACTUARIAL ASSUMPTIONS:
Interest: 7%
Salary: 4.5%

BRIDGETON EMPLOYEES RETIREMENT PLAN

- Rate of return on investments equaled 7.64% (Market) and 3.5% (Actuarial) vs. assumed 7.5%.
- The plan was frozen to new employees as of January 1, 2012.
- The plan uses an open 30-year period for amortization of unfunded liabilities. The actuary comments that “the current funding policy is not projected to pay down the unfunded actuarial accrued liability in the absence of emerging gains or contributions in excess of the policy amount...consideration should be given to reviewing the funding policy.”
- In April 2015, voters approved a hotel/motel tax increase to generate an additional $900,000 in revenue annually. According to the State Auditor, city officials are increasing the annual contribution by $200,000 each year until the full contribution is met.
- The Employer has not met the ARC since 2007. The actuary comments that “the chief reasons for the increase in annual cost as a percentage of payroll is that actual City contributions fell short of target contributions along with the fact that the payroll is declining as the plan is closed to new entrants.”
- For employees hired after 1/1/12, the City uses a matching component to its 457 deferred compensation plan.
- Audited by the State Auditor in 2016 with an overall performance rating of Poor.
- Included on the State Auditor’s “watch list” in 2014.



January 1,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2017	$1,687,909	N/A	N/A
2016	$1,680,519	$1,525,000	91%
2015	$1,750,340	$1,200,000	68%
2014	$1,740,187	$1,000,000	57%
2013	$1,767,398	$1,000,000	57%

As of 01/01/17

Market Value: $27,602,613
Actuarial Value: $28,190,166
AAL: $42,833,166

MEMBERSHIP:
Active: 94 **Inactive:** 157

BENEFITS:
Normal Retirement Formula:
2% of compensation times years of service

Normal Retirement Benefits:
Age 60 with 5 years of service

Social Security Coverage:
Yes

COLA: No COLA

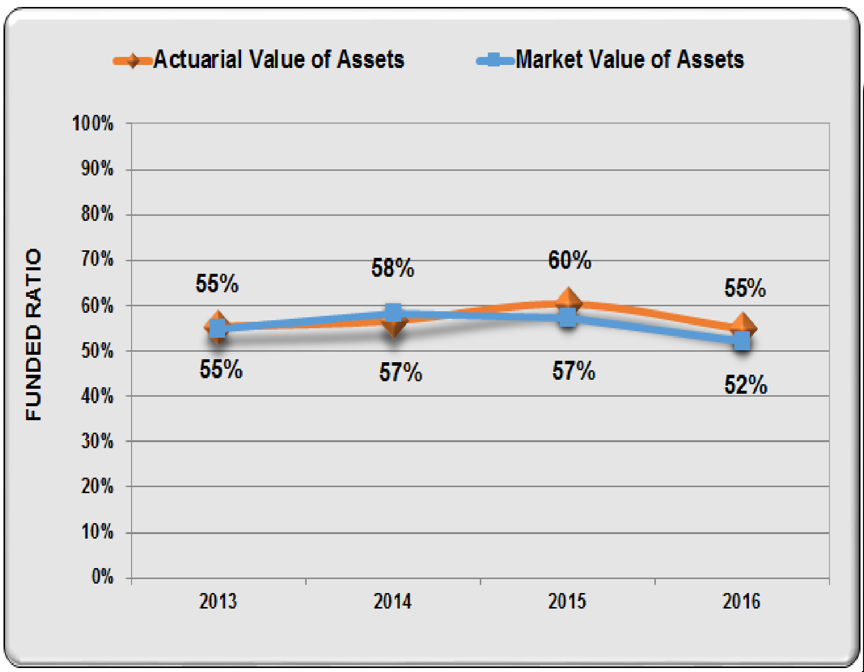
ACTUARIAL ASSUMPTIONS:
Interest: 7.5% **Salary:** 4%

*Market Value from actuarial valuation as of 1/1/17 including accrued contribution of $1,525,000.

COLUMBIA FIREMEN & POLICE RETIREMENT SYSTEMS

- The Fire and Police plans are commingled for investment purposes. Rate of return on investments equaled 6.2% (Market) & 5.7% (Actuarial) vs. 7.5% assumed. Investment gains/losses are smoothed over a 4 year period.
- The plan's actuary completed a five year experience study for the period 10/1/10—9/30/15. The board modified economic and demographic assumptions, including lowering assumed rate of return from 7.5 to 7 and payroll growth from 3.5 to 3.25, and changing the amortization period for unfunded liabilities from 23 years to 30 years.
- The employer continues to meet or exceed the ARC. For fiscal year 2015, the City contributed an additional $5 million in excess of the recommended contribution, divided between the two plans. The actuary notes that "For the continued well-being of the fund, the fund must receive contributions at least at the levels recommended in the actuarial valuation."
- A new tier of provisions were passed for employees hired <u>on or after October 1, 2012</u>. These provisions include, but are not limited to, modified age and service requirements for retirement eligibility, modified benefit multiplier with no retiree COLA, fire member contribution reduced to 4% of pay, and automatic survivor benefit replaced with a survivor option at retirement with member's reduced benefit. The actuary notes that "employer normal cost contributions will decrease as a percentage of payroll as more active members become covered under the post October 1, 2012 benefit provisions."
- Fire employees contribute 16.32% of pay (4% for those hired on/after 10/01/12) and do not participate in Social Security.
- Police employees contribute between 7.45% & 8.35% of pay (4.5% for those hired on/after 10/01/12) & do participate in Social Security.
- *These plans were included on the State Auditor's watch list in 2014.*

FIREMEN'S RETIREMENT FUND



Yr Ending 9/30,	<u>RECOMMENDED CONTRIBUTION</u>	<u>ACTUAL CONTRIBUTION</u>	<u>PERCENT CONTRIBUTED</u>
2016	$5,226,250	$5,226,250	100%
2015	$4,751,496	$7,751,496	163%
2014	$4,674,412	$4,674,412	100%
2013	$4,382,296	$4,382,296	100%

<u>AS OF 9/30/16</u>

Market Value: $ 71,733,972
Actuarial Value: $ 75,438,867
AAL: $ 137,828,858

MEMBERSHIP:
Active: 139 Inactive: 161

BENEFITS:
Normal Retirement Formula:
3.5% of compensation for the first 20 years + 2% for next 5 years. Max 80% of compensation; 2% of compensation < 20 years. New hires: 2.5% of compensation x yrs of service, no max.
Normal Retirement Benefits:
Age 65 or 20 years of service
Age 55 with 5 yrs of service or Rule of 80 (new hires)

COLA: Annual Max of 2%

ACTUARIAL ASSUMPTIONS:
Interest: 7%
Salary: 3.25%

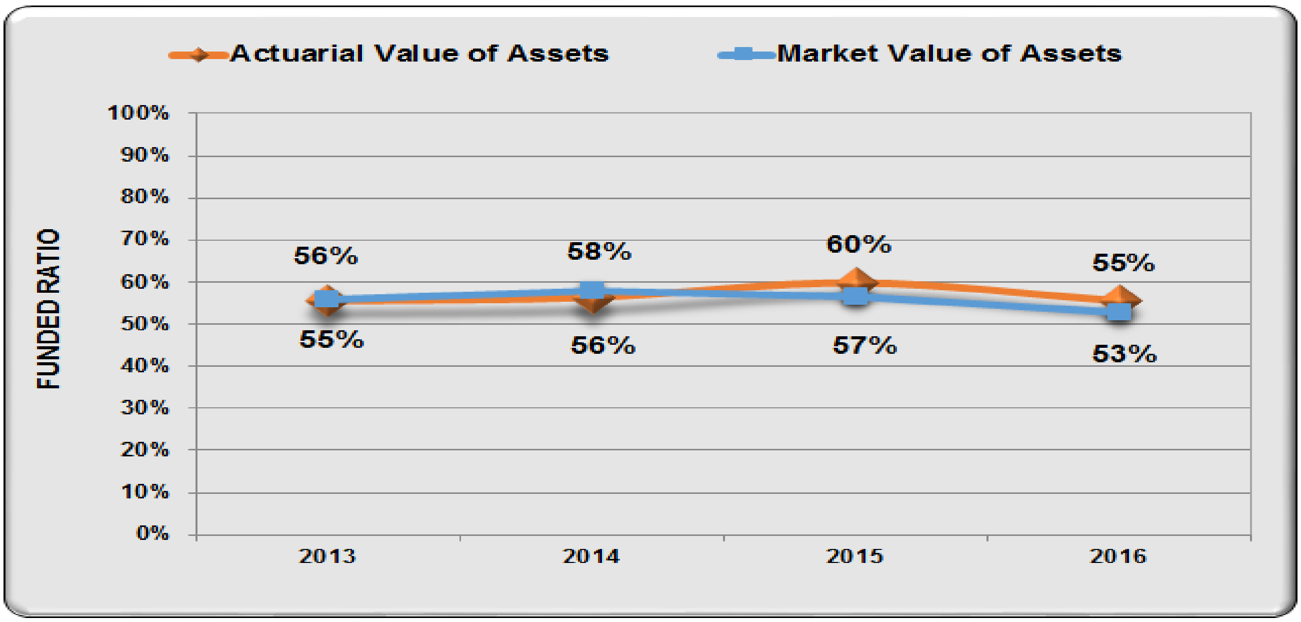
COLUMBIA FIREMEN & POLICE RETIREMENT SYSTEMS
(Continued)

POLICE RETIREMENT SYSTEM

	As of 09/30/16	
Market Value:	**$48,252,081**	**Membership:**
Actuarial Value:	**$50,744,190**	**Active:** 151
AAL:	**$91,623,783**	**Inactive:** 173

Normal Retirement Formula:
3% of compensation for first 20 years + 2% for next 5 years Maximum: 70% of compensation
2.0% of compensation up to 25 years + 1.5% each year over 25 years Max—57.5% of compensation (new hires)

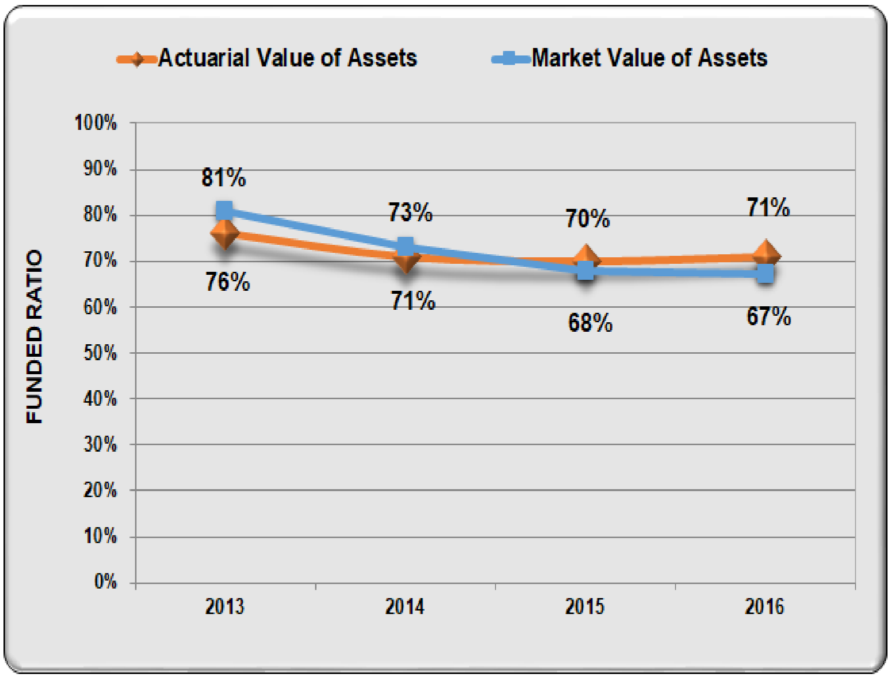
Normal Retirement Benefits: **COLA:** Annual Amount Max: 0.6%
20 years of service, or age 65
25 years of service or age 65 (new hires)
ACTUARIAL ASSUMPTIONS: **Interest:** 7% **Salary:** 3.25%



Yr ending 9/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2016	$3,812,192	$3,812,192	100%
2015	$3,486,784	$5,486,784	157%
2014	$3,245,420	$3,245,420	100%
2013	$3,243,455	$3,243,455	100%

County Employees' Retirement Fund

- Rate of return on investments equaled 5.01% (market) and 7.06% (actuarial) vs. 7.5% assumed. Investment gains and losses are smoothed over a five year period.
- CERF was established in 1994 and is funded through county receipts of fee and penalty revenue and employee contributions. The actuary comments that "the Fund is highly dependent on county contributions that are not directly related to its funding requirements or to how benefits are accrued." In addition, "actual fee based contributions for 2016 totaled $20.3 million which is less than the 2016 Actuarially Determined Contribution of $25.6 million."
- In the 2017 regular legislative session, the General Assembly passed SB 62, which, in part, increased several of the fees and penalties that are used to fund CERF. These increases are estimated to result in an additional $8 million annually. The increases become effective 1/1/18.
- Employees hired on or after 2/25/02 contribute 6% of pay (non-LAGERS members) and 4% of pay (LAGERS members).
- The plan updated its mortality tables effective with the January 1, 2016 actuarial valuation.



Funded ratios are based on asset values from January 1, 2017 valuation, page 4.

Year ending 12/31,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2017	$26,677,238	N/A	N/A
2016	$25,608,251	$20,329,625	79%
2015	$22,051,507	$19,968,537	90.6%
2014	$18,623,038	$19,781,514	106%
2013	$19,441,738	$20,348,888	105%

As of 1/1/17

Market Value: $450,770,049
Actuarial Value: $477,065,373
AAL: $672,625,878

MEMBERSHIP:
Active: 11,303 **Inactive:** 7054

BENEFITS:
Normal Retirement Formula:
$29 times years of service; Greater of flat dollar formula, TRR formula-Social Security offset or prior plan formula.

Normal Retirement Benefits:
Age 62 with 8 years of service

Social Security: Yes

COLA: Annual Max 1%, Total Max 50%, Percent of CPI: 100%

ACTUARIAL ASSUMPTIONS:
Interest: 7.5%
Salary: 2.5%

CERF

COUNTY EMPLOYEES'
RETIREMENT FUND

November 14, 2017

Mr. Michael Ruff
Joint Committee on Public Employee Retirement
State Capitol, Room 219-A
Jefferson City, MO 65101

Dear Mr. Ruff:

We appreciate the opportunity to provide updated information about the County Employees' Retirement Fund, CERF, to include significant events since our January 1, 2017 valuation.

Our actuary, Michael Zwiener of Milliman, has confirmed that CERF has experienced a significant increase in the value of its investments since the first of the year, increasing from $450 million to a bit over $495 million as of mid-October. If these investment gains hold through the end of the year, we project CERF's funded ratio on December 31, 2017 will be approximately 72%.

On a longer time horizon, it is estimated that recently enacted SB 62 will provide an increase of about 20-25% in annual funding to CERF beginning in 2018. This additional funding is important for CERF to maintain (and improve) its financial position.

During 2017, CERF passed the 5,000 mark with respect to the number of retired members and beneficiaries receiving monthly benefits.

CERF continues to be a meaningful benefit for the over 11,500 county employees who are members of the system. A significant portion of CERF members are county deputy sheriffs and road and bridge workers. The average salary of county employees is $35,481. The CERF retirement benefit is a key component of the overall compensation package of many county employees, allowing them to retire with some dignity from a lifetime of serving the public.

The Board of CERF is appreciative of the legislative support of SB 62 during the 2017 session and looks forward to continuing offer the membership valued benefits.

Sincerely,

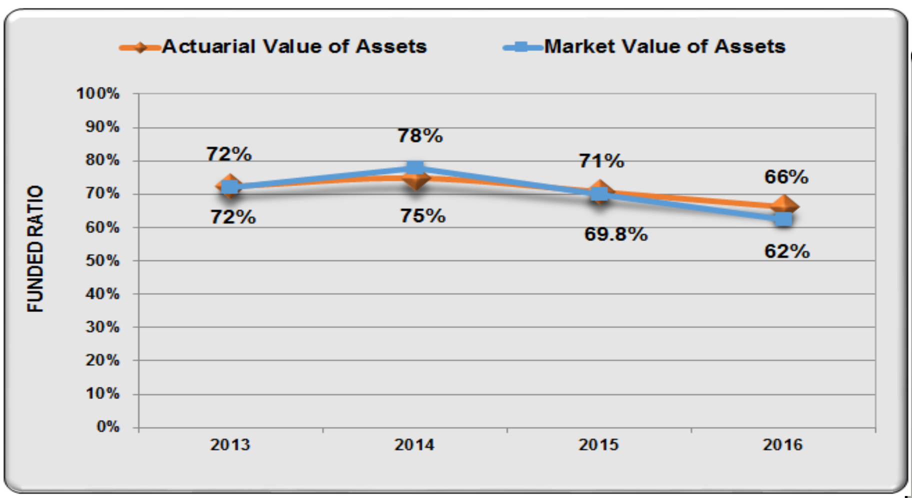
Sarah Maxwell
Executive Director

JCPER 4th Q 2017 010

2121 Schotthill Woods Drive ▪ Jefferson City, MO 65101
(573) 632-9203 ▪ Fax: (573) 761-4404

Glendale Police & Fire Pension Plan

- Investment return equaled 0.9% (market) and 5.5% (actuarial) vs. 7.5% assumed.
- The plan made four assumption changes: updated mortality tables, lowered the assumed rate of return for investments from 7.5 to 7.25, lowered the salary increase scale from 3.75 to 3.5, and adjusted the employee turnover assumption. The net impact is an increase in liabilities of 1.8%.
- Effective with the July 1, 2015 valuation, the plan changed its cost method from Aggregate to Entry Age Normal with a 20-year open amortization period for unfunded liabilities.
- The plan's actuary attributes this year's increase in the City's contribution to a poor asset return and the shortfall in the targeted contribution versus the actual contribution.
- The plan is funded from two sources: a dedicated property tax levy and an employee contribution of 3.25%. The plan's financial statements note that "these are at this time fixed sources of revenue, which are not tied to actuarial experience of this plan, and are not tied to the actuarially recommended contribution."
- The tax levy has only produced sufficient revenue to meet the full annual required contribution one time (2007) since 2002. Current tax rate of $0.08 (residential and commercial) and $0.1 (personal) per $100 of assessed valuation.
- The City's Financial Statements state that "With the plan approximately five million underfunded it has been decided by the Pension Board that steps need to be taken to reduce the underfunded amount. The steps to be taken have yet to be determined as of this writing."



Year Ending 6/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2017	$370,101	N/A	N/A
2016	$333,799	$130,235	39%
2015	$294,386	$130,695	45%
2014	$305,702	$127,993	42%
2013	$311,625	$128,584	41%

As of 7/1/16

Market Value: $4,982,916
Actuarial Value: $5,297,142
AAL: $7,994,061

MEMBERSHIP:
Active: 25 **Inactive:** 20

BENEFITS:
Normal Retirement Formula:
50% of compensation for first 20 years of service plus 1% of compensation for each year over 20 years

Normal Retirement Benefits:
Age 55 with 15 years of service

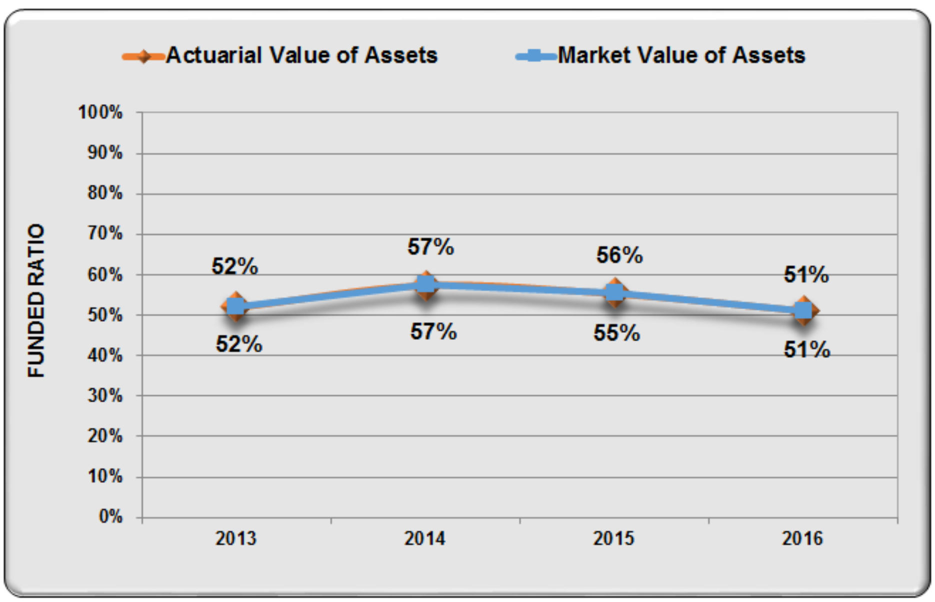
Social Security Coverage:
Yes

COLA: No COLA

ACTUARIAL ASSUMPTIONS:
Interest: 7.25%
Salary: 3.5%

HANNIBAL POLICE & FIRE RETIREMENT PLAN

- Rate of return on investments equaled 1.7% (Market) vs. 7.5% assumed.
- The plan does not smooth investment gains/losses.
- The plan lowered the assumed rate of return for investments from 7.5 to 7, updated mortality tables, and adopted a closed 20-year amortization policy with fixed bases for payment of unfunded liabilities.
- Plan members do <u>not</u> participate in Social Security.
- The actuary writes “The main driver of the increase in the unfunded liability (and thus, the decrease in funded status) was the change in interest rate from 7.5% to 7.0%, which added $1.7 million to the liability. Another large factor was a return on assets approximately $890 thousand less than expected. A third contributing factor is updating the mortality tables, which produced an increase of almost $455 thousand. Over the last five years, the city has contributed well in excess of the recommended contribution. A pattern of less than adequate funding could decrease the funded status of the Plan to a point from which it would be very difficult to recover.”
- The City changed the Plan to permit contracting with Standard Insurance for disability coverage.
- The City made multiple plan modifications effective <u>7/1/11</u> including: Increasing mandatory employee contributions from 9.5% of pay to 12%, 11.4% annual minimum City contribution (plus tax revenue) will be modified to provide that the City’s contribution will not be reduced unless the plan is determined to be at least 80% funded.
- Effective July 1, 2016, the employee contribution rate will increase by one-half percent annually until it reaches 15% on July 1, 2021.



Year ending 6/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2017	$1,193,766	N/A	N/A
2016	$1,066,446	$1,264,977	119%
2015	$984,663	$1,183,568	120%
2014	$994,809	$1,214,217	122%
2013	$1,010,251	$1,212,249	120%

<u>As of 6/30/16</u>

Market Value:
$15,628,079

Actuarial Value:
$15,628,079

AAL:
$30,515,641

MEMBERSHIP:
Active: 75 **Inactive:** 69

BENEFITS:
Normal Retirement Formula:
65% of compensation for first 25 years of service, plus 1% for each of the next 5 years of service in excess of 25
Maximum: 70% of compensation

Normal Retirement Benefits:
Age 55 or 25 years of service

Social Security Coverage: No

COLA: Ad Hoc COLA
No COLA if Funded Ratio below 50%

ACTUARIAL ASSUMPTIONS:
Interest: 7% **Salary:** 3.5%

From: Angel Zerbonia
To: Michael Ruff
Cc: Mike Benjamin (MBenjamin@hannibalfire.com)
Subject: RE: Hannibal Police & Fire
Date: Tuesday, November 14, 2017 7:56:14 AM
Importance: High

Michael:

I have no additional comments and have reached out to other Board members and our actuary, none of which have additional comments either.

Please let me know if you need anything further from me.

When things slow down a bit here, I would like to take a trip to visit you all and the committee, possibly during a meeting, if allowed. Plesae let me know what the schedules are.

Thanks,

Angel

From: Michael Ruff [mailto:mruff@senate.mo.gov]
Sent: Friday, November 3, 2017 4:48 PM
To: Angel Zerbonia <AZerbonia@hannibal-mo.gov>
Subject: Hannibal Police & Fire

Dear Angel,
Each year, the Joint Committee on Public Employee Retirement staff compiles a report for the committee's review that includes any defined benefit retirement plan that has a funded ratio of less than 70% on a market value basis. Based on information submitted to the JCPER as part of the plan year 2016 survey, Hannibal Police & Fire Retirement Plan will be included in the report. This report is designed to increase awareness of trends in plan funding and contribution levels.

I am attaching an information page relating to the retirement plan that will be presented to the committee at its fourth quarter meeting on Wednesday, November 29, 2017 at 1pm in Senate Committee Room 2. Please feel free to review this information and respond with any additional information or thoughts you deem appropriate. If you would like to respond, please provide any information or comments by Friday, November 17, 2017.

Thank you for your consideration and ongoing cooperation with the JCPER. Please do not hesitate to contact me if you have any questions or would like additional information.

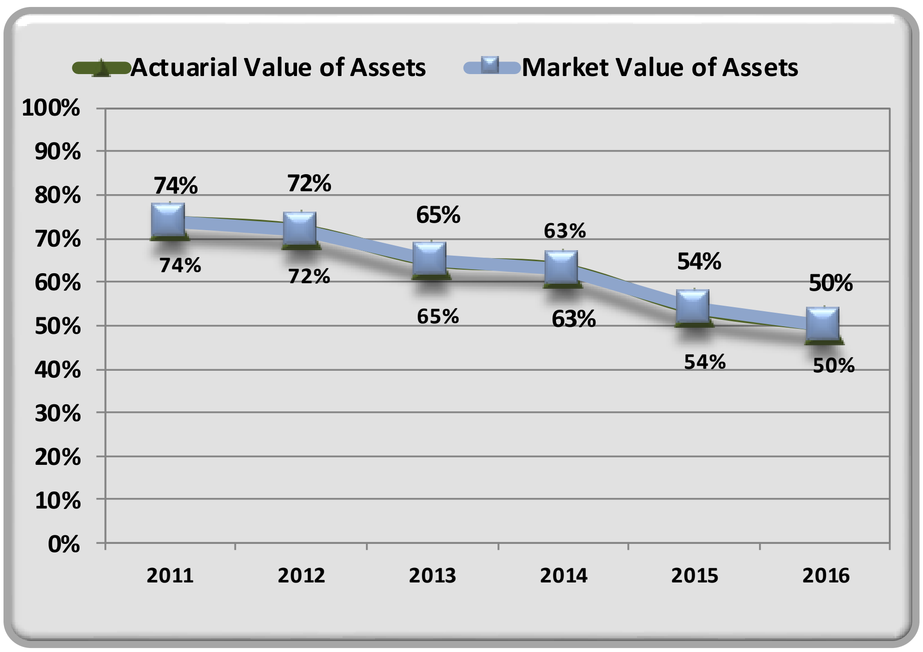
Sincerely,

Michael Ruff
Executive Director

Joint Committee on Public Employee Retirement
State Capitol, Room 219-A
Jefferson City, MO 65101
573-751-1280
mruff@senate.mo.gov

JENNINGS POLICE & FIRE RETIREMENT FUND

- Rate of return on investments equaled –1.01% (Market) vs. 6% assumed.
- In August 2017, the City Council passed legislation to enter into an agreement with LAGERS to transfer administration of the plan to LAGERS under section 70.621. The City has been working with LAGERS on the transfer, which may be completed by the end of calendar year 2017.
- Funded ratio has been decreasing since 1996 (94.29% in 1996 —> 50% in 2016). The City has met the ARC two years (2010 & 2011) since 1999. The contribution is tied to a tax levy. At the April 2016 election, voters approved a property tax increase of 12.5 cents, from 24.5 cents to 37 cents. The fund is projected to be solvent through its remaining lifetime.
- Closed 15-year period for amortization of unfunded liabilities. As of 4/1/16, 12 years remain.
- Plan was closed in 1987 with new hires joining LAGERS. No active members remain in the plan; all members are now retired.
- The Police Department was disbanded in 2011 with the St. Louis County Police Department being contracted for public safety purposes. Voters approved the dissolving of the Fire Department in August 2014 with the city cooperating with Riverview FPD for fire services.



Yr End-ing 3/31,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2016	$462,216	$189,890	41%
2015	$345,068	$194,976	57%
2014	$315,629	$195,337	62%
2013	$244,685	$203,049	83%
2012	$209,394	$203,184	97%
2011	$201,076	$210,405	105%

As of 04/01/16

Market Value: $4,184,172
Actuarial Value: $4,184,172
AAL: $8,291,582

MEMBERSHIP:
Active: 0 **Inactive:** 39

BENEFITS:
Normal Retirement Formula:
2.25% of compensation times years of service
Maximum: 50% of compensation

Normal Retirement Benefits:
Age 55 with 20 years of service
Age 65 with 15 years of service

Social Security Coverage: Yes

COLA: No COLA

ACTUARIAL ASSUMPTIONS:
Interest: 6% **Salary:** N/A

Plan Closed in 1987 with New Hires joining LAGERS.

From:	Bob Wilson
To:	Michael Ruff; rjohnson@cityofjennings.org
Cc:	Joseph Zlotopolski (jzlotopolski@gmail.com)
Subject:	RE: Jennings Police & Fire Pension Plan
Date:	Tuesday, November 7, 2017 7:47:10 AM
Attachments:	image001.png image002.png image004.png

If/when asked, my statement intends to be "Jennings has successfully entered into an agreement with LAGERS to transfer administration of the Jennings Public Safety Fund to LAGERS in accordance with 70.621 RSMo. (HB 1443 The LAGERS Legacy Plan bill) effective December 1, 2017. LAGERS will administer all facets of that plan. LAGERS has established a 15 year closed payment plan by which all obligations will be settled and all earned employee benefits shall be paid in full." This is a successful testament to the good work of the Missouri Joint Committee on Public Employee Retirement and the Missouri General Assembly in passing HB 1443.

Michael – I'll of course add any other commentary or answer other questions as needed.

Robert L. Wilson, CEBS | *Executive Secretary*

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From: Michael Ruff [mailto:mruff@senate.mo.gov]
Sent: Monday, November 06, 2017 9:06 AM
To: rjohnson@cityofjennings.org; Bob Wilson
Subject: Jennings Police & Fire Pension Plan

Dear Ms. Johnson and Mr. Wilson:
Each year, the Joint Committee on Public Employee Retirement staff compiles a report for the committee's review that includes any defined benefit retirement plan that has a funded ratio of less than 70% on a market value basis. Based on information submitted to the JCPER as part of the plan year 2016 survey and the April 1, 2016 actuarial valuation, the Jennings Police & Fire Pension Plan will be included in the report. This report is designed to increase awareness of trends in plan funding and contribution levels. For the past two years, I have been in contact with either former finance director Beverly Roche or the plan's actuary, Matt Rustige, about the plan. The JCPER is aware that plan has several unique circumstances (closed since 1987, all members are now retired) and that the City's taxpayers recently voted to increase funding for the plan. The JCPER is also aware that the City is working to transfer administration of the plan to LAGERS.

I am attaching an information page relating to the retirement plan that will be presented to the committee at its fourth quarter meeting on Wednesday, November 29, 2017 at 1pm in Senate Committee Room 2. Please feel free to review this information and respond with any additional information or thoughts you deem appropriate. If you would like to respond, please provide any information or comments by Friday, November 17, 2017.

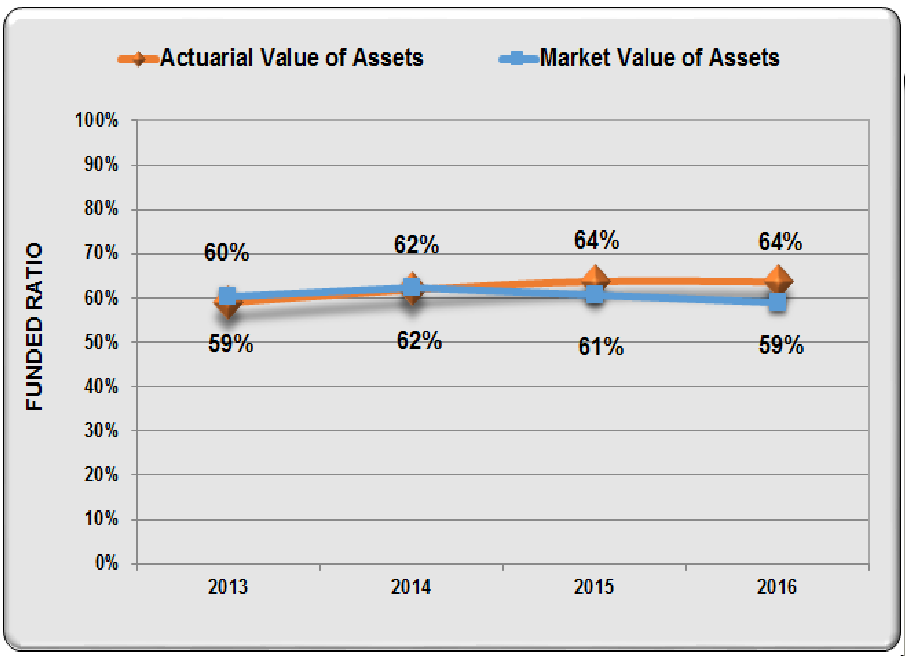
Thank you for your consideration and ongoing cooperation with the JCPER. Please do not hesitate to contact me if you have any questions or would like additional information.

Sincerely,

Michael Ruff
Executive Director
Joint Committee on Public Employee Retirement
State Capitol, Room 219-A
Jefferson City, MO 65101
573-751-1280
mruff@senate.mo.gov

JOPLIN POLICE & FIRE PENSION PLAN

- Rate of return on investments equaled 6.2% (Market) & 7.3% (Actuarial) vs. 7% assumed.
- Updated mortality tables.
- Investment gains/losses are smoothed over a 5 year period.
- Closed 30-year period as of 11/01/06 for amortization of unfunded liabilities.
- Modified plan assumptions in 2011 included, but not limited to, mortality, inflation rate and retirement rates resulted in approximately $5 million increase in plan liabilities. These modifications were based on the most recent experience study.
- A new tier was implemented for those hired after 1/31/09 with provisions including normal retirement service of 25 years (from 20) and maximum benefit of 60% of compensation (from 65%).
- Employees contribute 18.08% of pay, which is refunded at retirement. Those hired under new benefit tier contribute 10% of pay without refund.
- The actuary comments “Given the importance of benefit security to any retirement system, we suggest that contributions to the Plan in excess of those presented in this report be considered.”



FY Ending 10/31,	RECOMMENDED CONTRIBUTION*	ACTUAL CONTRIBUTION*	PERCENT CONTRIBUTED
2018	$2,706,972	N/A	N/A
2017	$2,657,867	N/A	N/A
2016	$2,708,565	$2,619,993	96.7%
2015	$2,721,986	$2,662,322	97.8%
2014	$2,737,752	$2,919,862	107%
2013	$2,580,017	$3,718,194	144%

As of 10/31/16

Market Value: **$36,129,267**
Actuarial Value: **$38,951,859**
AAL: **$61,224,035**

MEMBERSHIP:
Active: 199 **Inactive:** 160

BENEFITS:
Normal Retirement Formula:
Hired after 1/31/09: 2.2% of compensation for first 25 years of service, plus 1% for each of the next 5 years of service
Maximum: 60% of compensation

Normal Retirement Benefits:
Age 60 or 25 years of service

Social Security Coverage: No

COLA: No COLA

ACTUARIAL ASSUMPTIONS:
Interest: 7% **Salary:** 2.5%

*Contribution information is taken from Actuarial Valuation Report as of October 31, 2016, Page I-2, Schedule of Employer Contributions

From: Haase, Leslie
To: Michael Ruff
Subject: RE: Joplin Police & Fire Pension Plan
Date: Friday, November 10, 2017 8:27:13 AM

Thanks, Michael. I don't believe we have any comments.

Leslie

From: Michael Ruff [mailto:mruff@senate.mo.gov]
Sent: Monday, November 06, 2017 9:13 AM
To: Haase, Leslie
Subject: Joplin Police & Fire Pension Plan

Dear Ms. Haase:
Each year, the Joint Committee on Public Employee Retirement staff compiles a report for the committee's review that includes any defined benefit retirement plan that has a funded ratio of less than 70% on a market value basis. Based on information submitted to the JCPER as part of the plan year 2016 survey, the Joplin Police & Fire Pension Plan will be included in the report. This report is designed to increase awareness of trends in plan funding and contribution levels.

I am attaching an information page relating to the pension plan that will be presented to the committee at its fourth quarter meeting on Wednesday, November 29, 2017 at 1pm in Senate Committee Room 2. Please feel free to review this information and respond with any additional information or thoughts you deem appropriate. If you would like to respond, please provide any information or comments by Friday, November 17, 2017.

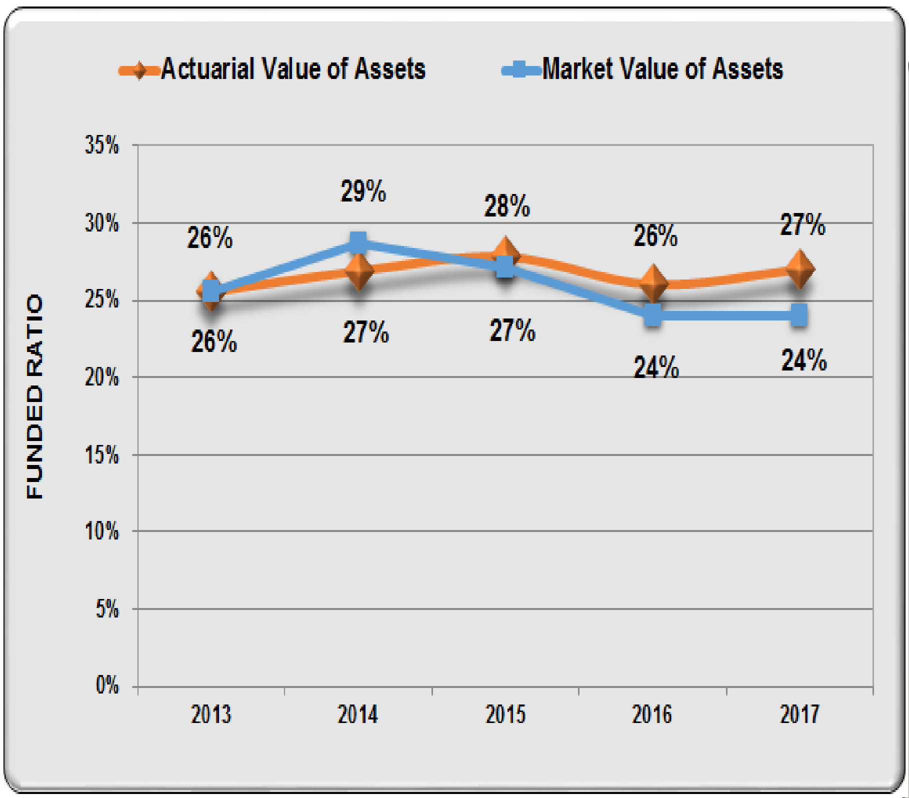
Thank you for your consideration and ongoing cooperation with the JCPER. Please do not hesitate to contact me if you have any questions or would like additional information.

Sincerely,

Michael Ruff
Executive Director
Joint Committee on Public Employee Retirement
State Capitol, Room 219-A
Jefferson City, MO 65101
573-751-1280
mruff@senate.mo.gov

JUDICIAL RETIREMENT PLAN

- For the year ending 6/30/17, rate of return on investments equaled 3.53% (Market) and 5.18% (Actuarial) vs. 7.65% assumed.
- In June 2017, the board made no changes to its policy of lowering its assumed rate of return. As a result, the rate decreased from 7.65 to 7.5. The policy provides an additional decrease of 0.15 annually until it reaches 7.05.
- In plan year 2014, the board adopted a closed 30-year amortization period for unfunded liabilities.
- New tier provisions were passed in 2010 requiring increased age and service requirements, as well as employee contributions of 4% for judges serving for the first time on or after 01/01/11.
- Previously, the Board of Trustees voted to certify an annual contribution rate minimum of 58.45% of payroll until the plan's funded ratio is at least 80%.
- Prior to 1998, the plan was funded on a pay-as-you-go basis.
- The employer continues to meet or exceed the ADC.



FY Ending 6/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2017	$32,670,710	$34,246,826	104.8%
2016	$33,642,497	$33,642,497	100%
2015	$32,696,686	$32,696,686	100%
2014	$29,264,877	$29,264,877	100%
2013	$28,330,648	$28,330,648	100%

As of 6/30/17

Market Value: **$137,634,941**
Actuarial Value: **$151,828,631**
AAL: **$564,417,925**

MEMBERSHIP:
Active: 410 **Inactive:** 585*

BENEFITS:
Normal Retirement Formula:
50% of compensation;
Less than service requirement:
Pro-rated benefit based on service

Normal Retirement Benefits:
Age 62 with 12 years of service;
Age 60 with 15 years of service;
Age 55 with 20 years of service

Serving for first time on or after 01/01/11:
Age 67 with 12 years of service, or
Age 62 with 20 years of service

Social Security Coverage: Yes

COLA: Annual Amount Max: 5%
Percent of CPI: 80%

Actuarial Assumptions:
Interest: 7.5% **Salary:** 3%

*Includes one member on leave of absence.

MOSERS®
Missouri State Employees' Retirement System

Mailing Address
PO Box 209
Jefferson City, MO 65102-0209

Office Location
907 Wildwood Drive
Jefferson City, MO 65109

November 14, 2017

Mr. Michael Ruff, Executive Director
Joint Committee on Public Employee Retirement
State Capitol, Room 219-A
Jefferson City, MO 65101

Dear Michael:

Thank you for the opportunity to respond to the inclusion of the Judicial Retirement Plan (Judicial Plan) on the annual "Watch List" of the Joint Committee on Public Employee Retirement (JCPER). We would like to offer the following information for the Committee's review.

As you are aware, the Judicial Plan was operated on a pay-as-you-go basis prior to 1998 when the law was changed to require that the plan be funded on an actuarial basis. The funded status of the Judicial Plan was 0% in 1999 and has increased to the June 30, 2017 funded ratio of 26.9%.

In June 2016, the MOSERS Board of Trustees adopted a policy to reduce the plan's investment rate of return assumption from 8.0% to 7.65%. This policy provides for an annual reduction of the plan's investment rate of return assumption by 15 basis points until reaching 7.05% for the June 30, 2020 actuarial valuation (see table below).

Actuarial Valuation Date	Employer Contribution Applied	ROR Assumption	ROR Assumption (without Inflation Assumption)
June 30, 2016	FY18	7.65%	5.15%
June 30, 2017	**FY19**	**7.50%**	**5.00%**
June 30, 2018	FY20	7.35%	4.85%
June 30, 2019	FY21	7.20%	4.70%
June 30, 2020	FY22	7.05%	4.55%

This board-adopted policy is intended to more closely align the fund's investment return assumption with future capital market expectations. While public pension funds across the state and nation are re-evaluating the appropriate level of investment return assumption to reduce the long-term investment risk, such reduction often requires an increased Employer Contribution Rate to the plan and results in a decreased Funded Ratio. The information contained in the June 30, 2017 annual actuarial valuation (see below) illustrates how a change in the investment return assumption rate can significantly affect the plan's Employer Contribution Rate and Funded Ratio.

JUDICIAL PLAN SENSITIVITY ANALYSIS

Investment Return Assumption	**6.50%**	**7.00%**	**7.50%**	**8.00%**	**8.50%**
Total Employer Contribution (% of pay)	69.44%	66.46%	63.71%	61.17%	58.80%
Total Employer Contribution ($ in millions)	$43.0	$41.1	$39.4	$37.9	$36.4
Actuarial Value of Assets	$151.8	$151.8	$151.8	$151.8	$151.8
Actuarial Accrued Liability	$622.2	$592.2	$564.4	$538.8	$515.0
Funded Ratio	24.4%	25.6%	26.9%	28.2%	29.5%

2010 Pension Reform

As you are aware, the General Assembly passed pension reform relative to judges in the 2010 special session. This reform was implemented as the "Judicial Plan 2011" for judges serving for the first time on or after January 1, 2011. As included in the June 30, 2017 annual actuarial valuation, the ongoing annual cost of the **Judicial Plan 2011** (known as the "Employer Normal Cost") is 15.93% of pay, compared to the **pre-2011** annual cost of 23.42% of pay. Approximately 32% of the 410 Judicial Plan active employees are Judicial Plan 2011 members.

Judicial Plan Actuarial Valuation Results as of 06/30/17	**Percents of Payroll**		
	Pre 01/01/11 Hires	**Post 01/01/11 Hires**	**Weighted Average**
Normal Cost	23.42%	19.93%	22.29%
Less **Member** Contributions	0.00%	4.00%	1.29%
Employer Normal Cost	23.42%	15.93%	21.00%
Unfunded Actuarial Accrued Liabilities (UAAL) (27-year level % of payrol amortization)			42.71%
Total FY19 Computed Employer Contribution Rate			63.71%
Estimated Employer Contribution ($ in Millions)			$39.4

We hope this information is helpful to the JCPER as it conducts its proceedings. If you have any questions or we can provide additional information, please do not hesitate to contact our office.

Sincerely,

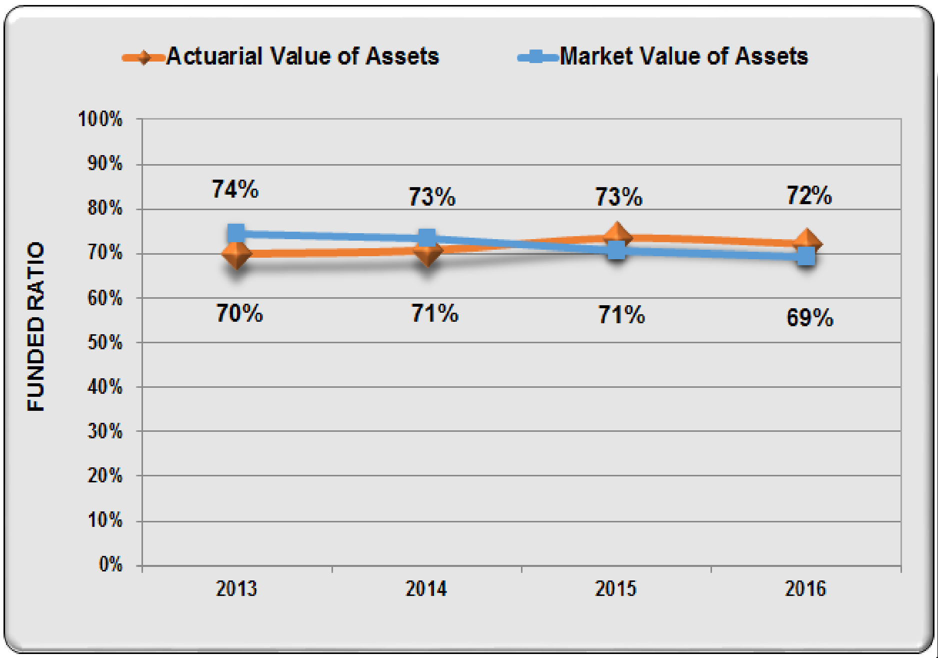
John Watson

John Watson
Executive Director

cc: MOSERS Board of Trustees

Kansas City Area Transportation Authority Union Employees' Funded Pension Plan

- The rate of return on investments was 7.52% (Market) and 7.58% (Actuarial) versus 7.5%.
- Lowered the assumed rate of return for investments from 7.5% to 7.0%.
- Investment gains and losses are smoothed over five years.
- Adopted a closed amortization policy for unfunded liabilities on 1/1/13. Initial unfunded liabilities are amortized over a closed 30-year period. Additional unfunded liabilities are amortized over layered closed 15-year periods.
- Employees contribute 3.75% of pay.



Year ending 12/31,	RECOMMENDED EMPLOYER CONTRIBUTION*	ACTUAL CONTRIBUTION*	PERCENT CONTRIBUTED
2016	$2,530,180	$2,530,180	100%
2015	$2,436,703	$2,436,703	100%
2014	$2,210,419	$2,490,987	112%
2013	$2,161,149	$2,050,024	95%
2012	$2,348,733	$2,090,240	89%
2011	$2,441,900	$2,051,196	84%

As of 1/1/17

Market Value: **$45,288,373**
Actuarial Value: **$47,143,196**
AAL: **$65,361,393**

MEMBERSHIP:
Active: 525 **Inactive:** 270

BENEFITS:
Normal Retirement Formula:
1.28% of Average Monthly Earnings times Credited Service (no maximum).

Normal Retirement Eligibility:
Age 62 and 10 years of service or Age 60 with 30 years of service.

Social Security Coverage: Yes

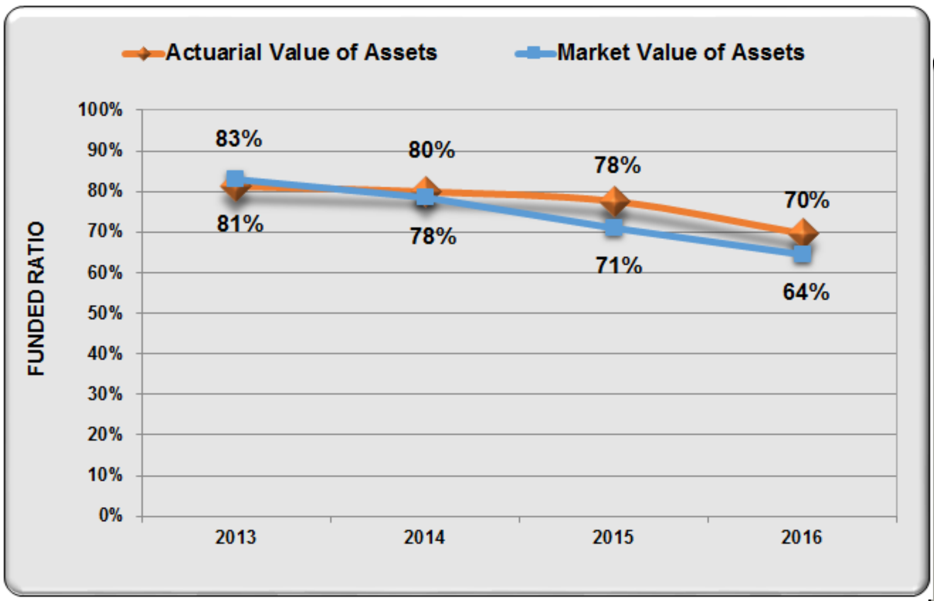
COLA: None

ACTUARIAL ASSUMPTIONS:
Interest: 7%
Salary: 4.25%

*Contribution history is taken from Kansas City Area Transportation Authority Union Employees' Funded Pension Plan, Financial Report, December 31, 2016, page 16.

Kansas City Public School Retirement System

- For the year ending 12/31/16, rate of return on investments equaled 7.39% (Market) and 5.5% (Actuarial) versus 8.0% assumed.
- Completed a five year experience study for the period ending in 2015. Adjusted multiple assumptions, including, but not limited to: lowered assumed rate of return from 8.0 to 7.75; decreased inflation from 3 to 2.75; adjusted mortality tables; reduced disability rates.
- Changed the amortization policy for payment of unfunded liabilities from an open 30-year period to a layered approach: initial UAAL as of 1/1/17 is amortized over a closed 30-year period with additional pieces amortized over a closed 20-year period.
- The General Assembly passed legislation in 2013 that established a new tier for employees hired on or after January 1, 2014. New hires receive a 1.75 benefit multiplier (versus 2.0) and increased age and service requirements of age 62 & five years of service or rule of 80 (versus age 60 & five years of service or rule of 75). The legislation gave the board of trustees authority to increase the employer and employee contribution rates to 9% each, which the board has done.
- The actuary writes "The System's funded ratio was very strong (near or above 100%) until recent years when the recognition of the market downturn of 2008 has been fully reflected. Future investment experience will be the largest driver of the System's funded ratio in future years. However, contributions at the full actuarial contribution rate will also be important to the System's long-term funding."
- The actuary projects a declining funded ratio over a thirty-year period and urges the system's board of trustees to study the situation and make appropriate modifications, which might include benefit changes or increase in contribution rates.



Year ending 12/31,	RECOMMENDED CONTRIBUTION* (In thousands)	ACTUAL CONTRIBUTION* (In thousands)	PERCENT CONTRIBUTED
2016	20,224	16,280	80%
2015	18,856	14,492	77%
2014	19,401	13,288	68%
2013	20,995	12,094	58%

*Contribution history from PSRS-KC Financial Statements, Years Ended December 31, 2016 and 2015, Page 28, Schedules of Employers' Contributions.

As of 1/1/17

Market Value: $631,442,613
Actuarial Value: $684,412,437
AAL: $981,514,827

MEMBERSHIP:
Active: 3701 **Inactive:** 6820*

BENEFITS:
Normal Retirement Formula:
2% of compensation times years of service. Hired on/after 1/1/14: 1.75% times years of service.

Normal Retirement Eligibility:
Age 60 with 5 years of service or Rule of 75. Hired on/after 1/1/14: Age 62 with 5 years of service or rule of 80.

Social Security Coverage: Yes

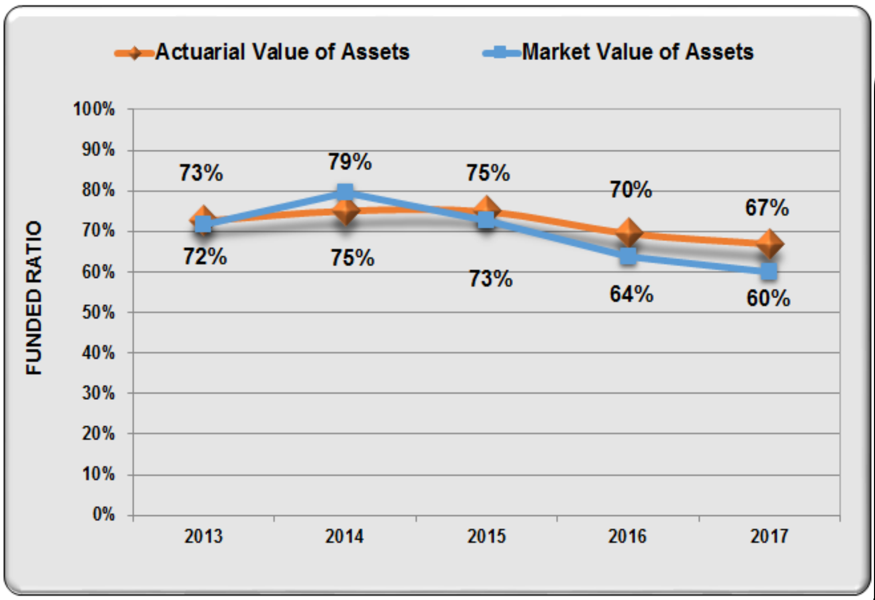
COLA: Ad Hoc COLA
Annual Max: 3%

ACTUARIAL ASSUMPTIONS:
Interest: 7.75%
Salary: 3.5%

*34% of inactive members are terminated nonvested and will not receive a pension benefit as of 1/1/17.

Missouri State Employees' Retirement System

- For the year ending June 30, 2017, rate of return on investments equaled 3.45% (market) and 4.97% (actuarial) vs. 7.65% assumed.
- In June 2017, the board made no changes to its policy of lowering its assumed rate of return. As a result, the rate decreased from 7.65 to 7.5. The policy provides an additional decrease of 0.15 annually until it reaches 7.05.
- The computed employer contribution rate as a percent of payroll increased to 20.21% for FY19 from 19.45% in FY18. The plan had an experience loss due to investment losses, higher than expected salary increases, active retirement experience, and service purchases.
- The actuary explains that "The actuarial required contribution has been made each year, but unfavorable asset and liability experience, along with significant changes in the actuarial assumptions, has caused MSEPs to go from almost 100% funded in 2001 to the current 67% level."
- The board has implemented a terminated vested buy-out program authorized by SB 62 (2017), which is likely to reduce actuarial accrued liabilities.
- New tier provisions were passed in 2010 requiring increased age and service requirements, as well as employee contributions of 4% for employees hired for the first time on or after 01/01/11. The actuary writes "...since all new employees are covered under a less costly benefit structure, until all new employees are covered under MSEP 2011 benefits, the normal cost percentage will continue to decrease."



Yr End-ing June 30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	% CONTRIB-UTED
2017	$322,772,697	$335,217,422	104%
2016	$329,957,369	$329,957,369	100%
2015	$329,752,832	$329,752,832	100%
2014	$326,370,336	$326,370,336	100%
2013	$274,655,284	$274,655,284	100%

As of 6/30/17

Market Value: $7,945,358,298
Actuarial Value: $8,872,381,848
AAL: $13,152,273,895

MEMBERSHIP:
Active: 48,910 **Inactive:** 71,064

BENEFITS:
Normal Retirement Formula:
MSEP 2000: 1.7% of compensation times years of service, plus 0.8% to age 62 (under Rule of 80)

Normal Retirement Eligibility:
Age 62 with 5 years of service or Rule of 80

Hired for the first time on or after 1/1/11: Age 67 with 10* years of service or Rule of 90

Social Security Coverage: Yes

COLA: Annual Max 5%
Percent of CPI: 80%

ACTUARIAL ASSUMPTIONS:
Interest: 7.5%
Salary: 3.0%

*Section 104.1091 of CCS/HCS/SS/SB 62 (2017) reduced vesting period to 5 years effective 1/1/18.

MOSERS®
Missouri State Employees' Retirement System

Mailing Address
PO Box 209
Jefferson City, MO 65102-0209

Office Location
907 Wildwood Drive
Jefferson City, MO 65109

November 14, 2017

Mr. Michael Ruff, Executive Director
Joint Committee on Public Employee Retirement
State Capitol, Room 219-A
Jefferson City, MO 65101

Dear Michael:

Thank you for the opportunity to respond to the inclusion of the Missouri State Employees' Retirement System (MOSERS) on the annual "Watch List" of the Joint Committee on Public Employee Retirement (JCPER). We would like to offer the following information for the Committee's review.

In June 2016, the MOSERS Board of Trustees adopted a policy to reduce the plan's investment rate of return assumption from 8.0% to 7.65%. This policy provides for an annual reduction of the plan's investment rate of return assumption by 15 basis points until reaching 7.05% for the June 30, 2020 actuarial valuation (see table below).

Actuarial Valuation Date	**Employer Contribution Applied**	**ROR Assumption**	**ROR Assumption (without Inflation Assumption)**
June 30, 2016	FY18	7.65%	5.15%
June 30, 2017	**FY19**	**7.50%**	**5.00%**
June 30, 2018	FY20	7.35%	4.85%
June 30, 2019	FY21	7.20%	4.70%
June 30, 2020	FY22	7.05%	4.55%

This board-adopted policy is intended to more closely align the fund's investment return assumption with future capital market expectations. While public pension funds across the state and nation are re-evaluating the appropriate level of investment return assumption to reduce the long-term investment risk, such reduction often requires an increased Employer Contribution Rate to the plan and results in a decreased Funded Ratio. The information contained in the June 30, 2017 annual actuarial valuation (see below) illustrates how a change in the investment return assumption rate can significantly affect the plan's Employer Contribution Rate and Funded Ratio.

MOSERS SENSITIVITY ANALYSIS

Investment Return Assumption	**6.50%**	**7.00%**	**7.50%**	**8.00%**	**8.50%**
Total Employer Contribution (% of pay)	25.32%	22.70%	20.21%	17.80%	15.49%
Total Employer Contribution ($ in millions)	$529.6	$474.8	$422.7	$372.3	$324.0
Actuarial Value of Assets	$8,872.4	$8,872.4	$8,872.4	$8,872.4	$8,872.4
Actuarial Accrued Liability	$14,649.4	$13,867.7	$13,152.3	$12,496.1	$11,893.0
Funded Ratio	60.6%	64.0%	67.5%	71.0%	74.6%

2010 Pension Reform

As you are aware, the General Assembly passed pension reform relative to state employees in the 2010 special session. This reform was implemented as the "MSEP 2011" for state employees hired for the first time on or after January 1, 2011. As included in the June 30, 2017 annual actuarial valuation, the ongoing annual cost of the **MSEP 2011** (known as the "Employer Normal Cost") is <u>3.62% of pay</u>, compared to the **pre-2011** annual cost of <u>8.77% of pay</u>. Approximately 41% of the 48,900 MOSERS' active employees are MSEP 2011 members.

Actuarial Valuation Results as of 06/30/17	**Percents of Payroll**		
	MSEP & MSEP 2000	**MSEP 2011**	**Weighted Average**
Normal Cost	8.77%	7.62%	8.39%
Less **Member** Contributions	0.00%	4.00%	1.34%
Employer Normal Cost	8.77%	3.62%	7.05%
Unfunded Actuarial Accrued Liabilities (UAAL) (27-year level % of payrol amortization)			13.16%
Total FY19 Computed Employer Contribution Rate			20.21%
Estimated Employer Contribution ($ in Millions)			$422.7

Important developments since June 30, 2017

With the passage of Senate Bill 62 during the 2017 legislative session, MOSERS' staff has facilitated a terminated-vested buyout program to 17,000 MOSERS members who are vested in a retirement benefit with MOSERS but have since left state employment. This program has a participation window that closes on November 30, 2017. As of November 14, 2017:

●MOSERS has received 2,865 applications for participation in the Buyout Program,
●Total MOSERS liability eliminated through the program exceeds $61 million and net liability eliminated exceeds $24 million.

Senate Bill 62 also contained a legislative package that reduces the vesting period from 10 years to 5 years for active members of the MSEP 2011 tier. According to the June 30, 2017 actuarial valuation, the reduced vesting legislative package resulted in **reduced** MOSERS' plan liability of approximately $1.7 million.

We hope this information is helpful to the JCPER as it conducts its proceedings. If you have any questions or we can provide additional information, please do not hesitate to contact our office.

Sincerely,

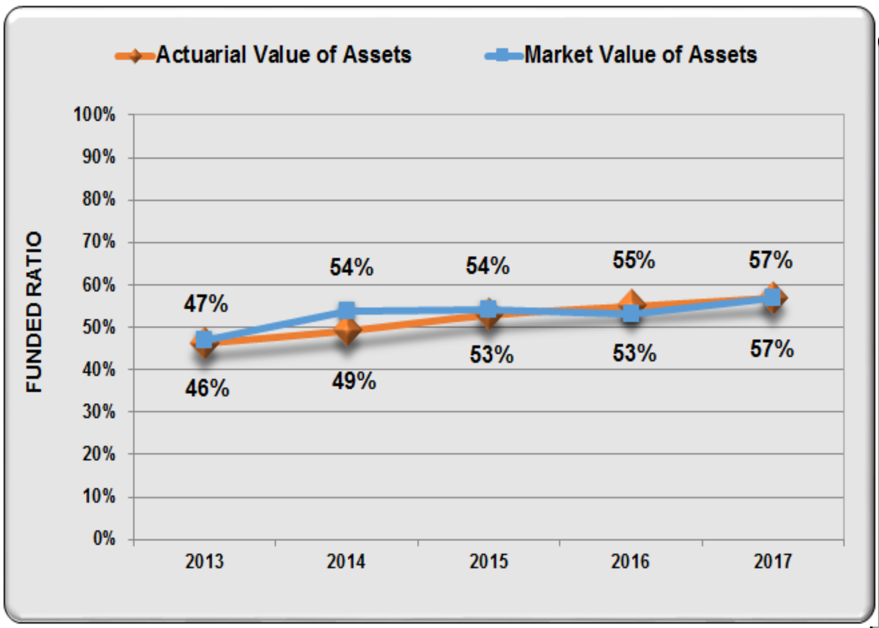
John Watson

John Watson
Executive Director

cc: MOSERS Board of Trustees

MoDOT & Highway PATROL EMPLOYEES' RETIREMENT SYSTEM

- Rate of return on investments equaled 11.2% (Market) and 6.2% (Actuarial) vs. 7.75% assumed.
- Investment gains/losses are smoothed over a 3-year period.
- The next experience study will likely be conducted before the 6/30/18 valuation date, at which time the actuary may recommend adjusting certain assumptions. In addition, the actuary recommends that "economic assumptions be reviewed annually each spring before the next valuation cycle begins."
- The board has implemented a terminated vested buy-out program as authorized by SB 62 (2017). The program may reduce plan liabilities.
- New tier provisions were passed in 2010 requiring increased age and service requirements, increased vesting period and employee contributions for employees hired for the first time on or after 01/01/11. As of 06/30/17, 2,255 members were covered under the 2011 tier.
- Employees hired for the first time on or after 1/1/11 contribute 4% of pay.
- As of 6/30/17, closed 7-year amortization period for unfunded retiree liabilities and closed 22-year amortization period for the remaining unfunded liabilities (for the plan year beginning 7/1/18).
- In September 2014, the Board established a "rate stabilization reserve fund" from experience gains to attempt to maintain the employer contribution rate at or close to its current level.
- The Employer continues to meet the ADC.



	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
16/17	$206,562,924	$206,562,924	100%
15/16	$199,609,396	$199,609,396	100%
14/15	$200,638,571	$200,638,571	100%
13/14	$183,358,841	$183,358,841	100%
12/13	$170,836,117	$170,836,117	100%

As of 6/30/17

Market Value: **$2,169,775,040**
Actuarial Value: **$2,172,787,144**
AAL: **$3,802,443,730**

MEMBERSHIP:
Active: 7,456 **Inactive:** 11,155

BENEFITS:
Normal Retirement Formula:
MSEP 2000: 1.7% of compensation times years of service, plus 0.8% to Age 62 (under Rule of 80)

Normal Retirement Benefits:
Age 62 with 5 years service, or Rule of 80 (Age 48)
Uniformed Patrol: Mandatory retirement at Age 60
Hired for first time on or after 01/01/11*:
Age 67 w 10 years service, or Rule of 90 (Age 55)
Uniformed Patrol: Age 55 with 10 years service. Mandatory retirement age of 60.

Social Security Coverage: Yes

COLA: Annual Amount Max: 5%
Percent of CPI: 80%

ACTUARIAL ASSUMPTIONS:
Interest: 7.75% **Salary:** 3.50%

*Section 104.1091 of CCS/HCS/SS/SB 62 (2017) reduced vesting period to 5 years effective 1/1/18.

From: Scott Simon
To: Michael Ruff
Subject: RE: MPERS
Date: Tuesday, November 7, 2017 11:25:06 AM

Michael, Just a couple things to mention. Readers might believe mandatory retirement does not apply under the 2011 Tier since it is not also included there. I understand most of our membership is covered by the closed plans (which includes Year 2000), nonetheless, the "current" benefit provisions for new hires are the 2011 Tier provisions—seems to me that you could highlight those details and forgo the closed plan details.

Thanks for the chance to review.
ss

MPERS
Serving those who keep us safe.
Scott L Simon | Executive Director | MoDOT and Patrol Employees' Retirement System
Office Location: 1913 William St., Jefferson City, MO 65109 **Mailing Address:** Post Office Box 1930, Jefferson City, MO 65102-1930
Telephone Number: (573) 298-6020 **Toll Free:** 1-800-270-1271 **Admin. Fax:** (573) 522-6111 **Website:** www.mpers.org

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From: Michael Ruff [mailto:mruff@senate.mo.gov]
Sent: Monday, November 06, 2017 9:34 AM
To: Scott Simon <Scott.Simon@mpers.org>
Subject: MPERS

Dear Scott:
Each year, the Joint Committee on Public Employee Retirement staff compiles a report for the committee's review that includes any defined benefit retirement plan that has a funded ratio of less than 70% on a market value basis. Based on the June 30, 2017 actuarial valuation, MPERS will be included in the report. This report is designed to increase awareness of trends in plan funding and contribution levels.

I am attaching an information page relating to MPERS that will be presented to the committee at its fourth quarter meeting on Wednesday, November 29, 2017 at 1pm in Senate Committee Room 2. Please feel free to review this information and respond with any additional information or thoughts you deem appropriate. If you would like to respond, please provide any information or comments by Friday, November 17, 2017.

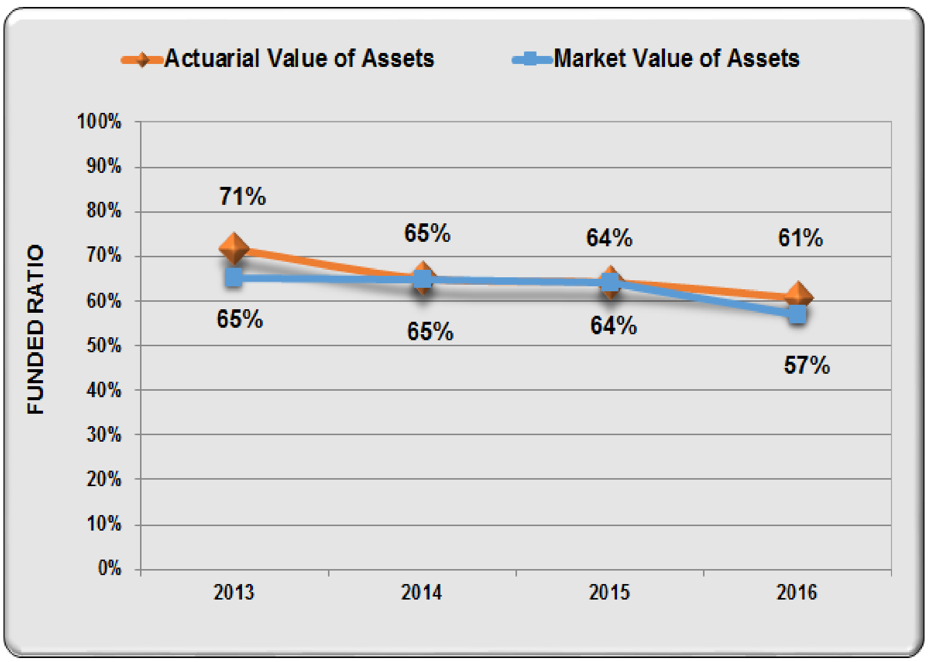
Thank you for your consideration and ongoing cooperation with the JCPER. Please do not hesitate to contact me if you have any questions or would like additional information.

Sincerely,

Michael Ruff
Executive Director
Joint Committee on Public Employee Retirement
State Capitol, Room 219-A
Jefferson City, MO 65101
573-751-1280
mruff@senate.mo.gov

OVERLAND POLICE RETIREMENT FUND

- Rate of return on investments equaled –2.3% (Market) and 4.2% (Actuarial) vs. 7% assumed.
- City Council adopted three changes to the plan in 2017: increased employee contributions from 5% to 7.5%, phased out a retroactive COLA for certain members, and changed the refund of employee contributions upon retirement provision so employee contributions made after April 1, 2017 will not be refunded upon retirement.
- The employer contribution is supported by a tax levy of $0.12 that has been insufficient to meet the ADC since 2008. In August 2017, the voters approved a tax levy increase. On 9/25/17, the City Council set a tax rate of $0.24 residential, $0.36 commercial, $0.367 residential. Certified by the State Auditor on 9/27/17.
- The City made multiple changes to actuarial assumptions in 2014 based on the results of a five-year experience study, including lowering the assumed rate of return from 7.5 to 7.0 and updating mortality tables.
- The plan smooths investment gains and losses over five years.



	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2017	$1,136,068	N/A	N/A
2016	$1,085,072	$242,311	22%
2015	$1,072,917	$251,812	23%
2014	$863,157	$240,878	28%
2013	$801,961	$268,988	34%
2012	$693,886	$271,164	39%

As of 04/01/16

Market Value: **$12,158,302**
Actuarial Value: **$12,998,479**
AAL: **$21,251,150**

MEMBERSHIP:
Active: 47 **Inactive:** 39

BENEFITS:
Normal Retirement Formula:
2.5% of compensation for first 20 years of service, plus 1.5% for each of the next 10 years of service

Normal Retirement Benefits:
20 years of service, or
Age 62 w/ 18 years of service, or
SSA full retirement age w/ 5 years of service

Social Security Coverage:
Yes

COLA: Annual Max: 3%
Percent of CPI: 60%

ACTUARIAL ASSUMPTIONS:
Interest: 7% **Salary:** 3.5%

From: Melissa Burton
To: Michael Ruff
Subject: Re: Overland Police Retirement Fund
Date: Monday, November 6, 2017 10:01:06 AM

Michael,

I will forward to the Police Pension Board of Trustees for their action. Since you have covered all the changes made to the plan, I am not sure the Board will send a response.

Thank you for the information.

Respectfully,

Melissa

Melissa J. Burton, MMC/MPCC
City Clerk
City of Overland
9119 Lackland Road
Overland, MO 63114
(314) 428-4321

>>> Michael Ruff <mruff@senate.mo.gov> 11/6/2017 9:40 AM >>>
Dear Melissa:
Each year, the Joint Committee on Public Employee Retirement staff compiles a report for the committee's review that includes any defined benefit retirement plan that has a funded ratio of less than 70% on a market value basis. Based on information submitted to the JCPER as part of the plan year 2016 survey, the Overland Police Retirement Fund will be included in this report. This report is designed to increase awareness of trends in plan funding and contribution levels.

I am attaching an information page relating to the retirement plan that will be presented to the committee at its fourth quarter meeting on Wednesday, November 29, 2017 at 1pm in Senate Committee Room 2. Please feel free to review this information and respond with any additional information or thoughts you deem appropriate. If you would like to respond, please provide any information or comments by Friday, November 17, 2017.

You and I have spoken several times about the recent plan changes and the increase in the tax levy used to fund the plan. I have included these changes on the information page and I plan to clarify to the committee that these changes were made after the 4/1/16 actuarial valuation.

Thank you for your consideration and ongoing cooperation with the JCPER. Please do not hesitate to contact me if you have any questions or would like additional information.

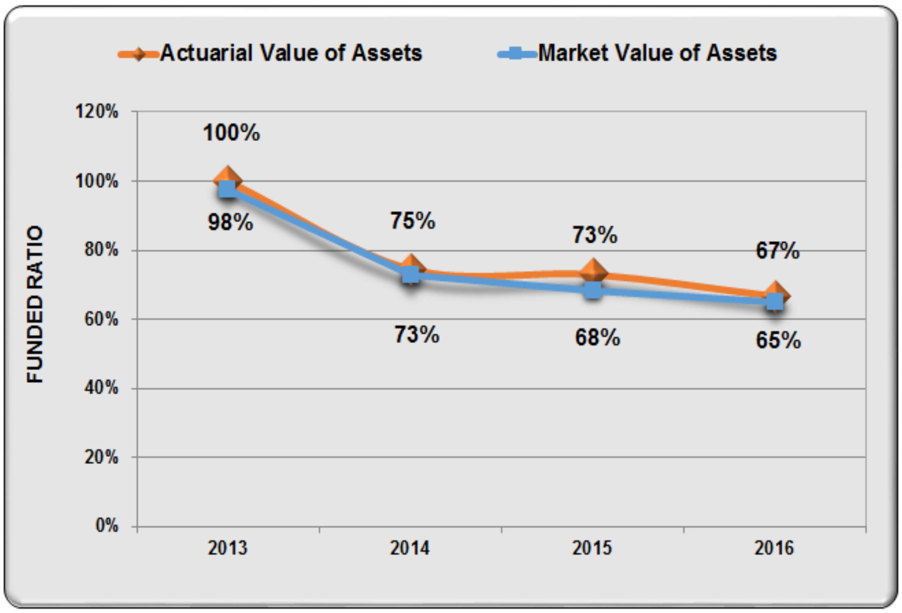
Sincerely,

Michael Ruff
Executive Director
Joint Committee on Public Employee Retirement

State Capitol, Room 219-A
Jefferson City, MO 65101
573-751-1280
mruff@senate.mo.gov

POPLAR BLUFF POLICE & FIRE PENSION PLAN

- Market rate of return on investments equaled 6.46% vs. 5.5% assumed.
- Effective with the 1/1/15 valuation, the plan lowered the assumed rate of return for investments from 5.75% to 5.5%.
- Prior to the 1/1/17 valuation, the plan's actuary conducted a comprehensive review of assumptions. Effective with the 1/1/17 valuation, it: lowered the assumed rate of return from 5.50% to 5%, lowered the inflation assumption from 2.25% to 2%, lowered the salary projection assumption from 3.25% to 3%, and lowered the compensation increase limit from 2.25% to 2%. The net impact is an increase to the ADC.
- The City has not contributed 100% of the ADC beginning with plan year 2012. The actuary has noted that "contributing less than the actuarially determined contribution will increase your next year's amount."
- The actuary commented that people who were expected to retire did not. Instead, they remained active employees and earned additional retirement benefits. "The net effect on costs is an increase because the value of the extra benefit is more valuable than the year of payments they did not receive."



January 1,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2017	$811,036	N/A	N/A
2016	$579,058	$330,864	57%
2015	$543,721	$235,832	43%
2014	$507,503	$233,861	46%
2013	$473,003	$244,411	52%
2012	$333,732	$225,236	67%

As of 1/1/17

Market Value: **$12,405,092***
Actuarial Value: **$12,694,596**
AAL: **$19,018,220**

MEMBERSHIP:
Active: 80 **Inactive:** 70

Normal Retirement Formula:
2% of compensation for the first 20 years of service, plus 1.5% for each additional year of service. Maximum: $1650 per month.

Normal Retirement Eligiblity:
Later of age 55 or 5 years of service

Social Security Coverage: No

COLA: No COLA

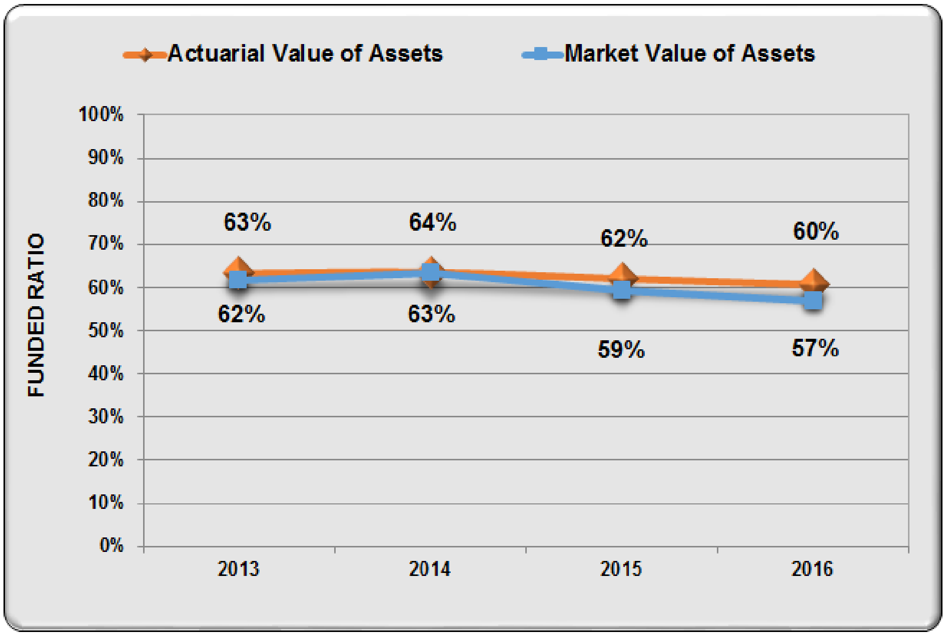
ACTUARIAL ASSUMPTIONS:

Interest: 5% **Salary:** 3%

*Includes contributions of $247,211 received on or after 1/1/17.

RAYTOWN POLICE OFFICERS' RETIREMENT FUND

- Rate of return on investments equaled 6.53% (market) and 5% (actuarial) vs. 7.5% assumed.
- Effective with the 1/1/15 valuation, the plan implemented five year smoothing of investment gains and losses "thus smoothing the volatility of market returns and producing more stability in contribution amounts."
- The plan utilizes a closed 30-year period for amortization of unfunded actuarial accrued liabilities that began 1/1/14.
- An employee contribution of 3% of pay was ceased in 2000 when the Plan was 101% funded.
- The actuary comments "The Plan has been making progress toward a safe funding level. The City policy to contribute the recommended contribution will allow the funded status to slowly improve."
- The Plan was frozen as of December 31, 2013 with members moving to LAGERS.



Yr ended 12/31,	RECOMMENDED CONTRIBUTION*	ACTUAL CONTRIBUTION*	PERCENT CONTRIBUTED
2017	$608,134	N/A	N/A
2016	$562,862	$562,862	100%
2015	$513,291	$510,320	99.4%
2014	$508,285	$509,880	100%
2013	$660,842	$660,842	100%
2012	$678,787	$686,270	101%

* Contribution history taken from January 1, 2017 Valuation, Page 18, Ten-Year Schedule of Contributions.

As of 1/1/17

Market Value: **$10,110,193**
Actuarial Value: **$10,744,781**
AAL: **$17,763,413**

MEMBERSHIP:
Active: 42 **Inactive:** 45

BENEFITS:
Normal Retirement Formula:
2.5% of compensation for first 20 years of service, plus 1% for each of the next 10 years of service—Benefits are frozen as of 12/31/13.

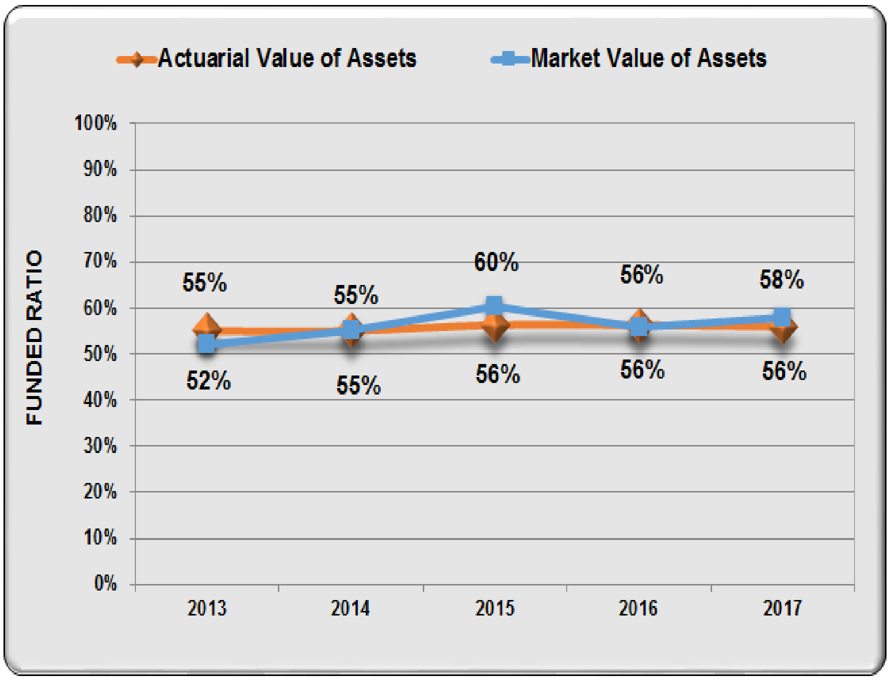
Normal Retirement Benefits:
Age 55 with 20 years of service

Social Security Coverage:
Yes

COLA: No COLA

ACTUARIAL ASSUMPTIONS:
Interest: 7.5% **Salary:** 4%

- For the year ended 3/31/17, the rate of return on investments equaled 10.03% (market) compared to 6.4% assumed.
- This plan was closed to new employees effective May 2003. Benefit accruals were frozen as of May 1, 2011.
- All active participants as well as new hires are members of LAGERS as of 09/2007.
- The employer has not met the ADC since 2008. The City's 2017 CAFR notes that "Annual contributions made to the Plan over the last five years averaged 76% of the Actuarial Required Contribution (ARC). Based on the actuary's recommendation, the City will research a contribution policy that better reflects the facts that the Plan is frozen and the number of active participants is declining."
- Employees do not make a payroll contribution to this plan.
- The plan has an actuarial valuation performed every other year, most recently 5/1/16.



Year Ending March 31,	RECOMMENDED CONTRIBUTION**	ACTUAL CONTRIBUTION**	PERCENT CONTRIBUTED
2017	$199,227	$150,000	75%
2016	$199,227	$150,000	75%
2015	$199,227	$275,000**	138%
2014	$251,551	$0**	0%
2013	$251,551	$210,325	84%

As of 3/31/17 & 5/1/16

Market Value: $1,998,017*
Actuarial Value : $1,951,255*
AAL: $3,463,654*

MEMBERSHIP:
Active: 7 **Inactive:** 21

BENEFITS:
Normal Retirement Formula:
40% or 50% of compensation, reduced by 1/20 for each year less than 20, plus temporary benefit. Percentage based on age and years of service as of 4/30/03.

Normal Retirement Benefits:
Age 60 with 20 years of service

Social Security Coverage: Yes

COLA: No COLA

ACTUARIAL ASSUMPTIONS:
Interest: 6.4% **Salary:** 0%

***Market Value from 3/31/17 CAFR, pg. 18. Actuarial Value and AAL from 5/1/16 valuation.**

**Contribution information found in Comprehensive Annual Financial Report for Fiscal Year Ended March 31, 2017, Page 56, Schedule of Contributions. Due to a timing issue with the investment custodian, the 2014 contribution of $125,000 was not received until April 2014 after the end of the fiscal year. The 2015 contribution would otherwise be $150,000.

From:	Sandra Stephens
To:	Michael Ruff
Cc:	"Jennifer Yackley"
Subject:	RE: Rock Hill Uniformed Employees" Pension Plan
Date:	Thursday, November 9, 2017 10:22:05 AM

Dear Michael,

1. Yes there was a timing issue the 2014 contribution was $125,000 and received by the bank April of 2014. The 2015 contribution was $150,000.
2. The City has not completed a contribution policy for the plan as of date. The reason this has not been completed is that the pension board is analyzing the potential of Lagers assuming plan administration. If preliminary projection holds true, the net pension liability would be amortized over 15 years. The benefit would be to provide required funding for the Unformed Employees Pension Plan and lessen the City annual financial burden by spreading out the contributions over the 15 years.

Please let me know if you have any additional questions.

Sandy

Sandra Stephens, CPFO
Assistant Director of Finance, City of Kirkwood
Treasurer, City of Rock Hill
139 S Kirkwood Road
Kirkwood, MO 63122
314 822-5834
stephesf@kirkwoodmo.org

From: Michael Ruff [mailto:mruff@senate.mo.gov]
Sent: Thursday, November 09, 2017 9:38 AM
To: Sandra Stephens
Subject: Rock Hill Uniformed Employees' Pension Plan

Dear Sandra:

Each year, the Joint Committee on Public Employee Retirement staff compiles a report for the committee's review that includes any defined benefit retirement plan that has a funded ratio of less than 70% on a market value basis. Based on information submitted to the JCPER as part of the plan year 2016 survey, the Rock Hill Uniformed Employees' Pension Plan will be included in the report. This report is designed to increase awareness of trends in plan funding and contribution levels.

I am attaching an information page relating to the pension plan that will be presented to the committee at its fourth quarter meeting on Wednesday, November 29, 2017 at 1pm in Senate Committee Room 2. Please feel free to review this information and respond with any additional information or thoughts you deem appropriate. If you would like to respond, please provide any information or comments by Friday, November 17, 2017.

Before I distribute this information to the committee members, I have two questions I would like to clarify with you:

1. In preparing the contribution chart in the bottom left corner, I used the information in the Schedule of Contributions from page 56 in the CAFR. For FY ending 3/31/14, it listed zero for

the actual contribution. However, I seem to vaguely recall discussing this with you in previous years. Was there a situation with the contribution being sent to the bank but it was not processed or posted in a timely manner? If that was the case, would you mind commenting on that?

2. The City's 3/31/17 CAFR states that the City is researching a contribution policy for the plan. Has the City established a new contribution policy since the CAFR was published or identified any possible alternatives to the present situation? If so, would you like to comment on that?

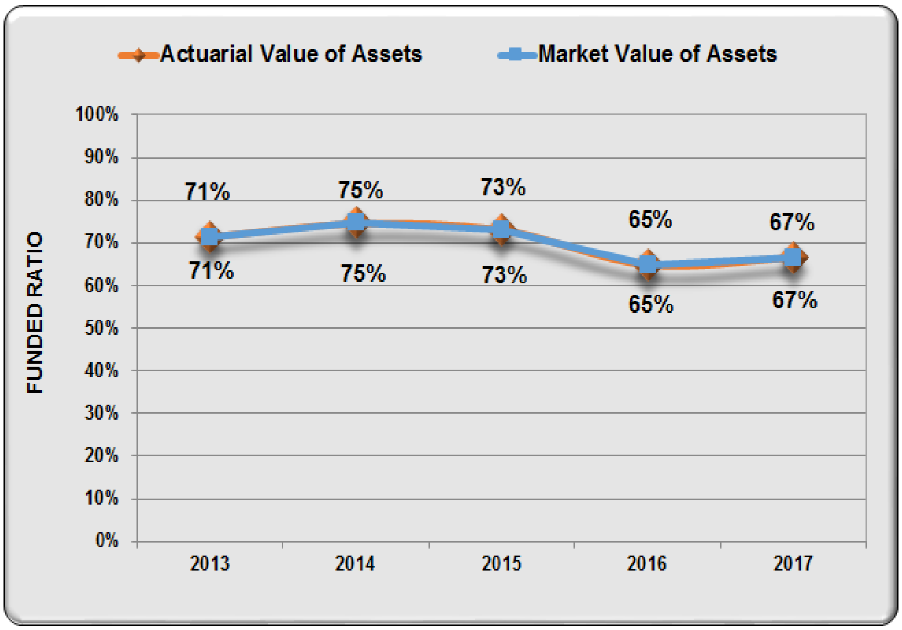
Thank you for your consideration and ongoing cooperation with the JCPER. Please do not hesitate to contact me if you have any questions or would like additional information.

Sincerely,

Michael Ruff
Executive Director
Joint Committee on Public Employee Retirement
State Capitol, Room 219-A
Jefferson City, MO 65101
573-751-1280
mruff@senate.mo.gov

Firefighters' Retirement Fund of the city of Sedalia

- Rate of return on investments equaled 9% versus 7% assumed.
- The plan values assets at market value and does not smooth investment gains and losses.
- The plan updated mortality tables with both the 4/1/16 and 4/1/17 valuations.
- The plan adopted a closed 30-year period for amortizing unfunded liabilities with additional UAAL amortized over layered 20-year periods. Previously, it used an open 30-year period.
- The plan is funded by both property tax revenues ($0.05 per $100 of assessed valuation) and city-appropriated contributions based on recommendation of the actuary.
- Discontinued employee contributions effective 4/1/12.
- The actuary writes "The Plan has been making progress toward a safe funding level. The City policy to contribute the recommended contribution will allow the fund status to continue to improve. We recommend a review of the Plan's investment policy with asset managers and a future discussion regarding the discount rate currently being used."



Year ending 3/31,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2018	$362,295	N/A	N/A
2017	$439,494	$353,426	80%
2016	$358,679	$331,451	92%
2015	$331,814	$367,229	111%
2014	$364,363	$387,393	106%
2013	$341,197	$378,796	111%

As of 4/1/17

Market Value: $7,239,501
Actuarial Value: $7,239,501
AAL: $10,879,564

MEMBERSHIP:
Active: 36 **Inactive:** 48

BENEFITS:
Normal Retirement Formula:
50% of Indexed Earnings Base (IEB)
2017 IEB = $54,478

Normal Retirement Benefits:
Age 55 with 22 years of service

Social Security Coverage: No

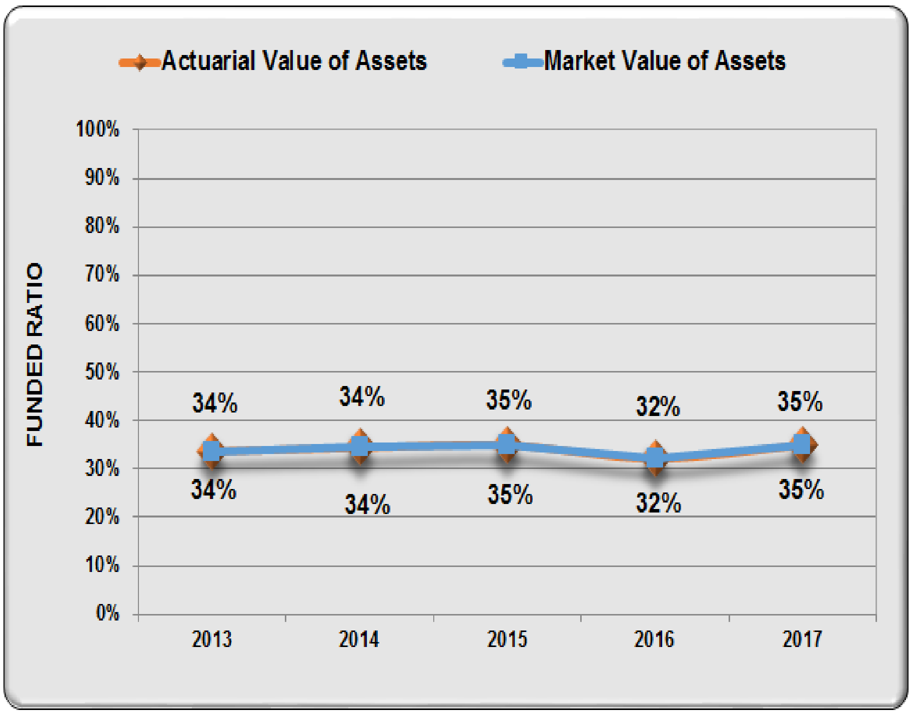
COLA:
Annual Amount Maximum: 3%

ACTUARIAL ASSUMPTIONS:

Interest: 7%
Salary: 3%

SEDALIA POLICE RETIREMENT FUND

- Rate of return on investments equaled 9.8% (Market) vs. 6% assumed (investment assumption was reduced from 7.5% to 6% effective with the 8/1/13 valuation).
- Updated mortality tables.
- Plan does not smooth investment gains/losses.
- Unfunded Actuarial Accrued Liabilities are amortized over a closed 25-year period beginning 8/1/15. Additional UAAL is amortized over layered 20-year periods.
- Plan was frozen as of April 1, 2010, with no additional benefit accruals. Existing and new employees moved to LAGERS. Effective 4/1/10, employee contributions are not required.
- Employer contribution is tied to a $0.916 per $100 assessed valuation tax levy.
- The employer contribution tied to tax levy proceeds has not been sufficient to meet the ADC. The City has made additional appropriations to the fund beyond the tax levy.
- The actuary writes that "The Plan's funding level is critical. The City's policy to contribute the recommended contribution will allow the funded status to improve…"



Yr Ending 7/31,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2018	$514,150	N/A	N/A
2017	$536,425	$534,006	99.5%
2016	$452,528	$480,774	106%
2015	$456,345	$448,165	98%
2014	$459,978	$384,258	84%
2013	$394,414	$235,179	60%

As of 8/1/17

Market Value: **$3,492,328**
Actuarial Value: **$3,492,328**
AAL: **$9,938,578**

MEMBERSHIP:
Active: 27 **Inactive:** 44

BENEFITS:
Normal Retirement Formula:
2% of compensation times years of service
Maximum: 30 years

Normal Retirement Benefits:
Hired on/after 7/1/89: Age 55 with 22 years of service

Social Security Coverage: Yes

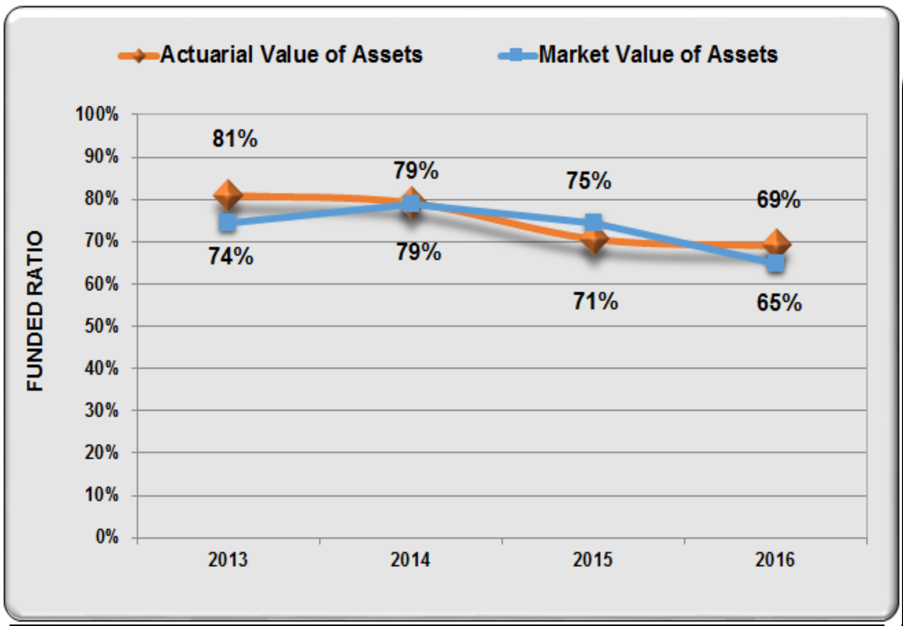
COLA:
Annual Amount Maximum: 2%

ACTUARIAL ASSUMPTIONS:

Interest: 6.0%
Salary: N/A

St. Joseph Police Pension Fund

- Rate of return on investments equaled 3.3% (Market) and 6.7% (Actuarial) versus 7.5% assumed.
- Effective with the 1/1/17 valuation, the plan decreased the assumed rate of return for investments from 7.5% to 7.1%, decreased the salary scale from 4% to 3%, and implemented five year smoothing for investment gains and losses.
- Decreasing the assumed rate of return from 7.5% to 7.1% resulted in a $2.64 million increase in plan liabilities. Changing the salary increase assumption and adopting five-year smoothing reduced the unfunded liabilities significantly.
- The actuary comments that “Despite the setbacks this year, the City’s policy to contribute the recommended contribution will improve the plan’s funded status over time.”
- Completed an experience study in December 2015 for the period January 1, 2006 to December 31, 2014.
- Employees contribute 4% to the plan.



Year Ending June 30,	RECOMMENDED CONTRIBUTION**	ACTUAL CONTRIBUTION**	PERCENT CONTRIBUTED
2016	$1,688,681	$1,688,681	100%
2015	$1,625,738	$1,625,738	100%
2014	$1,752,686	$1,752,686	100%
2013	$2,271,904	$2,271,904	100%

**Schedule of Contributions, June 30, 2016, Page 17, Financial Statements and Supplemental Information, Years Ended June 30, 2016 and 2015

As of 6/30/16 & 1/1/17

Market Value: $35,187,524*
Actuarial Value: $37,470,811
AAL: $54,228,718

MEMBERSHIP:
Active: 117* **Inactive:** 109*

BENEFITS:
Normal Retirement Formula:
40% of compensation for the first 20 years of service plus 2% of compensation for each of the next 15 years. Maximum: 70% of compensation

Normal Retirement Eligibility:
20 years of service

Social Security Coverage: No

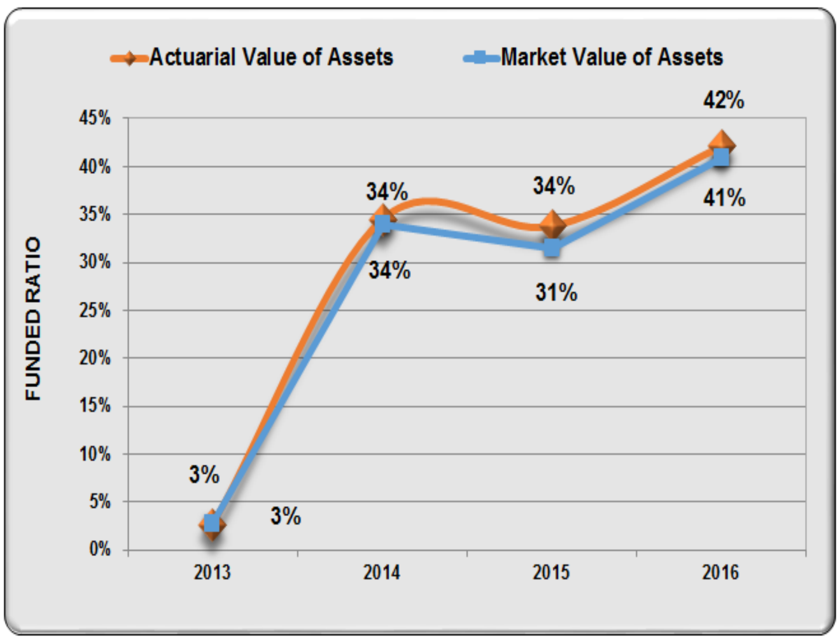
COLA:
Annual Amount Maximum: 4%
Percent of CPI: 50%

ACTUARIAL ASSUMPTIONS:
Interest: 7.1%
Salary: 3%

*Market value of assets and membership information found in Financial Statements and Supplemental Information, Years Ended June 30, 2016 and 2015, Pages 4-5.

ST. LOUIS CITY FIREFIGHTERS' RETIREMENT PLAN

- Rate of return on investments equaled 9.38% (Market) and 5.76% (Actuarial) vs. 7.625% assumed.
- Investment gains/losses are smoothed over a 5 year period.
- Effective February 1, 2013, benefit accruals under the Firemen's Retirement System of St. Louis were frozen. This plan (The Firefighters' Retirement Plan of the City of St. Louis) was established to provide benefits for service rendered after that date.
- Plan adopted a 30-year closed amortization period effective February 1, 2013 for payment of unfunded liabilities.
- The actuary notes "An actuarial experience gain of $1.2 million contributed to the Plan's improved funded status."
- The employer has contributed 100% of the actuarially determined contribution.



FY ending 9/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2017	$9,262,698	N/A	N/A
2016	$9,148,007	$9,148,007	100%
2015	$7,435,635	$7,435,635	100%
2014	$8,942,435	$8,942,435	100%

As of 10/01/16

Market Value: $43,948,104
Actuarial Value: $45,120,452
AAL: $107,261,214

MEMBERSHIP:
Active: 627 **Inactive:** 55

BENEFITS:
Normal Retirement Formula: (new members since 02/01/13)
2% of average final compensation for the first 25 yrs of service plus 2.5% (5% for grandfathered participants) in excess of 25 years of service
Maximum: 75% of compensation

Normal Retirement Eligibility:
Age 55 with 20 years of service

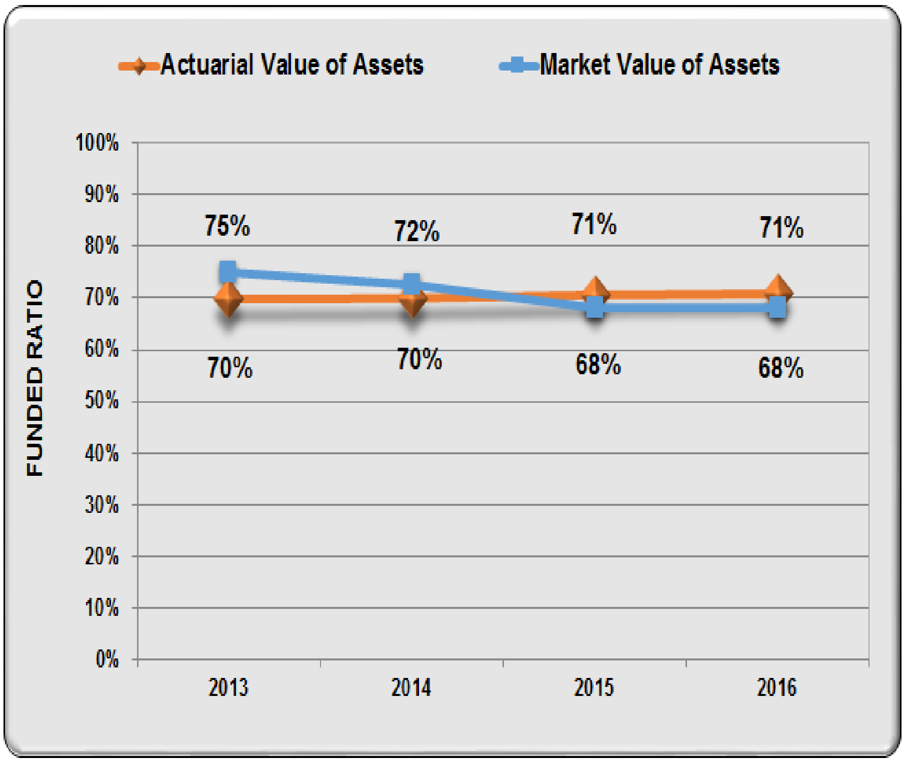
Social Security Coverage: No

COLA: Annual Amount Minimum: 1.5%
Annual Amount Maximum: 5%
"CAP"-Total Max: 25%

ACTUARIAL ASSUMPTIONS:
Interest: 7.625% **Salary:** 3%

St. Louis County Employees' Retirement Plan

- Rate of return on investments equaled 5.6% (Market) and 6.9% (Actuarial) vs. 7.75% assumed.
- Investment gains and losses are smoothed over a four-year period.
- Effective with the 1/1/16 valuation, the plan shortened the amortization period for unfunded liabilities from 30 years to 25 years. The actuary writes "Note that each year, the unfunded accrued liability payment is determined by re-amortizing the unfunded accrued liability over a period of 25 years. This is known as an "open" amortization. Absent the emergence of future gains, or contributions in excess of the funding policy contribution, payments based on the open 25-year amortization period will not be sufficient to fully amortize the unfunded liability."
- The plan maintains both uniformed and civilian employee components. The actuary values these components separately.
- Employees do not contribute to the plan. Employees participate in Social Security.
- The actuary comments that "The decline in the funded ratios is primarily due to unfavorable investment results combined with the passage of time and increases due to additional benefit accruals."
- The employer continues to meet the actuary's recommended contribution.



Yr Ending 12/31,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2017	$40,372,354	N/A	N/A
2016	$39,938,958	$39,938,958	100%
2015	$37,894,303	$37,894,303	100%
2014	$36,202,086	$36,202,086	100%
2013	$36,628,538	$36,628,538	100%

As of 1/1/17

Market Value: **$612,891,089**

Actuarial Value: **$644,413,232**

AAL: **$903,910,334**

MEMBERSHIP:

Active: 3,747 **Inactive:** 4,454

BENEFITS:

Normal Retirement Formula:

General Employees: 1.5% of compensation times years of service, plus $15 per month times years of service.

Uniformed: 1.6% of compensation times years of service, plus $30 per month times years of service to age 65, plus $5 per month times years of service.

Normal Retirement Benefits:

General Employees: Age 65 with 3 years of service

Uniformed: Age 60 with 10 years of service, age 65 with 3 years of service, or Rule of 80

Social Security Coverage: Yes

COLA: Ad hoc cola

ACTUARIAL ASSUMPTIONS:

Interest: 7.75%

Salary: 4.25%