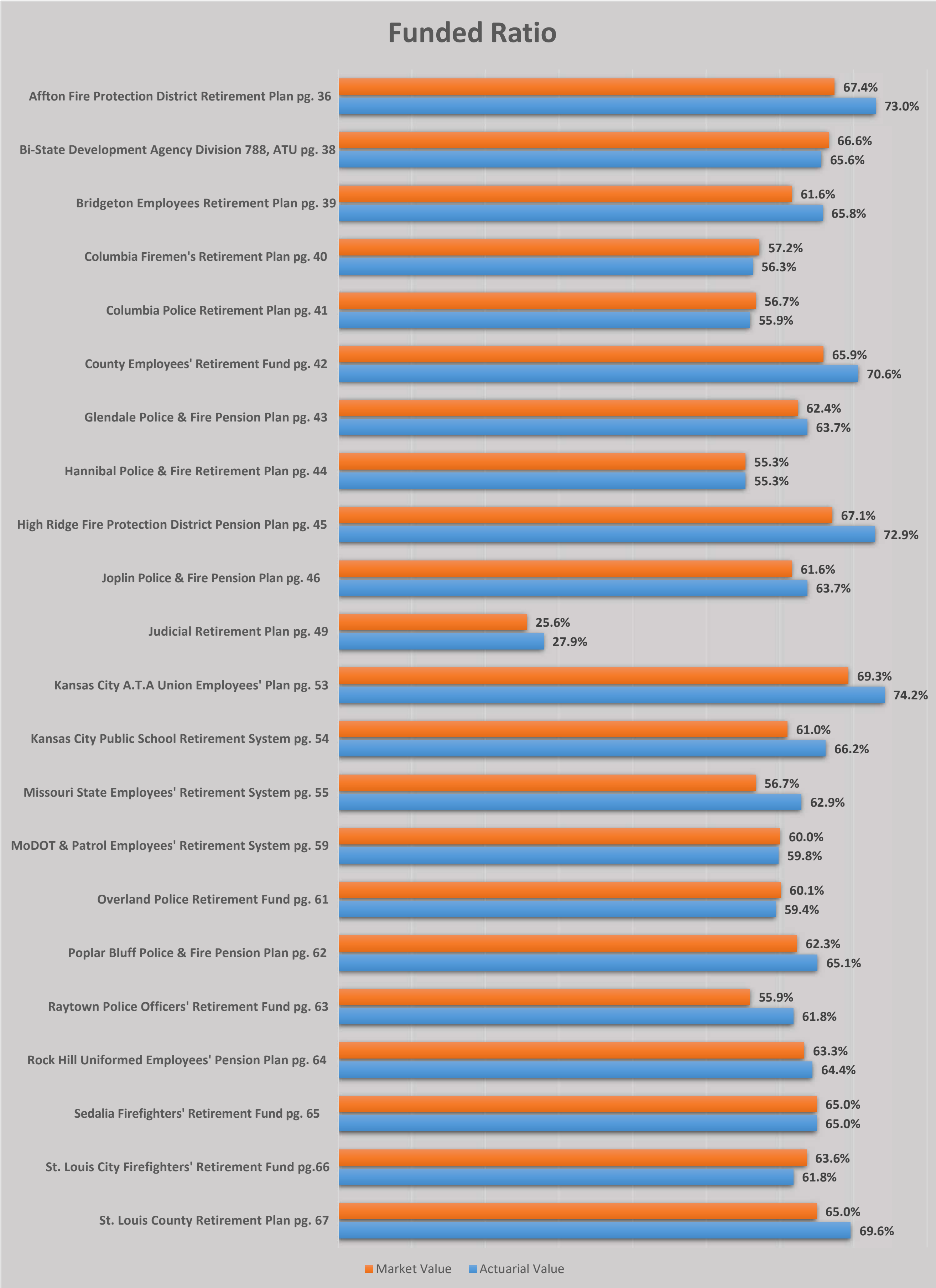
JOINT COMMITTEE ON PUBLIC EMPLOYEE RETIREMENT

ANNUAL WATCH LIST

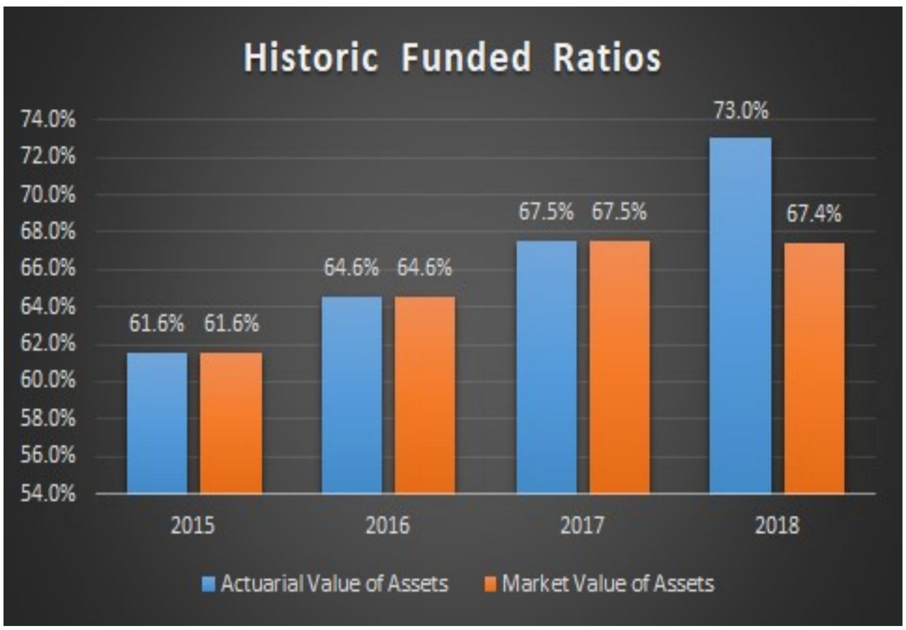
December 2019

Please Note: 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vested, retired, surviving beneficiary, disabled members, and for some plans, terminated nonvested members who have not withdrawn employee contributions.


Funded Ratio
Affton Fire Protection District Retirement Plan pg. 36
67.4%
73.0%
Bi-State Development Agency Division 788, ATU pg. 38
66.6%
65.6%
Bridgeton Employees Retirement Plan pg. 39
61.6%
65.8%
Columbia Firemen's Retirement Plan pg. 40
57.2%
56.3%
Columbia Police Retirement Plan pg. 41
56.7%
55.9%
County Employees' Retirement Fund pg. 42
65.9%
70.6%
Glendale Police & Fire Pension Plan pg. 43
62.4%
63.7%
Hannibal Police & Fire Retirement Plan pg. 44
55.3%
55.3%
High Ridge Fire Protection District Pension Plan pg. 45
67.1%
72.9%
Joplin Police & Fire Pension Plan pg. 46
61.6%
63.7%
Judicial Retirement Plan pg. 49
25.6%
27.9%
Kansas City A.T.A Union Employees' Plan pg. 53
69.3%
74.2%
Kansas City Public School Retirement System pg. 54
61.0%
66.2%
Missouri State Employees' Retirement System pg. 55
56.7%
62.9%
MoDOT & Patrol Employees' Retirement System pg. 59
60.0%
59.8%
Overland Police Retirement Fund pg. 61
60.1%
59.4%
Poplar Bluff Police & Fire Pension Plan pg. 62
62.3%
65.1%
Raytown Police Officers' Retirement Fund pg. 63
55.9%
61.8%
Rock Hill Uniformed Employees' Pension Plan pg. 64
63.3%
64.4%
Sedalia Firefighters' Retirement Fund pg. 65
65.0%
65.0%
St. Louis City Firefighters' Retirement Fund pg.66
63.6%
61.8%
St. Louis County Retirement Plan pg. 67
65.0%
69.6%
Market Value
Actuarial Value

AFFTON FIRE PROTECTION DISTRICT RETIREMENT PLAN

- Rate of return on investments equaled –7.6% (Market) and 0.45% (actuarial) vs. 6.5% assumed.
- The FPD hired a different actuary to perform the annual valuation. The new actuary made multiple changes to assumptions and methods. Updated mortality tables to PubS-2010. Updated salary inflation and termination assumptions. Implemented five-year smoothing for asset gains and losses. The plan had previously valued assets at market value.
- Adopted a 20-year closed amortization period for payment of unfunded liabilities.
- The employer contribution is funded, in part, by a property tax levy. At the April 2017 election, the voters adopted an increase in the tax levy of twenty-five cents. The employer has also increased its discretionary contributions using general revenue.
- 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
2019	$438,772	N/A	N/A
2018	$501,704	$1,278,428	255%
2017	$440,154	$310,020	70%
2016	$453,879	$300,389	66%
2015	$315,183	$304,357	97%

As of 1/1/19

Market Value: $9,269,814

Actuarial Value: $10,034,166

Liabilities: $13,745,722

Membership:

Active: 39 **Inactive**: 29

Normal Retirement Formula:

1.7333% of 3-year average monthly compensation times service, maximum of 30 years.

Normal Retirement Eligibility: Age 60 with 5 years of service

Social Security Coverage: Yes

COLA: No COLA

Assumed Rate of Return: 6.5%

Salary: Service-based table between 6.5% and 2.5%

From:	Meggos, Nick
To:	Michael Ruff
Cc:	"Nick Fahs"; John Hefele; "Frank Vatterott"
Subject:	RE: Affton FPD Pension Plan
Date:	Monday, November 18, 2019 4:47:47 PM
Attachments:	image002.png image004.png image005.png image006.png image007.png

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Mr. Ruff,

In light of your upcoming December 2nd meeting, I wanted to share a quick update on the funded position of the Affton Fire Protection District Pension Plan. Based on the continued commitment of the district to fund the plan (total anticipated 2019 employer contributions of $1.5M) and better than expected asset returns so far in 2019, **we currently project the funded ratio for this plan (MVA basis) to be approximately 80% by 1/1/2019**. Therefore, the district fully expects not to be on the list of plans reviewed by the committee next year.

In addition to the significant increase in the expected 1/1/2019 funded percentage, as you discuss the Affton Plan we believe that it is important to highlight the following:

1. A 2018 contribution that far exceed the recommended contribution
2. A commitment to continue these higher contributions in 2019 and beyond
3. Very reasonable assumptions to value liabilities (6.5% and the new Public Safety Mortality Table with generational improvements)

Thank you for your work and allowing Affton to provide additional information about their plan. Please feel free to contact me with any questions you have about this information.

Best,
Nick

Nick Meggos, EA, FCA

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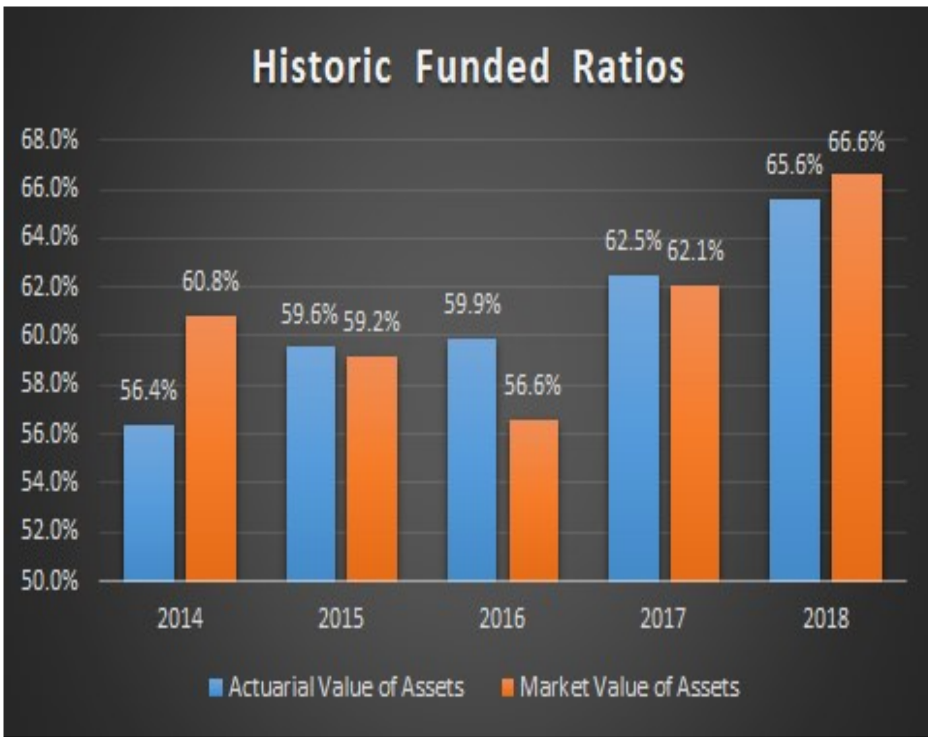
BI-STATE DEVELOPMENT AGENCY
DIVISION 788, A.T.U. EMPLOYEES' PENSION PLAN

- Rate of return on investments equaled 10.4% (Market) and 8% (Actuarial) vs. 7% 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 its 11/9/17 meeting, the Pension Committee voted to maintain the total weekly contribution rate of $175 per active participant.
- 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 3/31/18 Financial Statements (pg. 26), which revised the contribution history to include the previous amounts from the Clerical Plan.



Fiscal Year ending 6/30,	EMPLOYER RECOMMENDED CONTRIBUTION	EMPLOYER ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2018	$9,393,252	$9,393,252	100%
2017	$9,626,600	$9,626,600	100%
2016	$9,342,714	$9,342,714	100%
2015	$9,199,407	$9,199,407	100%
2014	$9,249,791	$9,249,791	100%

As of 4/1/18

Market Value: $139,091,378

Actuarial Value: $136,906,941

Liabilities: $208,700,699

Membership:

Active: 1,414 **Inactive**: 1,322

Normal Retirement Formula:

$40 times years of service for those retiring with less then 25 years of service. $55 times years of service for those retiring with 25 or more years of service.

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

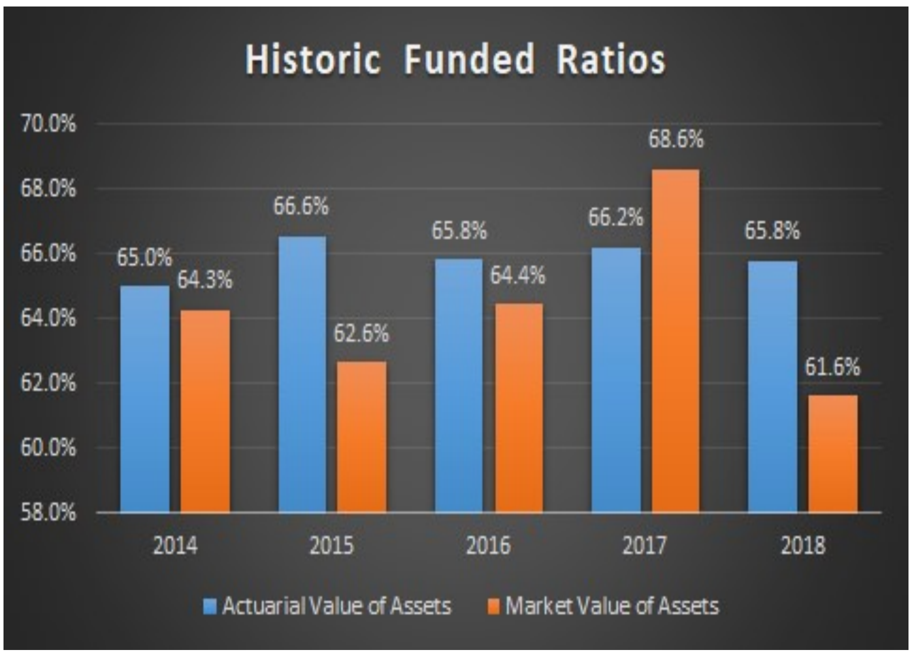
Social Security Coverage: Yes

COLA: Ad hoc COLA

Assumed rate of return: 7%

BRIDGETON EMPLOYEES RETIREMENT PLAN

- Rate of return on investments equaled -4.8% (Market) and 5.4% (Actuarial) vs. assumed 7.5%.
- For plan year 2018, the City contributed the full actuarially determined contribution (slightly exceeding it) for the first time since 2008.
- The plan was frozen to new employees as of January 1, 2012. For employees hired after 1/1/12, the City uses a matching component to its 457 deferred compensation plan.
- Effective with the 1/1/18 valuation, the City has changed its funding policy by adopting a 30-year closed amortization period for payment of unfunded liabilities.
- In April 2015, voters approved a hotel/motel tax increase to generate an additional $900,000 in revenue annually.
- The actuary comments that "the chief reasons for the increase in annual cost as a percentage of payroll is the fact that the payroll is declining as the plan is closed to new entrants."
- The State Auditor audited the plan in 2016 with an overall performance rating of Poor. The State Auditor issued a follow up report in November 2017; most recommendations have been implemented or partially implemented.



January 1,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2019	$1,725,085	N/A	N/A
2018	$1,697,979	$1,700,000	100.1%
2017	$1,687,909	$1,680,000	99.5%
2016	$1,680,519	$1,525,000	91%
2015	$1,750,340	$1,200,000	68%
2014	$1,740,187	$1,000,000	57%

As of 1/1/19

Market Value: $28,171,530*

Actuarial Value: $30,121,398

Liabilities: $45,747,328

Membership:

Active: 79 **Inactive**: 170

Normal Retirement Formula:

2% of compensation times years of service

Normal Retirement Eligibility:

Age 60 with 5 years of service

Social Security Coverage: Yes

COLA: No COLA

Assumed Rate of Return: 7.5%

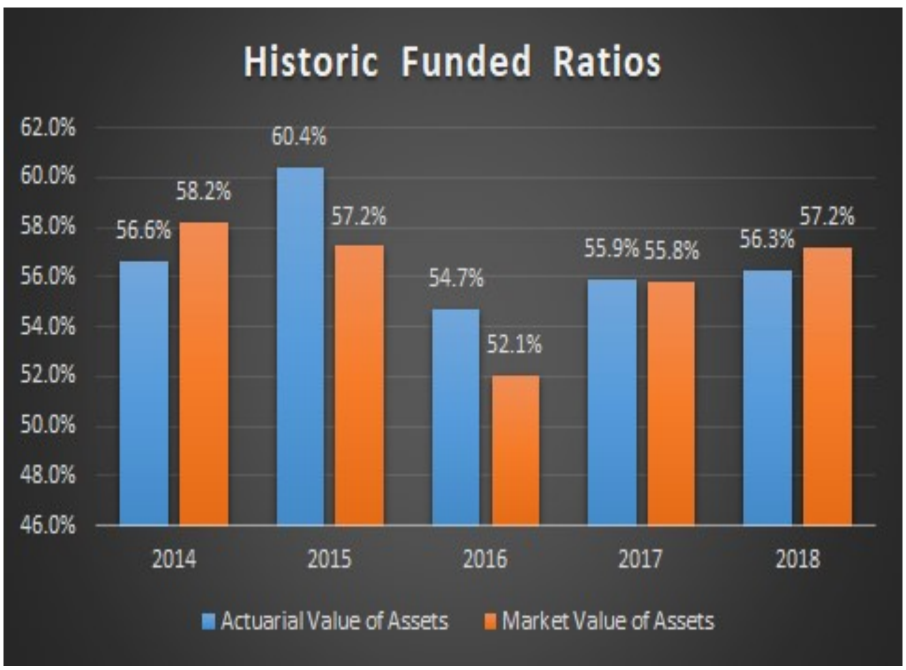
Salary: 4%

*Market Value from 1/1/19 actuarial valuation including accrued contribution of $1,700,000.

COLUMBIA FIREMEN & POLICE RETIREMENT SYSTEMS

- The Fire and Police plans are commingled for investment purposes. Rate of return on investments equaled 7.3% (Market) & 5.6% (Actuarial) vs. 7% assumed. Investment gains/losses are smoothed over a four-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 the 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 ADC. 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 on or after October 1, 2012. 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.

FIREMEN'S RETIREMENT FUND



Year Ending 9/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2018	$5,426,042	$5,426,042	100%
2017	$4,789,910	$4,789,910	100%
2016	$5,226,250	$5,226,250	100%
2015	$4,751,496	$7,751,496	163%
2014	$4,674,412	$4,674,412	100%

Fire as of 9/30/18

Market Value: $83,439,055

Actuarial Value: $82,231,009

Liabilities: $145,927,117

Membership:

Active: 141 **Inactive**: 161

Normal Retirement Formula:

3.5% of compensation for the first 20 years + 2% for the next 5 years. Max of 80% of compensation.

Hired on/after 10/1/12: 2.5% of compensation times years of service. No max benefit.

Normal Retirement Eligibility:

Age 65 or 20 years of service

Hired on/after 10/1/12: Age 55 with 1 year of service. Rule of 80.

COLA Annual Minimum: 2%

Social Security Coverage: No

Assumed Rate of Return: 7%

Salary: 3.25%

COLUMBIA FIREMEN & POLICE RETIREMENT SYSTEMS
(Continued)

POLICE RETIREMENT SYSTEM

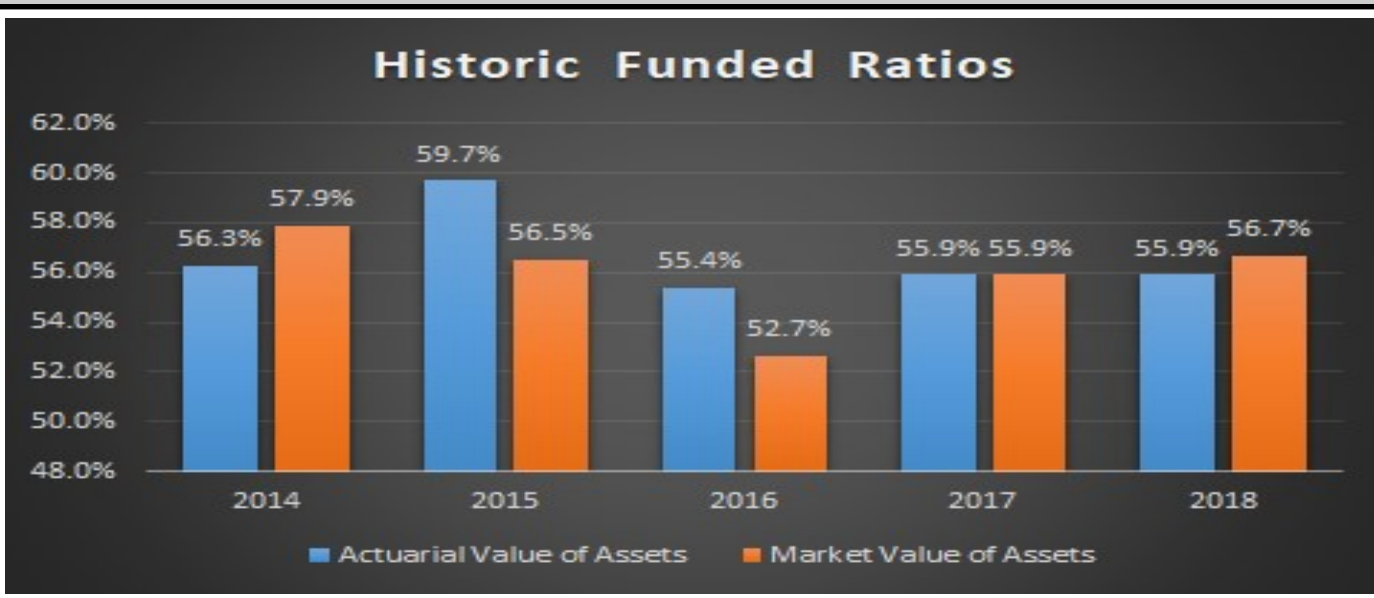
Police as of 9/30/18

Market Value:	$54,732,945	**Membership**:		**Assumed Rate of Return**: 7%	
Actuarial Value:	$53,940,512	**Active**:	161	**Salary**:	3.25%
Liabilities:	$96,391,371	**Inactive**:	193	**Social Security Coverage**: Yes	

Normal Retirement Formula: 3% of Compensation for the first 20 years of service plus 2% of compensation for the next 5 years of service.

Hired on/after 10/1/12: 2% of compensation for the first 25 years of service plus 1.5% of compensation for each year over 25. Max of 57.5% of compensation.

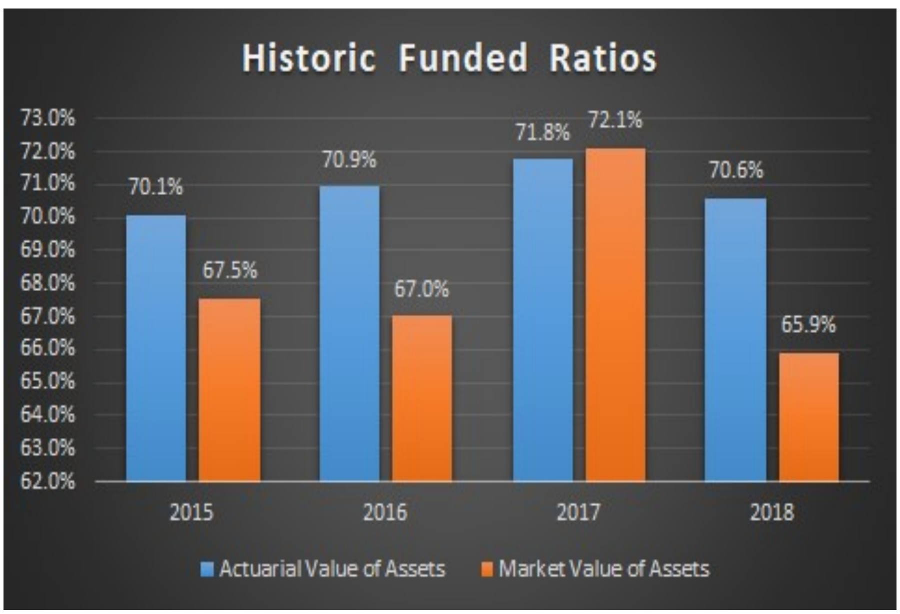
Normal Retirement Eligibility: 20 years of service or age 65. Hired on/after 10/1/12: 25 years of service or age 65.



Year ending 9/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2018	$3,796,494	$3,796,494	100%
2017	$3,365,161	$3,365,161	100%
2016	$3,812,192	$3,812,192	100%
2015	$3,486,784	$5,486,784	157%
2014	$3,245,420	$3,245,420	100%

COUNTY EMPLOYEES' RETIREMENT FUND

- Investment return equaled –3.21% (market) and 4.29% (actuarial) vs. 7.5% assumed.
- CERF was established by the General Assembly in 1994 and is funded through county receipts of fee and penalty revenues and employee contributions. The actuary writes "...Employer contributions are set by statute and are unrelated to payroll, funding requirements, or benefit accrual pattern…"
- The General Assembly passed SB 62 (2017), which, in part, increased several of the fees and penalties that are used to fund CERF effective January 1, 2018.
- The actuary comments "In 2018, the first year the increase was effective, aggregate Employer contributions were about $7.5 million greater than the prior year. This resulted in Employer contributions exceeding the ADC for the first time in several years...prior to the recognition of the 401(a) Match Contribution. When the Match Contribution is considered, Employer contributions fell short of the ADC by about $3.5 million for the 2018 plan year."
- Effective 7/1/11, the system amortizes unfunded liabilities using a closed/layered method. Initial UAAL is amortized over 20 years with each year's gains/losses amortized as an additional layer over 20 years.
- Employees hired on or after 2/25/02 contribute 6% of pay (non-LAGERS members) and 4% of pay (LAGERS members).



Year Ending 12/31,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2019	$30,817,130	N/A	N/A
2018	$28,267,433	$28,517,335	100.8%
2017	$26,677,238	$21,006,080	79%
2016	$25,608,251	$20,329,625	79%
2015	$22,051,507	$19,968,537	90.6%

As of 1/1/19

Market Value: $493,302,868

Actuarial Value: $529,029,220

Liabilities: $748,838,283

Membership:

Active: 11,616 **Inactive**: 7,789

Normal Retirement Formula

Greater of:

1. Flat Dollar Formula. $29 per month x years of service. Max 29 years of service;
2. Target Replacement Ratio/Social Security Offset; or
3. Prior Plan Formula.

Normal Retirement Benefits: Age 62 with 8 years of service

Social Security Coverage: Yes

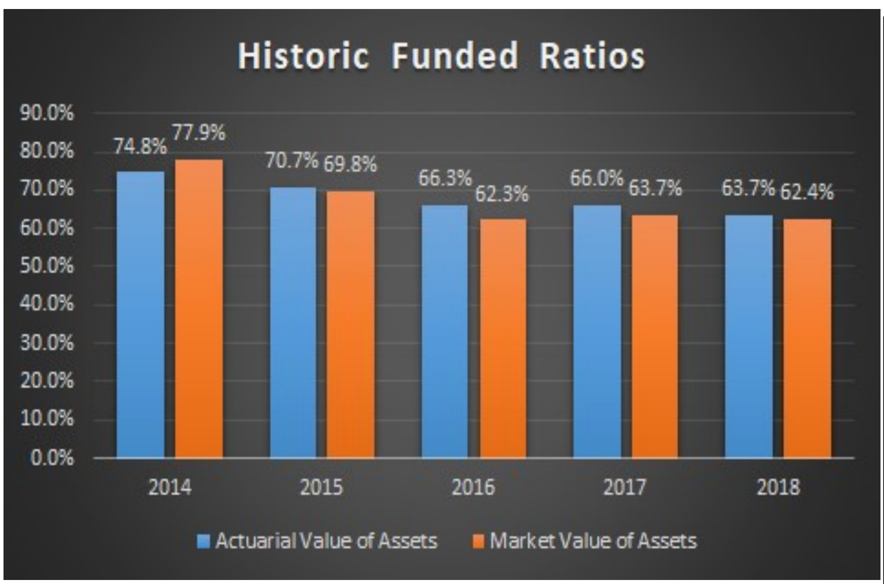
COLA: Annual Max 1%. Percent of CPI: 100%. Total Max 50%.

Assumed Rate of Return: 7.5%

Salary: 2.5%

GLENDALE POLICE & FIRE PENSION PLAN

- Investment return equaled 7.8% (market) and 6.2% (actuarial) vs. 7% assumed.
- Updated mortality tables.
- In previous years, the Plan reduced the assumed rate of return from 7.5 to 7.25 and from 7.25 to 7.
- The plan is funded from two sources: a dedicated property tax levy and an employee contribution of 3.25%.
- The tax levy has only produced sufficient revenue to meet the full annual required contribution one time (2007) since 2002. Current tax rate of $0.076 (residential), $0.078 (commercial) and $0.1 (personal) per $100 of assessed valuation.
- The City's Financial Statements state that "With the plan approximately three 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. Currently, the City is considering having the...Plan join the MO LAGERS system, but how to fund the underfunded amount is the sticking point."
- The City's Financial Statements note that "For fiscal year 2019, the City will be contributing $250,000 in monthly installments of $20,833 from the Prop P Fund to help close the unfunded gap."



Year Ending 6/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2019	$414,326	N/A	N/A
2018	$376,231	$132,195	35%
2017	$370,101	$130,456	35%
2016	$333,799	$130,235	39%
2015	$294,386	$130,695	45%

As of 7/1/18

Market Value: $5,316,974

Actuarial Value: $5,430,116

Liabilities: $8,525,424

Membership:

Active: 25 **Inactive**: 21

Normal Retirement Formula: 50% of compensation for the 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

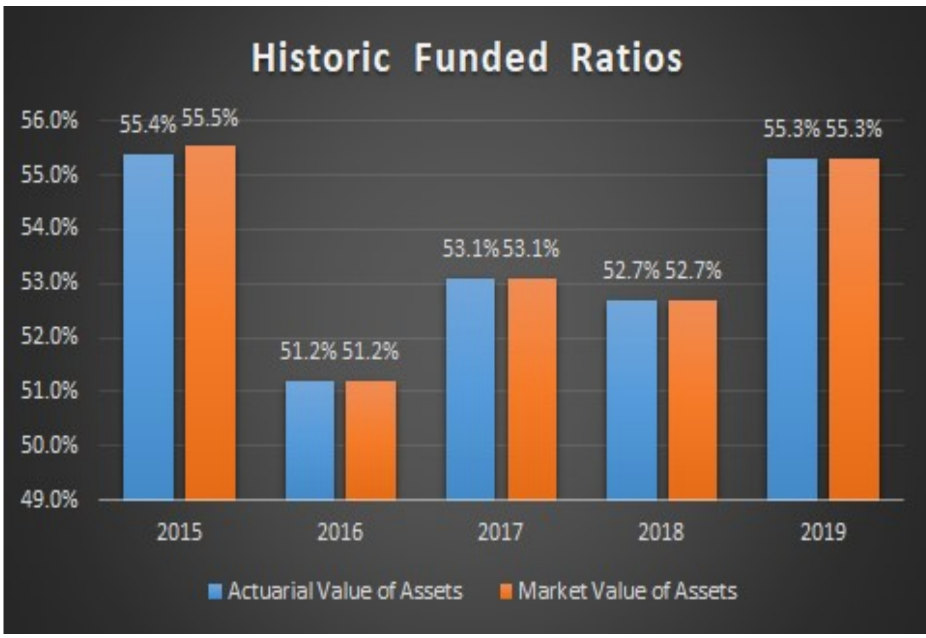
COLA: No COLA

Assumed Rate of Return: 7%

Salary: 3.5%

HANNIBAL POLICE & FIRE RETIREMENT PLAN

- Rate of return on investments equaled 5.6% (Market) vs. 7% assumed.
- The plan does not smooth investment gains/losses.
- The plan's actuary writes "Since...June 30, 2012, the city has consistently contributed in excess of the recommended contribution, and as expected, the funded ratio of the plan has gradually increased. Three years ago, in the 2016 valuation, the funding interest rate was lowered, and generational mortality was introduced. These more conservative assumptions require more robust contributions, which, if made, will cause the plan to continue to improve its funded status."
- Effective with the July 1, 2016 valuation, 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 not participate in Social Security.
- The City changed the Plan to permit contracting with Standard Insurance for disability coverage.
- Effective July 1, 2016, the employee contribution rate will increase by one-half percent annually until it reaches 15% on July 1, 2021. Employee contributions are 14% from July 1, 2019 to June 30, 2020.
- The City made multiple plan modifications effective 7/1/11 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.



Year ending 6/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2020	$1,283,839**	N/A	N/A
2019	$1,321,254	$1,364,514	103%
2018	$1,201,580	$1,298,013	108%
2017	$1,193,766	$1,276,452	107%
2016	$1,066,446	$1,264,977	119%
2015	$984,663	$1,183,568	120%

As of 7/1/19

Market Value: $18,566,496

Actuarial Value: $18,566,496

Liabilities: $33,553,926

Membership:

Active: 77 Inactive: 70

Normal Retirement Formula:

65% of compensation for the first 25 years of service plus 1% for each of the next 5 years of service in excess of 25. Max of 70% of compensation.

Normal Retirement Eligibility: 25 years of service

Hired on/after 7/1/07: Age 55 and 25 years of service

Social Security Coverage: No

COLA: Ad hoc. Max 3% annually. No COLA if funded ratio below 50%.

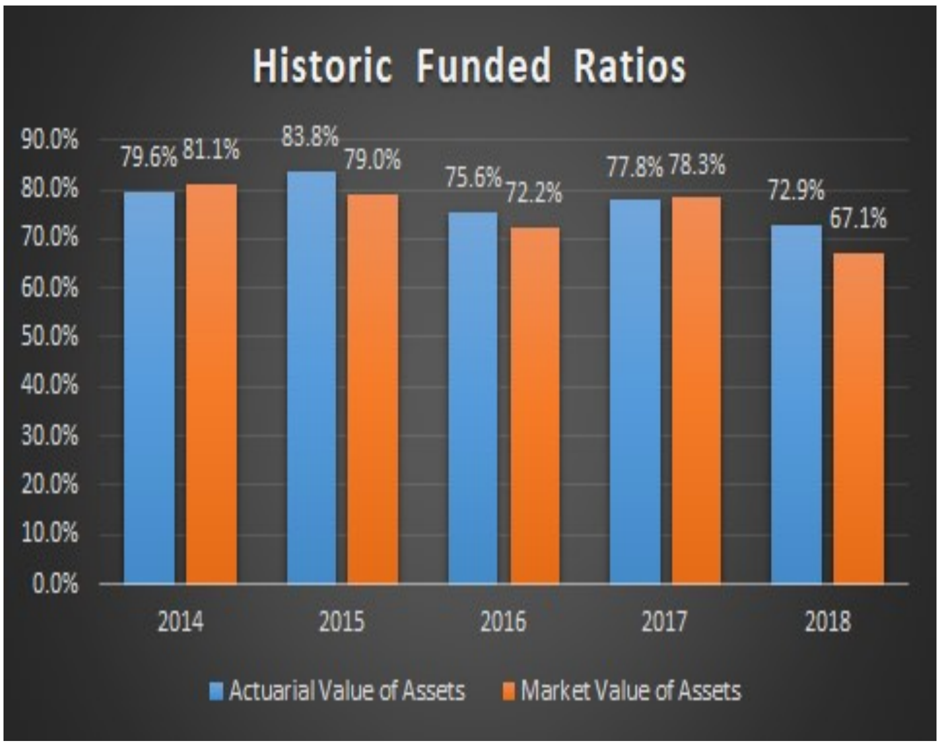
Assumed Rate of Return: 7%

Salary: 3.5%

**The computed contribution decreased from the previous year. However, the plan document provides that the City's actual contribution cannot decrease from one year to the next until the plan is 80% funded.

High Ridge Fire Protection District Pension Plan

- Rate of return on investments equaled –4.86% (market) vs. 7% assumed.
- Updated mortality tables, which resulted in a decrease in the accrued liability and normal cost.
- In 2016, the plan adopted a closed amortization policy for payment of unfunded liabilities. Initial unfunded liabilities will be paid over a twenty-five year period with subsequent gains and losses amortized over additional twenty year layers.
- The FPD previously operated a defined contribution plan in addition to the defined benefit plan. The FPD terminated the DC plan at the end of 2017.
- The principal revenue source for the pension plan is a taxy levy of $0.074 per $100 of assessed valuation. Employees do not contribute to the plan.
- Investment gains and losses are smoothed over five years.



Year ending 12/31,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2019	$401,453	N/A	N/A
2018	$350,034	$301,744	86%
2017	$382,125	$355,645	93%
2016	$270,443	$409,527	151%
2015	$306,767	$392,224	128%

As of 1/1/19

Market Value: $6,513,553

Actuarial Value: $7,076,317

Liabilities: $9,705,916

Membership:

Active: 37 Inactive: 15

Normal Retirement Formula:

$100 per month x years of service.

Maximum of 50 years.

Normal Retirement Eligibility:

Age 55 with 10 years of service

Social Security Coverage: Yes

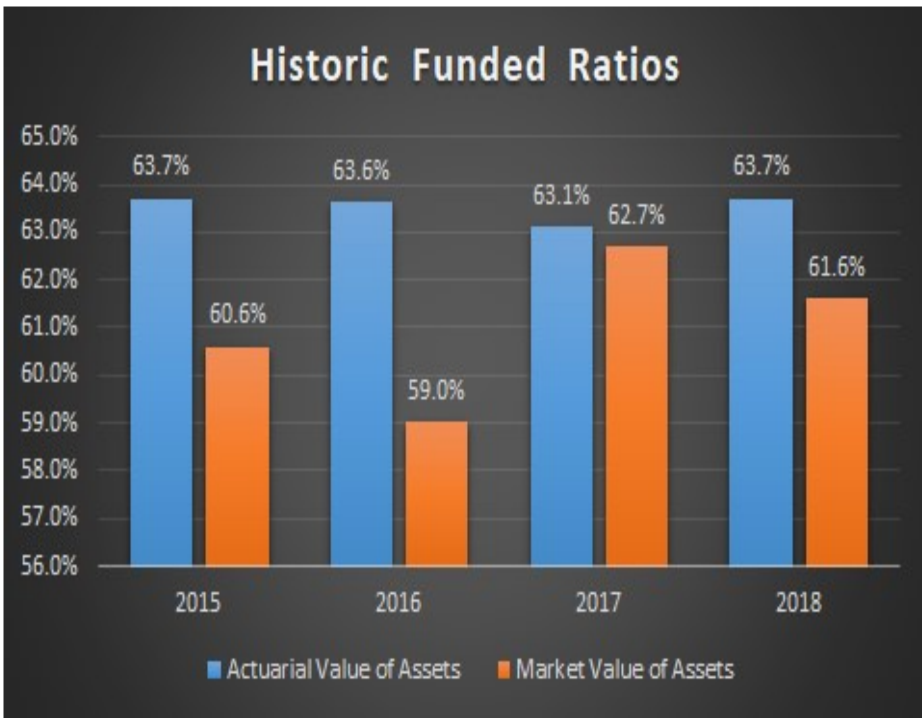
COLA: No COLA

Assumed rate of return: 7%

Salary: N/A

JOPLIN POLICE & FIRE PENSION PLAN

- Rate of return on investments equaled 1.9% (Market) & 4.6% (Actuarial) vs. 6.75% assumed.
- On 11/5/19, city voters adopted a one-half of one percent sales tax to provide additional funding. The tax will expire when the plan is 120% funded or in twelve years, whichever is earlier. The City has been working to address the state of the plan and will likely close the plan to new employees and join LAGERS.
- Completed a 5-year experience study for the period 11/1/11 to 10/31/16. Updated mortality tables and lowered the assumed rate of return from 7% to 6.75%.
- Closed 30-year period as of 11/01/06 for amortization of unfunded liabilities. 18 years remain.
- 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 hired on/before 1/31/09 contribute 18.08% of pay, which is refunded at retirement. Those hired after 1/31/09 contribute 10% of pay without refund upon retirement.
- 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
2020	$2,921,839	N/A	N/A
2019	$2,814,812	N/A	N/A
2018	$2,706,972	$2,620,298	96.8%
2017	$2,657,867	$2,601,983	97.8%
2016	$2,708,565	$2,619,993	96.7%
2015	$2,721,986	$2,662,322	97.8%

As of 10/31/18

Market Value: $40,913,192

Actuarial Value: $42,329,594

Liabilities: $66,406,387

Membership:

Active: 185 Inactive: 161

Normal Retirement Formula:

Hired after 1/31/09: 2.2% of compensation for the first 25 years of service plus 1% for the next 5 years of service. Maximum 60% of compensation.

Hired before 1/31/09: 2.5% of compensation for the first 20 years plus 1% for each of the next 5 years. Maximum 65% of compensation.

Normal Retirement Eligibility:

Hired after 1/31/09: Age 60 or 25 YOS

Hired before 1/31/09: 20 YOS

Social Security Coverage: No

COLA: No COLA

Assumed rate of return: 6.75

Salary: 2.5

*Contribution information is taken from Actuarial Valuation Report as of October 31, 2018, Page I-2, Schedule of Employer Contributions

CITY OF JOPLIN MISSOURI

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State of Missouri
Joint Committee on Public Employee Retirement
State Capitol, Room 219-A
Jefferson City, Mo 65101

Ladies and Gentlemen:

Due to the funded status, the City and pension board began working on a funding solution in 2007, which resulted in the reduction of benefits for new hires that went into effect on January 31, 2009 and additional city contributions. Three actuaries indicated with these benefit reductions and city contributions, the plan would be 80% funded after ten years. However, the pension plan funded status has remained between 63% and 64% for the last four years. Given the plan funded status and growing pension liability, it became apparent the plan change in 2009 was more of a short-term resolution than a long-term solution. As a result, over a year ago, the City and pension plan members formed a work group to find a final, long-term funding solution for the pension plan.

After much research, the work group made a unanimous recommendation to the City Council:

- Fund and close the pension plan to new hires
- Move new hires to LAGERS L-11 plan
- Allow Tier II employees the voluntary option to migrate to LAGERS
- Ask voters for a dedicated ½-cent general sales tax for up to 12 years

City Council gave their approval to the plan and the pension plan membership approved the plan with a 98% approval rating, pending the public vote for the tax. On November 5, 2019, the voters overwhelmingly approved the dedicated tax to close the pension plan.

Therefore, the pension plan will be closed to new hires on February 1, 2020. Those Tier II employees that voluntarily elect to migrate will move to LAGERS on February 29, 2020. We are currently in the process of meeting with each Tier II employee to review their options, with a deadline of January 31, 2020 to make their individual election. Pending notification from the Missouri Department of Revenue, the tax is expected to be effective on April 1, 2020 with the first collections being received by the City in June. The ballot and ordinance language follow:

> “Shall the City of Joplin impose a general sales tax, as authorized by Section 94.510 RSMo., at a rate of one-half of one percent (1/2 percent) solely for the purpose of providing revenues to close the City of Joplin Police and Fire Pension Plan to new hires, migrating new hires to the Missouri Local Government Employees Retirement System (LAGERS), and for the transfer of eligible pension employees to LAGERS, with said

tax to expire upon the Pension Plan reaching a fully-funded one hundred twenty percent (120%) status as determined by an independent actuarial study conducted for the City of Joplin or twelve (12) years after enactment, whichever is earlier? ”

That the contributions contemplated hereunder shall be funded solely by the net proceeds of the one-half of one percent (1/2 percent) general sales tax adopted in the November 5, 2019 election. “Net proceeds” shall mean the proceeds of such tax, after funding of (a) a $1,000,000 per Plan year contribution for two years to LAGERS, and (b) the amount needed, along with the Accumulated Employee Contributions of Tier II participants who terminated employment with the City to join LAGERS, to purchase credited service under LAGERS for such Tier II participants to make up for the years and months of credited service they forfeited under the Plan by terminating employment with the City in order to join LAGERS. The proposed one-half of one percent (1/2 percent) general sales tax will expire upon the earlier of (a) twelve (12) years after enactment, or (b) the date the Plan’s actuary certifies that the Plan is one hundred twenty percent (120%) funded.

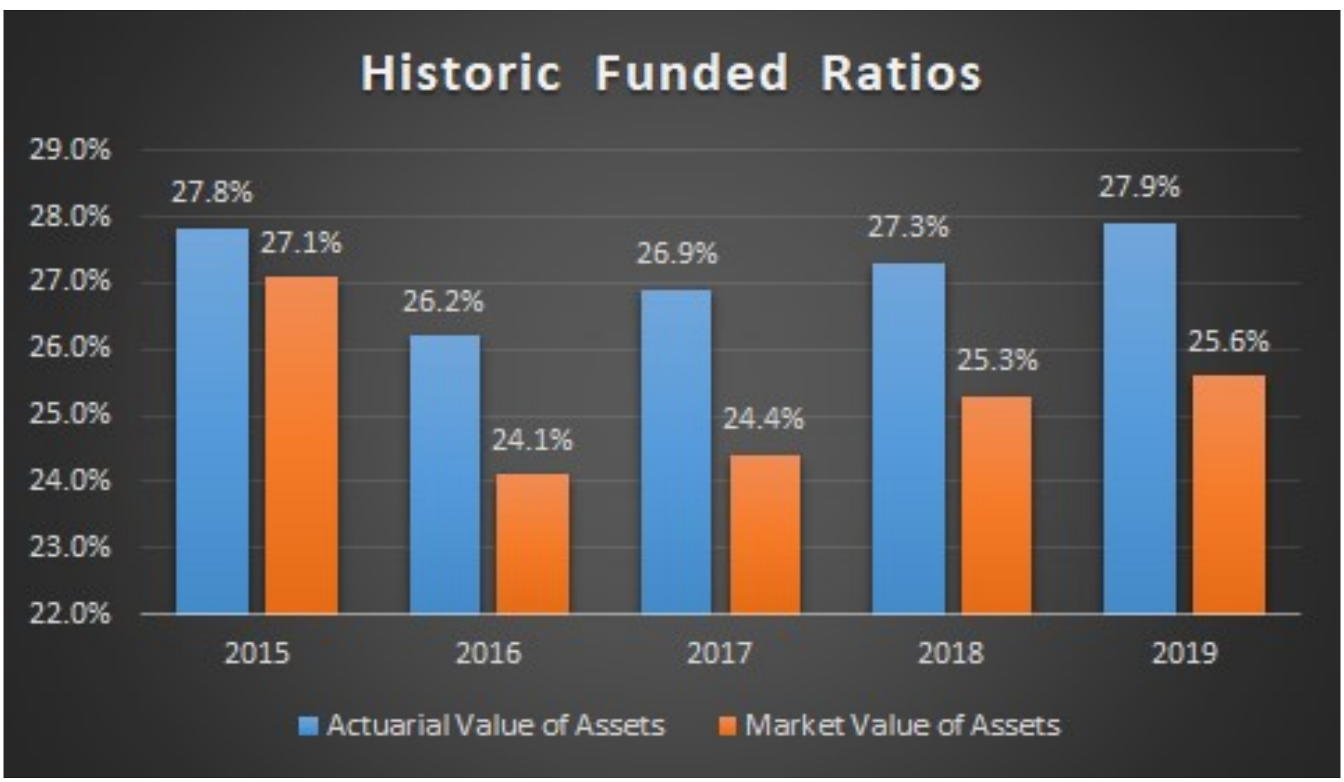
Currently, a ½-cent sales tax in Joplin generates between $6.5 million and $7.5 million per fiscal year. The work group believes this plan is the final, long-term funding solution for the pension plan.

If you have any further questions, please let me know.

Leslie Haase, CPA, CMA
Finance Director

JUDICIAL RETIREMENT PLAN

- For the year ending 6/30/19, investment return equaled 4.3% (Market) and 4.9% (Actuarial) vs. 7.25 assumed.
- In June 2018, the system's actuary completed a study of the system's economic assumptions. The board adopted a three-year reduction schedule for key economic assumptions: investment return, inflation, COLA, wage growth, and payroll growth. As of 6/30/19, lowered investment return to 7.1 and wage growth to 2.6. Absent future board action, the investment return assumption will decrease to 6.95 and wage growth will decrease to 2.5 effective 6/30/20.
- Effective 6/30/18, the board modified the method of amortizing the UAAL from a closed 30 year period (adopted 6/30/14) to a layered approach. The cumulative UAAL was established as an initial base to be amortized over 30 years with each year's gains/losses amortized as an additional layer over 30 years.
- Modified the asset smoothing method from an open five-year period to a closed five-year period. Existing unrecognized investment experience as of 6/30/18 will be recognized over a closed seven-year transition period.
- 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 1/01/11.
- The actuary comments that "the number of active members covered by the...2011 Plan increased significantly from 153 in the 2018 valuation...to 216...Because the benefit structure is different...the ongoing cost of the Plan declines as a higher percentage of active members is covered by the...2011 Plan." This increase in the number of active members covered by the 2011 Plan resulted in increased member contributions, which decreased the plan's normal cost rate by 1.42% (prior to assumption changes). This change was a factor in the decrease of the employer contribution rate from 63.8% to 63.38%.
- Prior to 1998, the plan was funded on a pay-as-you-go basis so no pre-funding occurred. When funding on an actuarial basis began, the funded ratio was at 0%.



FY Ending 6/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2019	$38,604,668	$38,604,668	100%
2018	$36,892,203	$36,892,203	100%
2017	$32,670,710	$34,246,826	104.8%
2016	$31,604,527	$33,642,497	106%
2015	$32,696,686	$32,696,686	100%

The board of trustees has lowered the assumed rate of return multiple times since the June 30, 2012 valuation date. The assumed rate of return is scheduled to further decrease to 6.95 effective with the June 30, 2020 valuation date absent further board action, which would result in a total decrease of 1.55.

As of 6/30/19

Market Value: $158,332,990

Actuarial Value: $172,224,529

Liabilities: $617,482,705

Membership:

Active: 414 **Inactive**: 621

Normal Retirement Formula:

50% of compensation. Less than service requirement=pro-rated benefit based on service

Normal Retirement Eligibility:

Age 62 with 12 years of service

Age 60 with 15 years of service

Age 55 with 20 years of service

Serving for the first time on/after 1/1/11:

Age 67 with 12 years of service

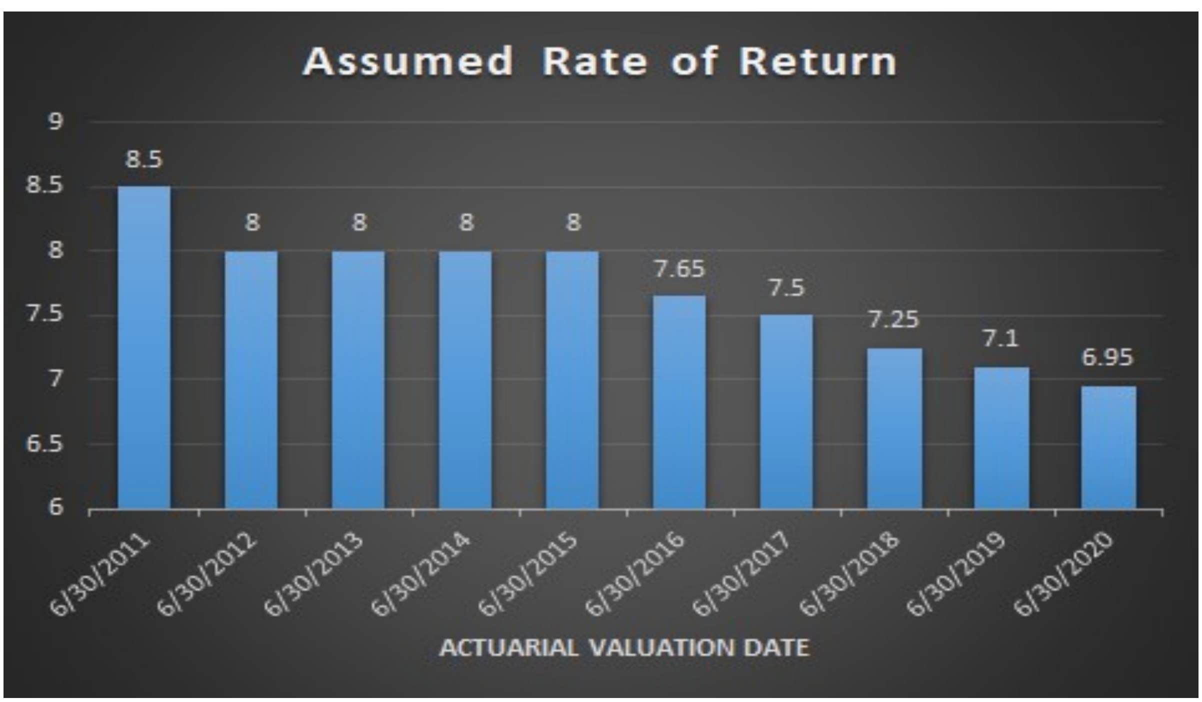
Age 62 with 20 years of service

Social Security Coverage: Yes

COLA: Annual max 5%, 80% CPI

Assumed rate of return: 7.1

Salary: 2.6



November 18, 2019

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 approximately 0% in 1999 and has increased to the June 30, 2019 funded ratio of 27.9%.

In June 2018, the MOSERS Board of Trustees adopted a policy to reduce the Judicial plan's investment rate of return assumption from 7.5% to 7.25% effective with the June 30, 2018 actuarial valuation. In June 2019, the Board remained committed to this funding policy through the reduction of the investment rate of return assumption to 7.10% (from 7.25%). This policy provides for one more reduction of the plan's investment rate of return assumption of 15 basis points to 6.95% 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, 2019	FY21	7.10%	4.75%
June 30, 2020	FY22	6.95%	4.70%

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 <u>increased</u> Employer Contribution Rate to the plan and results in a <u>decreased</u> Funded Ratio. The information contained in the June 30, 2018 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	**6.10%**	**6.60%**	**7.10%**	**7.60%**	**8.10%**
Total Employer Contribution (% of pay)	69.05%	66.11%	63.38%	60.83%	58.44%
Total Employer Contribution ($ in millions)	$43.9	$42.1	$40.3	$38.7	$37.2
Actuarial Value of Assets	$172.2	$172.2	$172.2	$172.2	$172.2
Actuarial Accrued Liability	$681.1	$648.0	$617.5	$589.3	$563.2
Funded Ratio	25.3%	26.6%	27.9%	29.2%	30.6%

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, 2018 annual actuarial valuation, the ongoing annual cost of the **Judicial Plan 2011** (known as the "Employer Normal Cost") is 16.37% of pay, compared to the **pre-2011** annual cost of 22.30% of pay. Approximately 52% of the 414 Judicial Plan active employees are Judicial Plan 2011 members.

Judicial Plan **Actuarial Valuation Results as of 06/30/19**	**Percents of Payroll**		
	Pre 01/01/11 Hires	**Post 01/01/11 Hires**	**Weighted Average**
Normal Cost	22.30%	20.37%	21.28%
Less **Member** Contributions	0.00%	4.00%	2.11%
Employer Normal Cost	22.30%	16.37%	19.17%
Unfunded Actuarial Accrued Liabilities (UAAL) (level % of payrol amortization with layered bases)			44.21%
Total FY21 Computed Employer Contribution Rate			63.38%
Estimated Employer Contribution ($ in Millions)			$40.3

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,

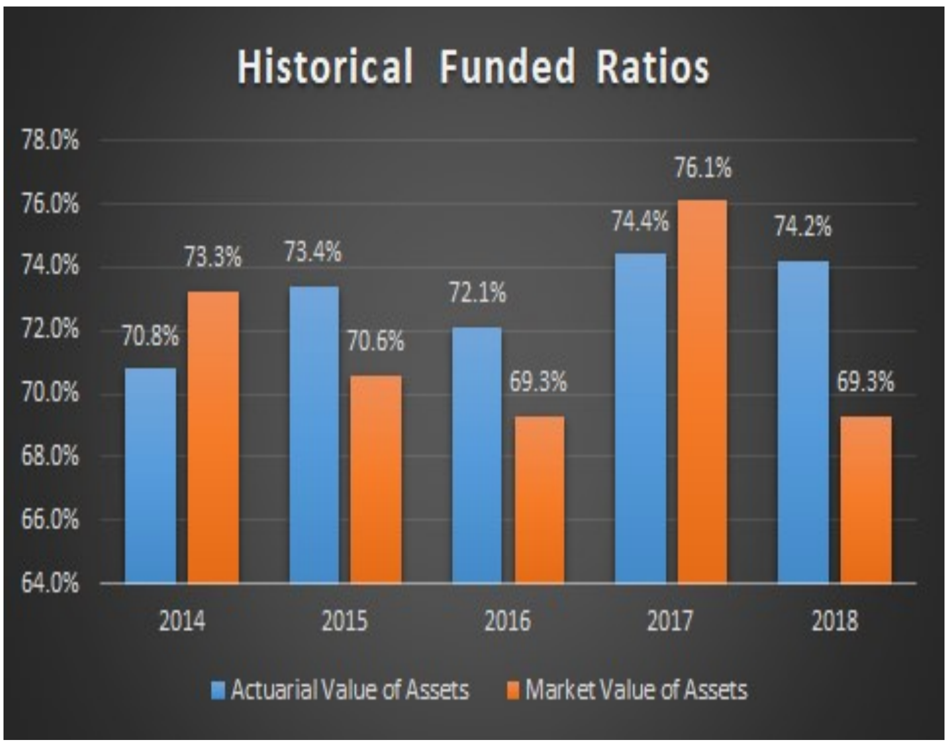
Ronda Stegmann

Ronda Stegmann
Executive Director

cc: MOSERS Board of Trustees

KANSAS CITY AREA TRANSPORTATION AUTHORITY UNION EMPLOYEES' FUNDED PENSION PLAN

- The rate of return on investments was –4.57% (market) and 4.42% (actuarial) vs. 7%.
- Effective with the 1/1/17 valuation, lowered the assumed rate of return for investments from 7.5% to 7%.
- The employer has contributed the full actuarially determined contribution since 2014.
- 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 thirty year period. Subsequent gains and losses are amortized over layered closed 15-year periods.
- Employees contribute 3.75% of pay.



Year Ending 12/31,	RECOMMENDED CONTRIBUTION*	ACTUAL CONTRIBUTION*	PERCENT CONTRIBUTED
2018	$2,550,097	$2,550,097	100%
2017	$2,322,232	$2,322,232	100%
2016	$2,530,180	$2,530,180	100%
2015	$2,436,703	$2,436,703	100%
2014	$2,210,419	$2,490,987	112%

As of 1/1/19

Market Value: $47,590,586

Actuarial Value: $50,948,662

Liabilities: $68,638,718

Membership:

Active: 543 **Inactive**: 241

Normal Retirement Formula:

1.28% of Average Monthly Earnings x credited service (no maximum)

Normal Retirement Eligibility:

Age 62 with 10 years of service

Age 60 with 30 years of service

Social Security Coverage: Yes

COLA: None

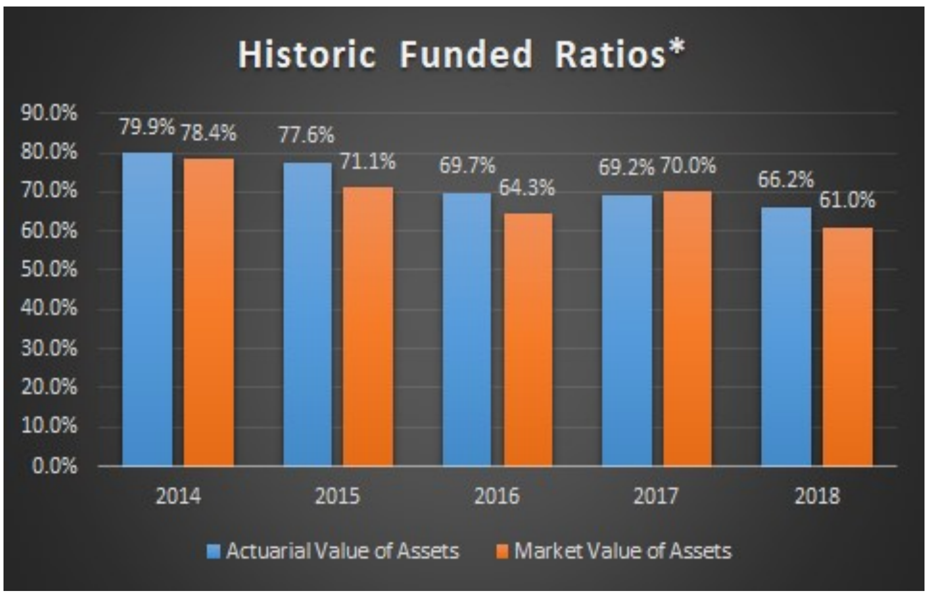
Assumed rate of return: 7%

Salary: 4.25%

*Contribution history is from Kansas City Area Transportation Authority Union Employees' Funded Pension Plan, Financial Report, December 31, 2018, Page 16.

KANSAS CITY PUBLIC SCHOOL RETIREMENT SYSTEM

- For the year ending 12/31/18, net rate of return on investments equaled –5.3% (Market) and 3.7% (Actuarial) versus 7.75% assumed.
- In 2018, the General Assembly passed legislation (SB 892) that, in part, increases the employer contribution rate from 9% to 10.5% in calendar year 2019 and then to 12% on January 1, 2020. Subsequently, a statutory formula will be used to determine the employer contribution rate and depending on valuation results, whether future employee contribution rates may be lowered.
- The most recent actuarial valuation was performed on 1/1/19, which was the same date that the increased employer contribution rate of 10.5% became effective but was prior to the actual receipt of the contributions resulting from the increase.
- The actuary comments that "The major driver of the results of the January 1, 2019 actuarial valuation, and resulting projections, was the actual return for the calendar year 2018 of –5.3%."
- Changed the amortization policy for payment of UAAL from an open 30 to a layered approach: initial UAAL as of 1/1/17 is amortized over a closed 30-year period with subsequent pieces amortized over closed 20-year periods.
- 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 (instead of 2.0) and increased age and service requirements to age 62 & five years of service or rule of 80 (versus age 60 & five years of service or rule of 75).



Year ending 12/31,	RECOMMENDED CONTRIBUTION (In thousands)	ACTUAL CONTRIBUTION (In thousands)	PERCENT CONTRIBUTED
2018	$19,125	$17,528	92%
2017	$18,074	$16,927	94%
2016	$20,224	$16,280	80%
2015	$18,866	$14,499	77%
2014	$19,401	$13,288	68%

*Historic funded ratios, January 1, 2019 Actuarial Valuation, page 5.

As of 1/1/19

Market Value: $602,762,479

Actuarial Value: $654,259,324

Liabilities: $988,234,763

Membership:

Active: 3,898 Inactive: 7,428*

Normal Retirement Formula:

2% of compensation times years of service. Hired on/after 1/1/14: 1.75% of compensation times YOS.

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. Annual max 3%

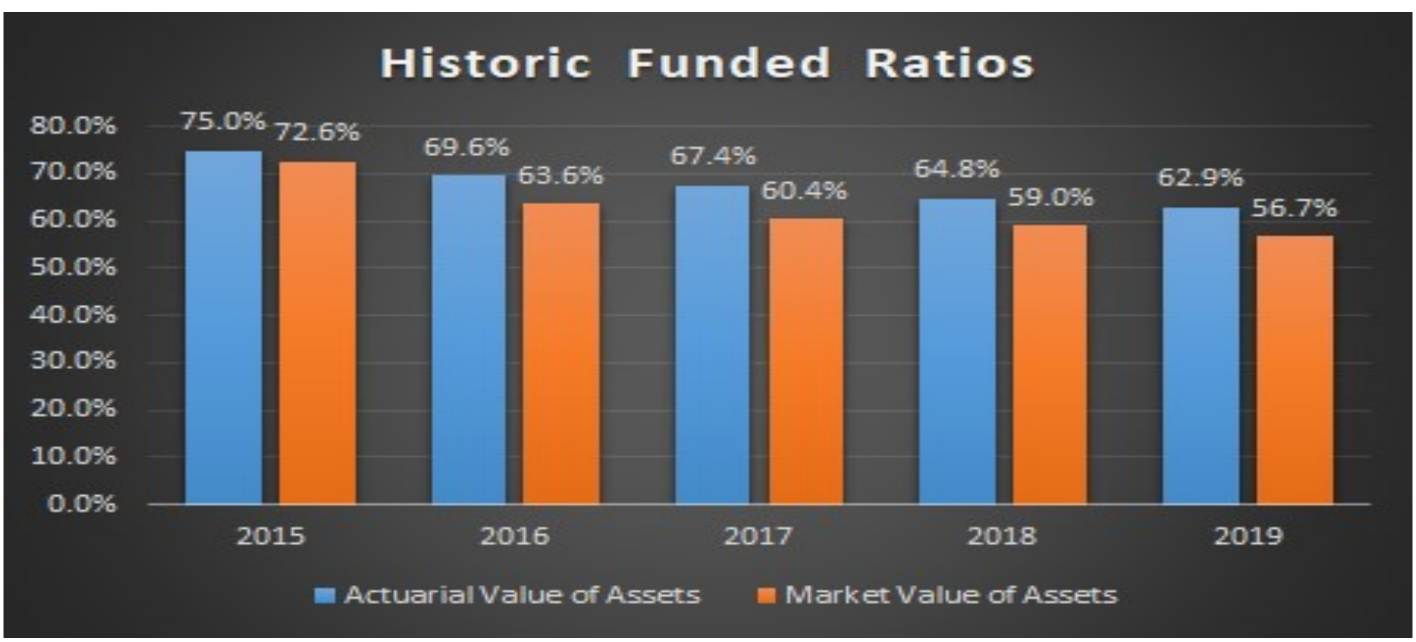
Assumed Rate of Return: 7.75%

Salary Increases: 5%

*2,784 inactives are terminated non-vested and will not receive a benefit.

MISSOURI STATE EMPLOYEES' RETIREMENT SYSTEM

- For the year ending June 30, 2019, rate of return on investments equaled 4.3% (market) and 4.5% (actuarial) vs. 7.25% assumed.
- In June 2018, the system's actuary completed a study of the system's economic assumptions. The board adopted a three-year reduction schedule for key economic assumptions: investment return, inflation, COLA, wage growth, and payroll growth. As of 6/30/19, lowered investment return to 7.1 and wage growth to 2.6. Absent future board action, the investment return assumption will decrease to 6.95 and wage growth will decrease to 2.5 effective 6/30/20.
- Effective 6/30/18, the board modified the method of amortizing the UAAL from a closed 30 year period (adopted 6/30/2014) to a layered approach. The cumulative UAAL was established as an initial base to be amortized over 30 years with each year's gains/losses amortized as an additional layer over 30 years.
- Modified the asset smoothing method from an open five-year period to a closed five-year period. Existing unrecognized investment experience as of 6/30/18 will be recognized over a closed seven-year transition period.
- The computed employer contribution rate as a percent of payroll increased from 21.77% for FY20 to 22.88% for FY21. The actuary attributed the increase to 3 primary factors: unfavorable investment return, the changes in economic assumptions, and actual payroll growth less than expected.
- In 2018, the Board adopted a new investment portfolio asset allocation. The board is transitioning the portfolio over a 36-month period through 12/31/21. As of 6/30/19, 17% of the transition has been completed.
- The board implemented a terminated vested buy-out program authorized by SB 62 (2017), which resulted in a net liability reduction of approximately $41 million. Over 4,300 terminated vested members participated. Reduced the actuarial contribution rate by 0.14% of payroll.
- 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 number of active members covered by the 2011 tier increased from 20,477 (6/30/18) to 21,893 (47% of total). "Because the benefit structure is different for MSEP 2011 members...the ongoing cost of the system declines as a greater percentage of active members are covered by MSEP 2011."



Year Ending 6/30	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2019	$394,150,042	$394,150,042	100%
2018	$379,557,962	$379,557,962	100%
2017	$322,772,697	$335,217,422	104%
2016	$310,124,928	$329,957,369	106%
2015	$329,752,832	$329,752,832	100%

- When describing the growth of the system's liabilities, the actuary writes that "Some of the growth is due to significant changes in the actuarial assumptions...including lowering the investment return assumption from 8.50% to 7.10%."
- The board of trustees has lowered the assumed rate of return multiple times since the June 30, 2012 valuation date. The assumed rate of return is scheduled to further decrease to 6.95 effective with the June 30, 2020 valuation date absent further board action, which would result in a total decrease of 1.55.

As of 6/30/19

Market Value: $7,916,465,279

Actuarial Value: $8,782,383,977

Liabilities: $13,957,626,309

Active Members: 46,864

Inactive Members: 85,421

Normal Retirement Formula:

MSEP 2000: 1.7% of compensation times years of service plus 0.8% to age 62 (temp benefit under Rule of 80 or Rule of 90 if under 2011 Tier).

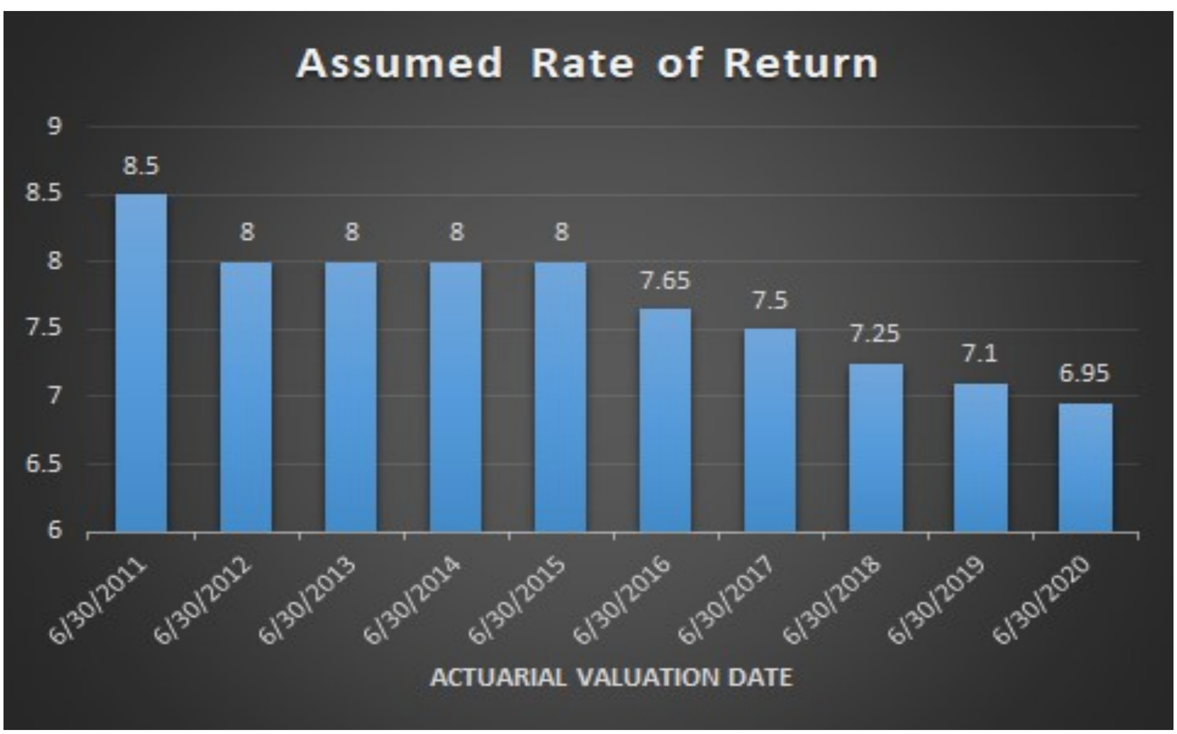
Normal Retirement Eligibility: Age 62 with 5 years of service or Rule of 80. 2011 Tier: Age 67 with 5 years of service or Rule of 90 with minimum age of 55.

Social Security Coverage: Yes

COLA: Annual Max 5%, 80% of CPI

Assumed Rate of Return: 7.1

Salary: 2.6



November 18, 2019

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 2018, the MOSERS Board of Trustees adopted a policy to reduce MOSERS' investment rate of return assumption from 7.5% to 7.25% effective with the June 30, 2018 actuarial valuation. In June 2019, the Board remained committed to this funding policy through the reduction of the investment rate of return assumption to 7.10% (from 7.25%). This policy provides for one more reduction of the plan's investment rate of return assumption of 15 basis points to 6.95% 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, 2019	FY21	7.10%	4.75%
June 30, 2020	FY22	6.95%	4.70%

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 <u>increased</u> Employer Contribution Rate to the plan and results in a <u>decreased</u> Funded Ratio. The information contained in the June 30, 2019 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

<u>Investment Return Assumption</u>	**6.10%**	**6.60%**	**7.10%**	**7.60%**	**8.10%**
Total Employer Contribution (% of pay)	27.97%	25.36%	22.88%	20.49%	18.18%
Total Employer Contribution ($ in millions)	$576.3	$522.5	$471.4	$422.2	$374.6
Actuarial Value of Assets	$8,782.4	$8,782.4	$8,782.4	$8,782.4	$8,782.4
Actuarial Accrued Liability	$15,537.7	$14,712.6	$13,957.6	$13,265.3	$12,629.2
Funded Ratio	56.5%	59.7%	62.9%	66.2%	69.5%

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, 2019 annual actuarial valuation, the ongoing annual cost of the **MSEP 2011** (known as the "Employer Normal Cost") is 3.98% of pay, compared to the **pre-2011** annual cost of 9.06% of pay. Approximately 46% of the 46,864 MOSERS' active employees are MSEP 2011 members.

Actuarial Valuation Results as of 06/30/19	**Percents of Payroll**		
	MSEP & MSEP 2000	**MSEP 2011**	**Weighted Average**
Normal Cost	9.06%	7.98%	8.61%
Less **Member** Contributions	0.00%	4.00%	1.66%
Employer Normal Cost	9.06%	3.98%	6.95%
Unfunded Actuarial Accrued Liabilities (UAAL) (level % of payrol amortization w layered bases)			15.93%
Total FY21 Computed Employer Contribution Rate			22.88%
Estimated Employer Contribution ($ in Millions)			$471.4

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.

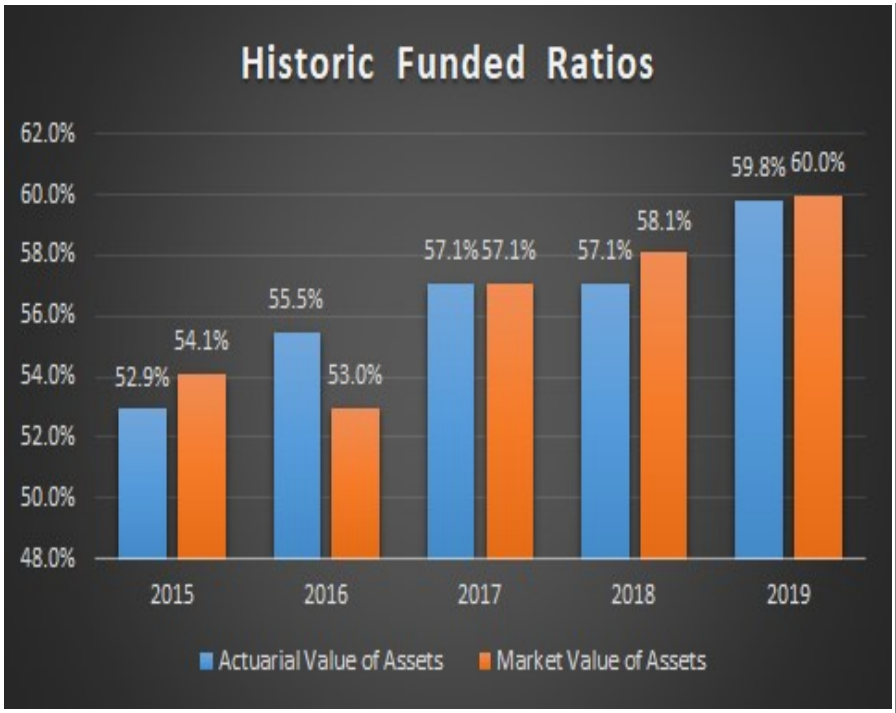
Sincerely,

Ronda Stegmann
Executive Director

cc: MOSERS Board of Trustees

MoDOT & HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

- Rate of return on investments equaled 6.7% (Market) and 8.3% (Actuarial) vs. 7% assumed as of 6/30/19.
- Completed a 5-year experience study for the period July 1, 2012 to June 30, 2017. Lowered the assumed rate of return from 7.75 to 7. Updated mortality tables. Adjusted additional assumptions including: price inflation, withdrawal, disability, retirement rate, and wage increases due to merit and longevity.
- The actuary writes "In accordance with changes in actuarial standards along with more recent changes in forecasts of future economic conditions, we recommend that economic assumptions continue to be reviewed annually each spring before the next valuation cycle begins."
- The board implemented a terminated vested buy-out program as authorized by SB 62 (2017).
- New tier provisions were passed in 2010 requiring increased age and service requirements and an employee contribution rate of 4% of pay for employees hired for the first time on or after 01/01/11. As of 6/30/19, 2,856 active members were covered under the 2011 tier.
- In 2009, the actuary presented an accelerated amortization schedule in accordance with 105.684.
- As of 6/30/19 valuation, closed 5-year amortization period for unfunded retiree liabilities and closed 20-year amortization period for the remaining unfunded liabilities (for the plan year beginning 7/1/20).
- 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 (58% of covered payroll).
- The Employers continue to meet the ADC.



Year Ending June 30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2019	$210,166,927	$210,166,927	100%
2018	$204,955,180	$204,955,180	100%
2017	$206,562,924	$206,562,924	100%
2016	$199,609,396	$199,609,396	100%
2015	$200,638,571	$200,638,571	100%

As of 6/30/19

Market Value: $2,423,261,830

Actuarial Value: $2,415,343,431

Liabilities: $4,037,369,708

Membership:

Active: 7,421 Inactive: 11,077

Normal Retirement Formula:

Year 2000 Plan: 1.7% of compensation times years of service plus 0.8% to age 62 (temporary benefit under rule of 80)

Normal Retirement Eligibility:

Age 62 with 5 years of service or rule of 80. Uniformed Patrol: Mandatory retirement at age 60. Rule of 80 with minimum age of 48.

Hired for the first time on/after 1/1/11: Age 67 with 5 years of service or Rule of 90 (age 55). Uniformed Patrol: Age 55 with 5 years of service. Mandatory retirement at age 60.

Social Security Coverage: Yes

COLA: Annual Max 5%; 80% of CPI

Assumed rate of return: 7%

Salary: 3%

From: Scott Simon
To: Michael Ruff
Subject: RE: MPERS
Date: Monday, November 4, 2019 2:01:57 PM

Michael, Thanks for the opportunity to review the one page summary. I have nothing to offer other than perhaps to consider removing the one time buyout reference as that does not seem all that consequential at this time. Otherwise, no concerns here.

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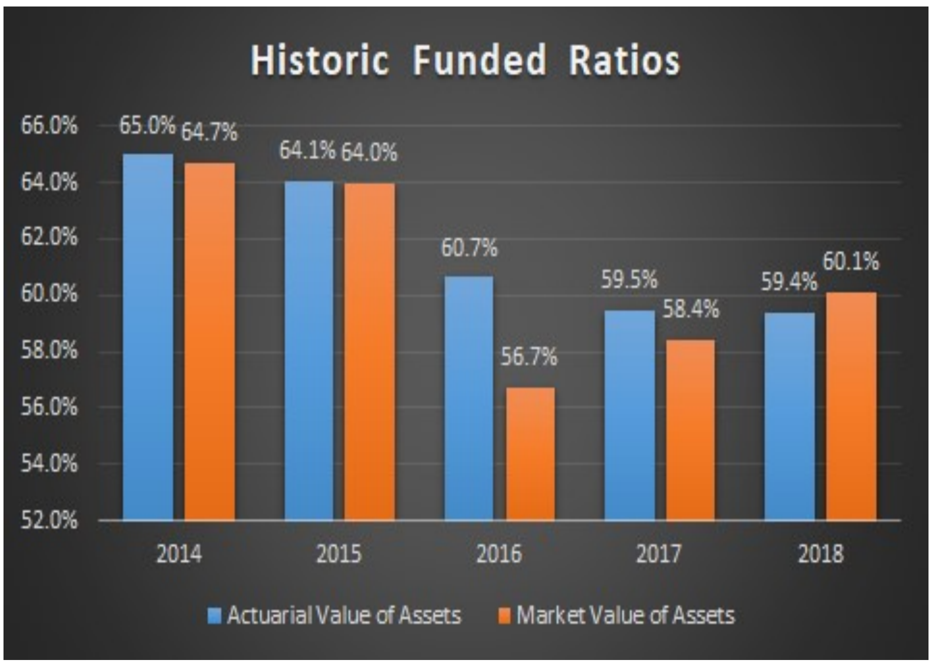
MPERS
Serving those who keep us safe.
Scott L Simon | Executive Director | MoDOT and Patrol Employees' Retirement System
Office Location: 1913 William St., Jefferson City, MO 65109 Mailing Address: Post Office Box 1930, Jefferson City, MO 65102-1930
Telephone Number: (573) 298-6020 Toll Free: 1-800-270-1271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

OVERLAND POLICE RETIREMENT FUND

- Rate of return on investments equaled 10.2% (Market) and 7% (Actuarial) vs. 7% assumed.
- The 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 was supported by a tax levy of $0.12 that had 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 actuary writes "These were recently increased...but are still below the recommended rate."
- 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.



Year Ending 3/31,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2019	$1,117,425	N/A	N/A
2018	$1,091,236	$553,559	51%
2017	$1,136,068	$233,363	21%
2016	$1,085,072	$242,311	22%
2015	$1,072,917	$251,812	23%
2014	$863,157	$240,878	28%

As of 4/1/18

Market Value: $13,277,434

Actuarial Value: $13,127,417

Liabilities: $22,083,580

Membership:

Active: 40 Inactive: 41

Normal Retirement Formula:

2.5% of compensation for the first 20 years of service plus 1.5% of compensation for each of the next 10 years of service.

Normal Retirement Eligibility:

20 years of service or Age 62 with 18 years of service or SSA full retirement age with 5 years of service.

Social Security Coverage: Yes

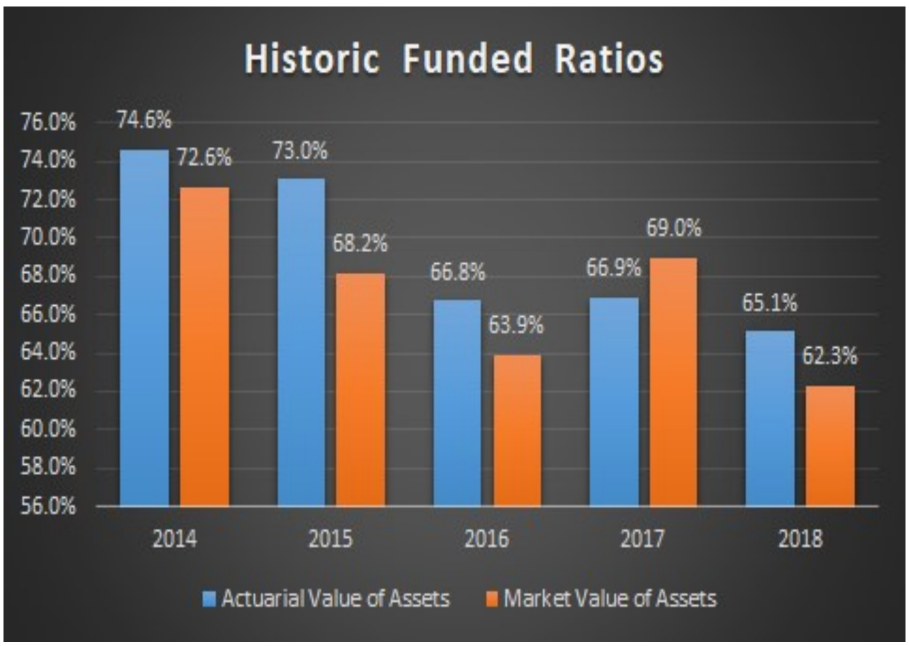
COLA: Annual Max 3%; 60% of CPI

Assumed Rate of Return: 7%

Salary: 3.5%

POPLAR BLUFF POLICE & FIRE PENSION PLAN

- Market rate of return on investments equaled -4.77% vs. 5% assumed.
- During the past plan year, the plan experienced an actuarial loss and an increase in the actuarially determined contribution. The actuary identifies several factors for the actuarial loss, including contributions less than the 2018 ADC, investment return below the assumed rate, and experience of the plan members.
- The City has not contributed 100% of the ADC beginning with plan year 2012. The actuary comments that "Over the years, the plan sponsor has been contributing 30-50% of the ADC. This contribution policy will likely not be enough to cover future benefit obligations and ADC is likely to increase with each year the contribution is under 100%."
- Prior to the 1/1/19 valuation, the plan's actuary conducted a comprehensive review of assumptions. Effective with the 1/1/19 valuation, the following assumptions were changed: increased the assumed rate of return from 5 to 5.25, increased inflation assumption from 2 to 2.25, and updated mortality tables.
- Effective with the January 1, 2015 actuarial valuation, the cost method was changed from the Aggregate method to the Entry Age Normal cost method with a 20-year amortization period for unfunded liabilities. Initial UAAL as of 1/1//15 will be amortized over a closed 20 year period. Subsequent gains and losses are amortized over 15 year periods.



January 1,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2019	$912,881	N/A	N/A
2018	$850,408	$254,653	30%
2017	$811,036	$253,225	31%
2016	$579,058	$330,864	57%
2015	$543,721	$235,832	43%
2014	$507,503	$233,861	46%

As of 1/1/19

Market Value: $11,967,063

Actuarial Value: $12,512,701

Liabilities: $19,200,854

Membership:

Active: 80 **Inactive**: 69

Normal Retirement Formula:

2% of compensation for the first 20 years of service plus 1.5% for each additional year of service. Maximum benefit of $1650 per month.

Normal Retirement Eligibility:

Later of age 55 or 5 years of service.

Social Security Coverage: No

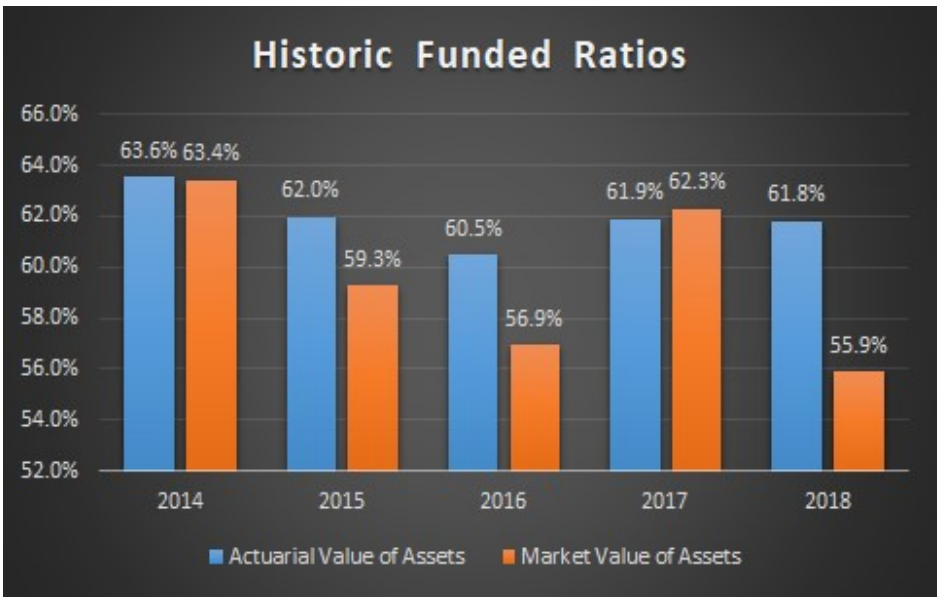
COLA: No COLA

Assumed rate of return: 5.25%

Salary: 3%

RAYTOWN POLICE OFFICERS' RETIREMENT FUND

- Rate of return on investments equaled –6.38% (market) and 4.02% (actuarial) vs. 7.5% assumed.
- Updated mortality tables to the most recent projection scale.
- 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.



Year ended 12/31,	RECOMMENDED CONTRIBUTION*	ACTUAL CONTRIBUTION*	PERCENT CONTRIBUTED
2019	$590,127	N/A	N/A
2018	$593,459	$593,459	100%
2017	$608,134	$608,134	100%
2016	$562,862	$562,862	100%
2015	$513,291	$510,320	99.4%
2014	$508,285	$509,880	100%

* Contribution history taken from January 1, 2019 Valuation, Page 19, Ten-Year Schedule of Contributions.

As of 1/1/19

Market Value: $9,609,110

Actuarial Value: $10,632,613

Liabilities: $17,203,958

Membership:

Active: 20 **Inactive**: 62

Normal Retirement Formula:

2.5% of compensation for the first 20 years of service plus 1% for each of the next 10 years of service. Benefits frozen as of 12/31/13.

Normal Retirement Eligibility:

Age 55 with 20 years of service

Social Security Coverage: Yes

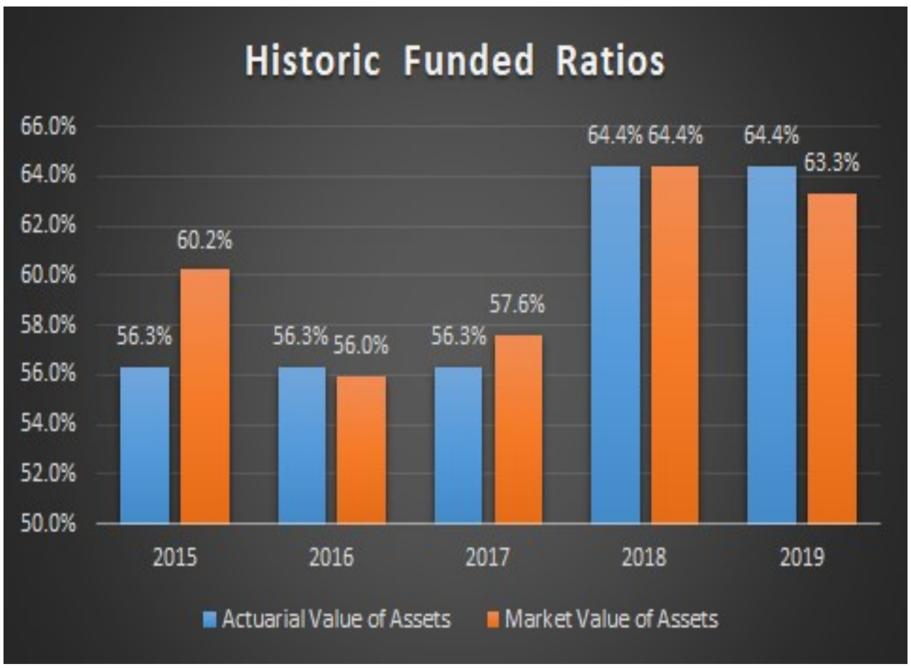
COLA: No COLA

Assumed Rate of Return: 7.5%

Salary: 4%

ROCK HILL UNIFORMED EMPLOYEES' PENSION PLAN

- For the year ended 3/31/19, the rate of return on investments equaled 3.09% (market) compared to 6.4% assumed.*
- This plan was closed to new hires in May 2003. Benefit accruals were frozen as of 5/1/11.
- All active participants as well as new hires are members of LAGERS as of September 2007. The City had previously considered transferring the plan to LAGERS under section 70.621. However, the City's 3/31/19 CAFR, page 17, notes that "In fiscal year 2019, the Board of Aldermen decided to hold off on transferring the administration and trustee service for the...Plan to LAGERS due to the down turn in market performance."
- The employer has not met the ADC since 2008. The City's 3/31/19 CAFR, page 17, notes that "The liability for the Uniformed Employee Pension Fund continues to be an ongoing issue. The City contributions into the plan have averaged 75% of the Actuarial Required Contribution (ARC) for the past six years."



Year Ending March 31,	RECOMMENDED CONTRIBUTION**	ACTUAL CONTRIBUTION**	PERCENT CONTRIBUTED
2019	$178,339	$150,000	84%
2018	$212,536	$150,000	71%
2017	$212,536	$150,000	71%
2016	$199,227	$150,000	75%
2015	$199,227	$275,000**	138%

As of 3/31/19 & 5/1/18

Market Value: $2,042,542*

Actuarial Value: $2,077,350*

Liabilities: $3,223,807*

Membership:

Active: 7 **Inactive**: 19

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 Eligibility: Age 60 with 20 years of service.

Social Security Coverage: Yes

COLA: No COLA

Assumed Rate of Return: 6.4

Salary: N/A

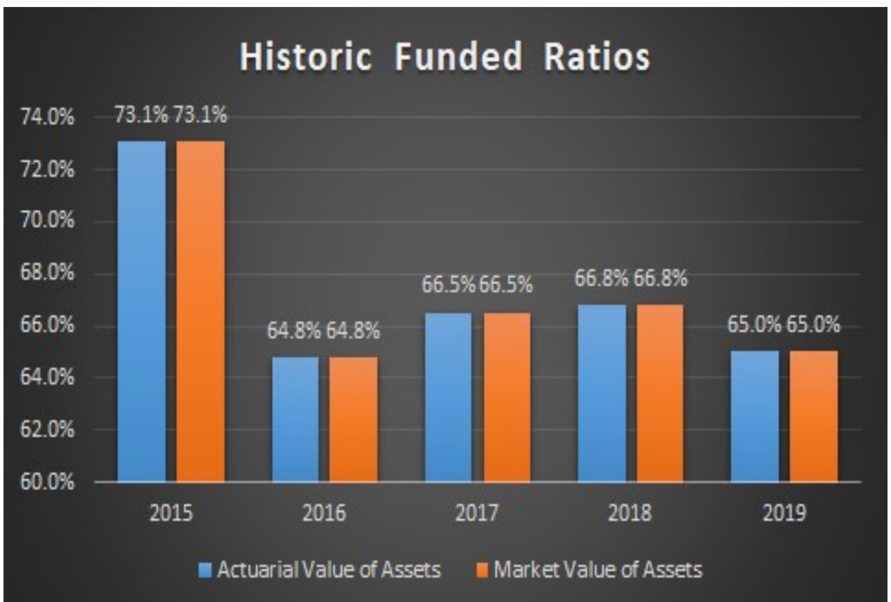
***Market value from 3/31/19 CAFR, page 46. Actuarial value and liabilities from 5/1/18 actuarial valuation page 2.**

**Contribution information found in Comprehensive Annual Financial Report for Fiscal Year Ended March 31, 2019, Page 66, 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.

Investment return information, page 65, 3/31/19 CAFR, Schedule of Changes in Net Pension Liability and Related Ratios

FIREFIGHTERS' RETIREMENT FUND OF THE CITY OF SEDALIA

- Rate of return on investments equaled 5.4% versus 7% assumed.
- Updated mortality tables to the most recent projection scale.
- Completed an experience study in November 2017 for the period 4/1/09 to 3/3/17. Updated termination and retirement rate assumptions and updated mortality tables.
- The plan values assets at market value and does not smooth investment gains and losses.
- Beginning with the 4/1/16 valuation, 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.
- The plan is funded by both property tax revenues ($0.051 per $100 of assessed valuation) and city-appropriated contributions based on the 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
2020	$417,212	N/A	N/A
2019	$385,272	$367,813	95%
2018	$362,295	$450,145	124%
2017	$439,494	$353,426	80%
2016	$358,679	$331,451	92%
2015	$331,814	$367,229	111%

As of 4/1/19

Market Value: $7,139,032

Actuarial Value: $7,139,032

Liabilities: $10,976,924

Membership:

Active: 40 **Inactive**: 51

Normal Retirement Formula:

50% of Indexed Earnings Base in the Year of Retirement

2019 IEB = $57,796

Normal Retirement Eligibility:

Age 55 with 22 years of service

Social Security Coverage: No

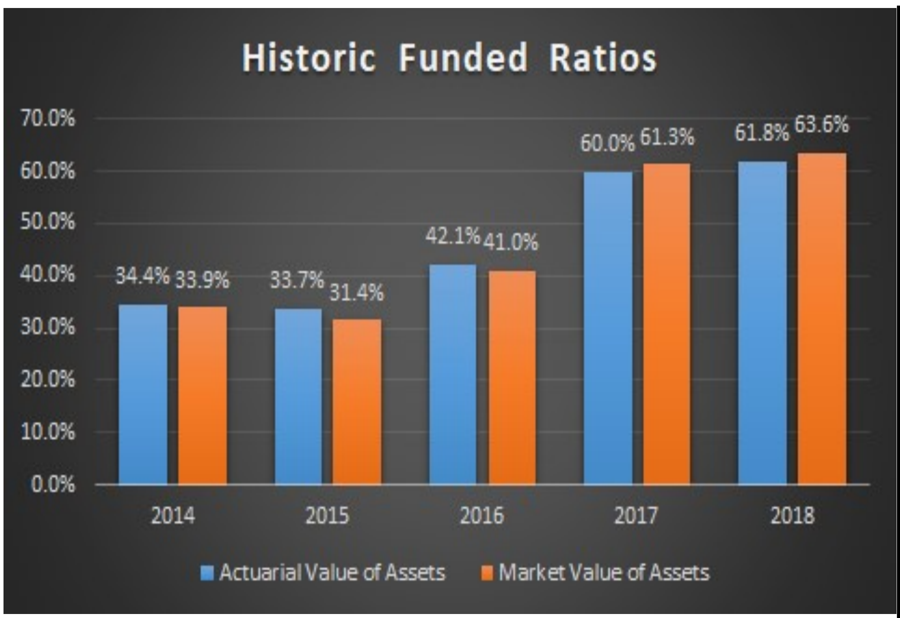
COLA: Annual max 3%

Assumed Rate of Return: 7%

Increases in IEB: 3%

FIREFIGHTERS’ RETIREMENT PLAN OF THE CITY OF ST. LOUIS

- Rate of return on investments equaled 9.13% (Market) and 7.85% (Actuarial) vs. 7.25% assumed.
- Completed an experience study for October 1, 2013 through September 30, 2017. Reduced the assumed rate of return from 7.625 to 7.25. Revised multiple assumptions, including mortality tables, disability rate, withdrawal rate, retirement rate, marriage, and sick leave. Reduced payroll growth from 3 to 2.75 and increases in the Consumer Price Index from 3 to 2.75. These changes reduced the plan’s liabilities and resulted in a lower actuarially determined contribution.
- 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 employer has contributed 100% of the actuarially determined contribution.



FY ending 9/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2019	$8,995,724	N/A	N/A
2018	$8,022,799	$8,022,799	100%
2017	$9,262,698	$9,262,698	100%
2016	$9,148,007	$9,148,007	100%
2015	$7,435,635	$7,435,635	100%

As of 10/1/18

Market Value: $76,985,258

Actuarial Value: $74,839,926

Liabilities: $121,093,077

Membership:

Active: 648 **Inactive**: 78

Normal Retirement Formula (new members since 2/1/13):

2% of average final compensation for the first 25 years of service plus 2.5% (5% for grandfathered participants) in excess of 25 years of service. Maximum of 75% of compensation.

Normal Retirement Eligibility: Age 55 with 20 years of service.

Social Security Coverage: No

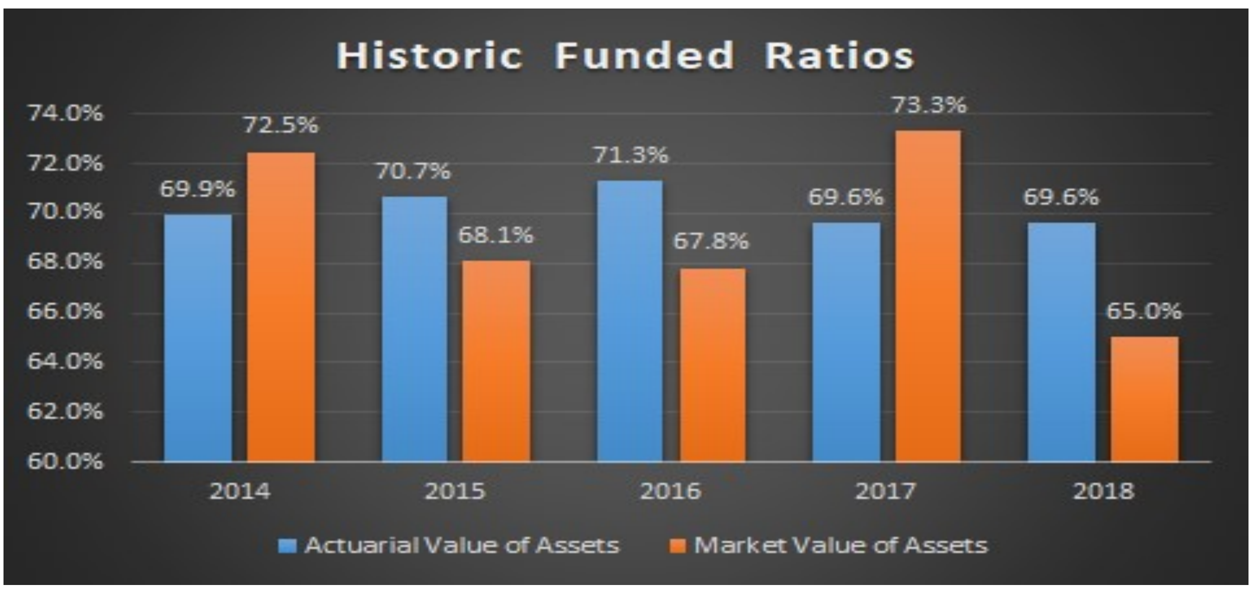
COLA: 1.5% to 5% not to exceed CPI depending on age and years of service. CPI must be at least 1% to receive a COLA. COLA cap of 25%.

Assumed Rate of Return: 7.25

Salary: 2.75

ST. LOUIS COUNTY RETIREMENT PLAN

- Rate of return on investments equaled –6.9% (Market) and 4.8% (Actuarial) vs. 7.5% assumed.
- Effective with the 1/1/19 valuation, the plan changed the amortization method from an open 25-year period to a 25-year closed amortization period. Updated mortality tables.
- The County Council enacted a new tier for employees hired on/after 2/1/18. All such employees contribute 4% and have increased age and service requirements. Civilian employees have a normal retirement age of 67 with 3 years of service or Rule of 85, 7 year vesting, and a lower benefit multiplier (1.3 vs. 1.5). Uniformed employees have Rule of 85 (instead of 80) and a lower benefit multiplier (1.4 vs. 1.6).
- The actuary comments that "The decrease in the funded ratios is primarily due to the unfavorable investment results."
- The plan maintains both uniformed and civilian employee components. The actuary values them separately.



FY ending 12/31,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2019	$43,165,958	N/A	N/A
2018	$44,349,857	$44,342,552	99.9%
2017	$40,372,354	$40,381,200	100%
2016	$39,938,958	$39,938,958	100%
2015	$37,894,303	$37,894,303	100%

As of 1/1/19

Market Value: $643,785,906

Actuarial Value: $688,838,072

Liabilities: $990,041,483

Membership:

Active: 3,737 **Inactive**: 4,753

Normal Retirement Formula:

Civilian: 1.5% of compensation x years of service plus $15 per month x years of service.

Civilian Hired on/after 2/1/18: 1.3% of compensation x years of service plus $15 per month x years of service.

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

Uniformed Hired on/after 2/1/18: 1.4% of compensation x years of service plus $30 per month x years of service to age 65 then $5 per month x years of service.

Normal Retirement Eligibility:

Civilian: Age 65 with 3 years of service or Rule of 80.

Civilian Hired on/after 2/1/18: Age 67 and 3 years of service or Rule of 85.

Uniformed: Age 60 with 10 years of service. Age 65 with 3 years of service. Rule of 80.

Uniformed Hired on/after 2/1/18: Age 60 with 10 years of service. Age 65 with 3 years of service. Rule of 85.

Social Security Coverage: Yes

COLA: Ad hoc

Assumed Rate of Return: 7.5

Salary: 3.75 Civilian, 3.25 Uniformed