JOINT COMMITTEE ON PUBLIC EMPLOYEE RETIREMENT
FOURTH QUARTER MEETING
December 3, 2018

The Joint Committee on Public Employee Retirement (JCPER) held its 4th Quarter Meeting on Monday, December 3, 2018 at 10:30am in House Hearing Room 6. Chairman Schaaf called the meeting to order. Joint Committee members in attendance were Senators Koenig (via conference call), Rizzo, Schaaf, Wallingford, and Walsh and Representatives Anders, Brown (27), Runions, Shull (16), and Walker (03). Senator Curls and Representative Bernskoetter were not in attendance.

Chairman Schaaf turned the meeting over to the Executive Director, Michael Ruff. The 2018 Watch List, highlighting plans that are below seventy percent funded on a market value basis, was presented to the Committee. Nineteen plans are on the current Watch List compared to twenty-seven from the previous year. Each plan on the Watch List was contacted and given an opportunity to review the information and provide a response. Five plans provided written responses, which were included in the committee members' packets.

The Director provided an update on the Kansas City Public School Retirement System (KCPSRS) following a presentation made a year ago to the Committee by its executive director. In 2018, the General Assembly passed SB 892, which included provisions to address the system's funding situation. The legislation increases the employer contribution rate from 9% to 10.5% in calendar year 2019, and then to 12% on January 1, 2020. This should enable the plan to continue to improve its funded status.

The Director discussed the pension forfeiture law under section 105.669. This law was passed to permit pension forfeiture for the commission of certain felony theft offenses. The first known application of the law occurred this year when the former Callaway County Collector pled guilty to federal charges of stealing county funds. As a member of both LAGERS and CERF, the former collector's benefits were reduced based on the application of the statute.

An inquiry into whether plans were submitting procurement action plans for the utilization of women and minority managers was discussed. This requirement is found in three statutes. Reporting has dropped off, and JCPER currently receives 5-10 procurement action plans annually. The Director proposed that staff begin contacting all plans by mail and remind them of the requirement to file a procurement action plan with JCPER and the Governor's Minority Advocacy Commission.

Next, the Director provided information on an exposure draft of a new set of mortality tables released by the Society of Actuaries: Pub-2010 Public Retirement Plans Mortality Tables. This publication differs from the SOA's prior set of tables because it is based on data from public pension systems. It also shows variation in mortality by job categories: teachers, public safety, and general employees. Generally, the tables show longer life expectancies.

Quarterly plan investment reporting was reviewed from the third quarter of 2018, ending September 30th. Overall, 12-month returns showed single digits, with a few double-digit returns. There were no negative returns. The Director cautioned that the volatility experienced in the investment markets during October and November could result in relatively flat returns for the 4th quarter.

Chairman Schaaf recognized the departing members of the Committee: himself, Representative Anders, Representative Bernskoetter, and Representative Walker. The Director recognized and thanked departing JCPER pension analyst, Michele Fehlings, for her work for the JCPER.

With no further business being presented, the committee adjourned.

Michael Ruff
Executive Director

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JOINT COMMITTEE ON PUBLIC EMPLOYEE RETIREMENT

4th QUARTER MEETING
December 3, 2018
10:30 a.m.— House Hearing Room 6

AGENDA

Roll Call

Presentation of Annual Watch List

Status Update: Kansas City Public School Retirement System

105.669, RSMo, Pension Forfeiture

Procurement Action Plans, Sections 104.621, 105.702, 169.573, RSMo

Mortality Tables: SOA Exposure draft of Pub-2010

Quarterly Investment Reporting

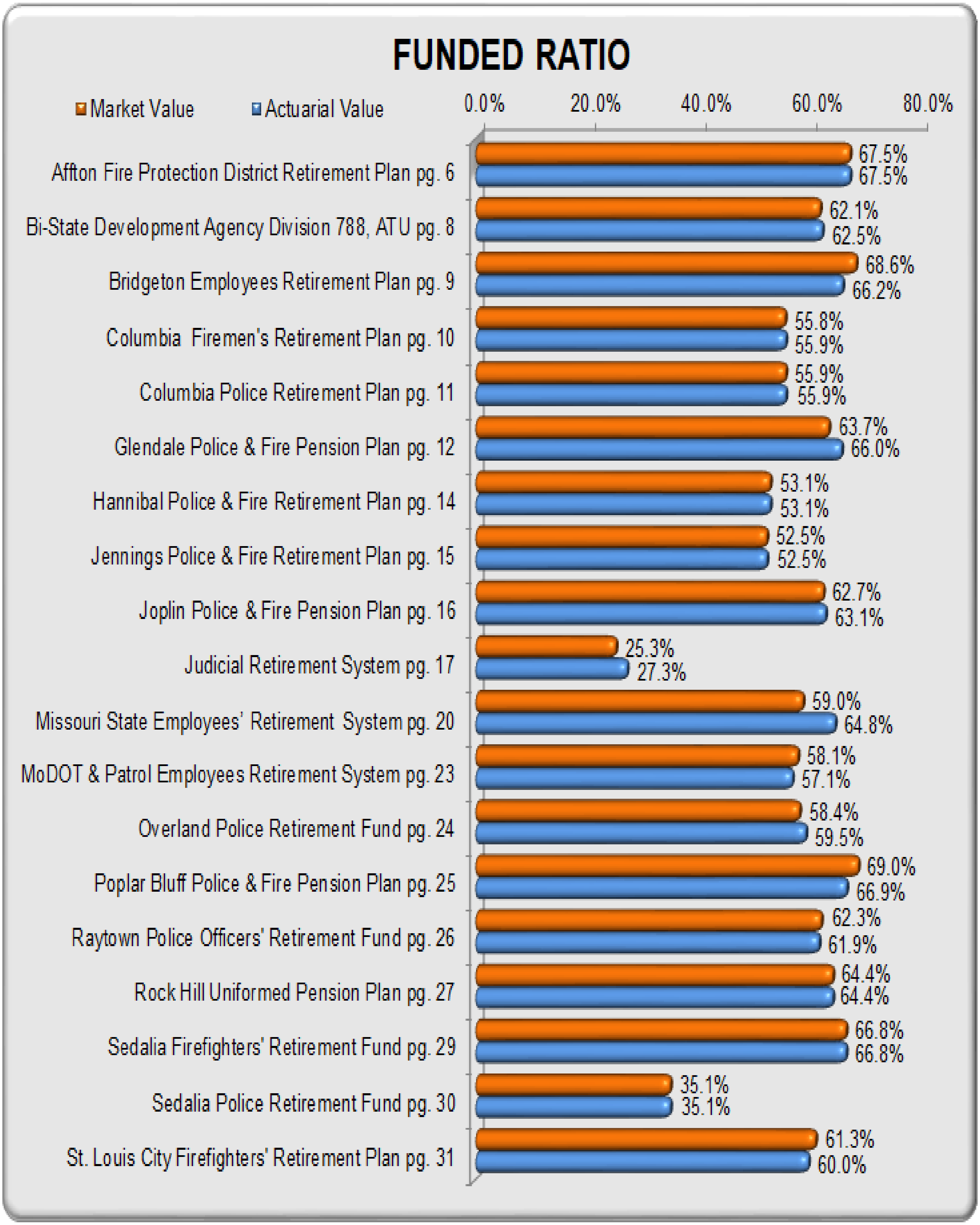
Recognition of Departing JCPER members

JOINT COMMITTEE ON PUBLIC EMPLOYEE RETIREMENT

ANNUAL WATCH LIST

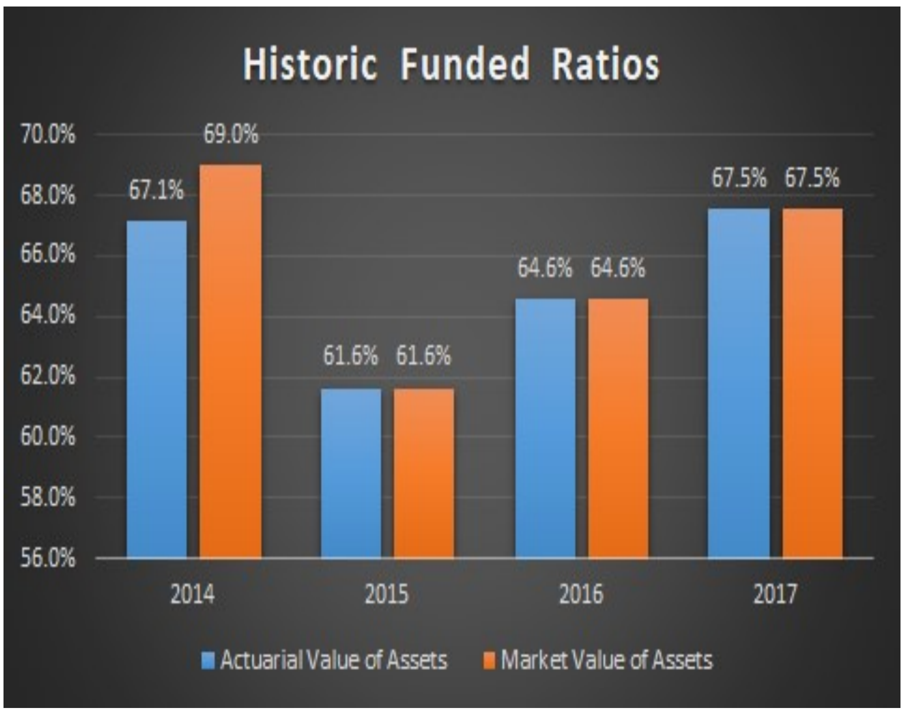
December 2018

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
Market Value
Actuarial Value
0.0%
20.0%
40.0%
60.0%
80.0%
Affton Fire Protection District Retirement Plan pg. 6
67.5%
67.5%
Bi-State Development Agency Division 788, ATU pg. 8
62.1%
62.5%
Bridgeton Employees Retirement Plan pg. 9
68.6%
66.2%
Columbia Firemen's Retirement Plan pg. 10
55.8%
55.9%
Columbia Police Retirement Plan pg. 11
55.9%
55.9%
Glendale Police & Fire Pension Plan pg. 12
63.7%
66.0%
Hannibal Police & Fire Retirement Plan pg. 14
53.1%
53.1%
Jennings Police & Fire Retirement Plan pg. 15
52.5%
52.5%
Joplin Police & Fire Pension Plan pg. 16
62.7%
63.1%
Judicial Retirement System pg. 17
25.3%
27.3%
Missouri State Employees' Retirement System pg. 20
59.0%
64.8%
MoDOT & Patrol Employees Retirement System pg. 23
58.1%
57.1%
Overland Police Retirement Fund pg. 24
58.4%
59.5%
Poplar Bluff Police & Fire Pension Plan pg. 25
69.0%
66.9%
Raytown Police Officers' Retirement Fund pg. 26
62.3%
61.9%
Rock Hill Uniformed Pension Plan pg. 27
64.4%
64.4%
Sedalia Firefighters' Retirement Fund pg. 29
66.8%
66.8%
Sedalia Police Retirement Fund pg. 30
35.1%
35.1%
St. Louis City Firefighters' Retirement Plan pg. 31
61.3%
60.0%

AFFTON FIRE PROTECTION DISTRICT RETIREMENT PLAN

- Rate of return on investments equaled 15.1% (Market) vs. 6.5% assumed.
- Updated mortality tables, which increased actuarial accrued liability by $328,106. This increase, in addition to another actuarial loss, was partially offset by investment return.
- The actuary writes that the "unfunded accrued liability remained relatively stable…"
- 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.
- 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 open 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
2017	$440,154	$310,020	70%
2016	$453,879	$300,389	66%
2015	$315,183	$304,357	97%
2014	$248,521	$300,403	120%

As of 1/1/18

Market Value: $9,077,602

Actuarial Value: $9,077,602

Liabilities: $13,442,624

Membership:

Active: 38 **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: 3.5%

Affton Fire Protection District

November 20, 2018

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

RE: Affton Fire Protection District

Dear Mr. Ruff:

Thank you for your email of Tuesday, November 13, 2018, regarding Affton Fire Protection District.

Affton Fire Protection District, its Board of Directors and staff, fully understand the significance of the underfunded portion of the District's Plan, and the Board has recently made some decisions to aggressively address the issue.

Beginning this year, 2019, the Board of Directors has budgeted an additional $700,000 to be taken from the General Fund to transfer to the Pension Fund to lower its unfunded liability.

While the present Board cannot bind future boards, it is the intent of the present Board to continue to add the same amount of money annually from the General Fund to the Pension Fund until such time as the underfunded liability is reduced to the point where we meet minimum funded ratios.

The District has recently engaged Nyhart as its Pension Plan Actuary, in an attempt to more aggressively address the underfunded Pension Plan which the Board inherited. We believe that that firm, and in particular its representative, Nick Meggos, will give the District a fresh and creative prospective on addressing the needs of the District Pension Plan.

Should you have any questions, please contact me. We are happy to cooperate with JCPER.

Very truly yours,

Nickolas Fahs, Fire Chief

cc: Nick Meggos
Frank J. Vatterott
John Hefele

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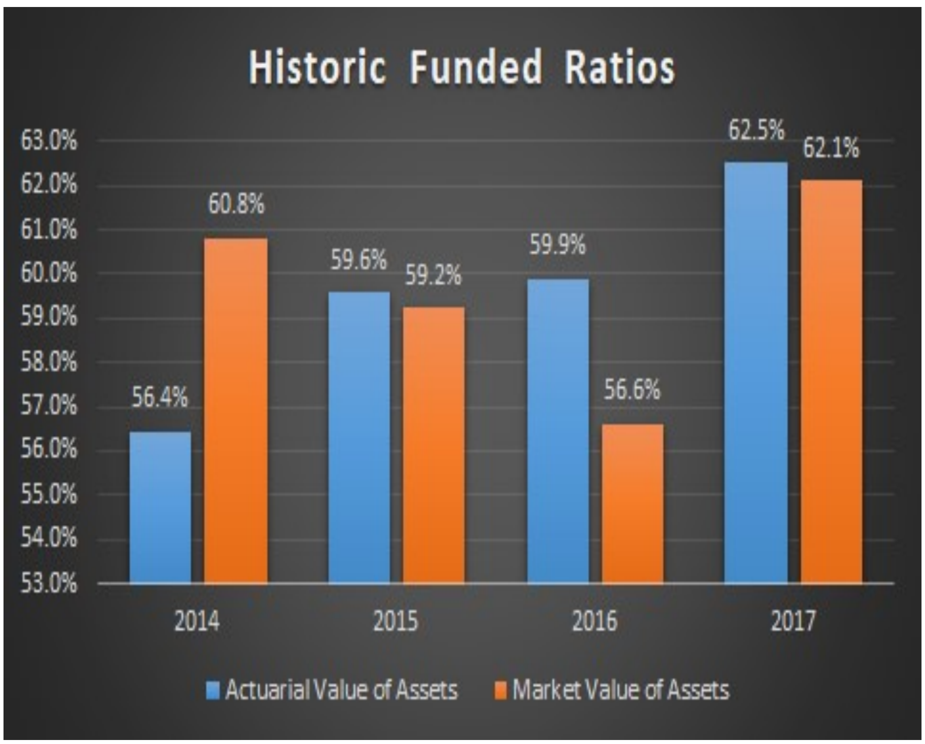
9282 Gravois Road • St. Louis, MO 63123 • (314) 631-1803 • Fax (314) 631-3569

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

- Rate of return on investments equaled 13% (Market) and 7.4% (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 11/3/16 meeting, the Pension Committee adopted a 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 3/31/17 Financial Statements (pg. 25), 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
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%
2013	$8,157,204	$8,157,204	100%

As of 4/1/17

Market Value: $128,425,595

Actuarial Value: $129,194,067

Liabilities: $206,616,631

Membership:

Active: 1,383 **Inactive**: 1,334

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.

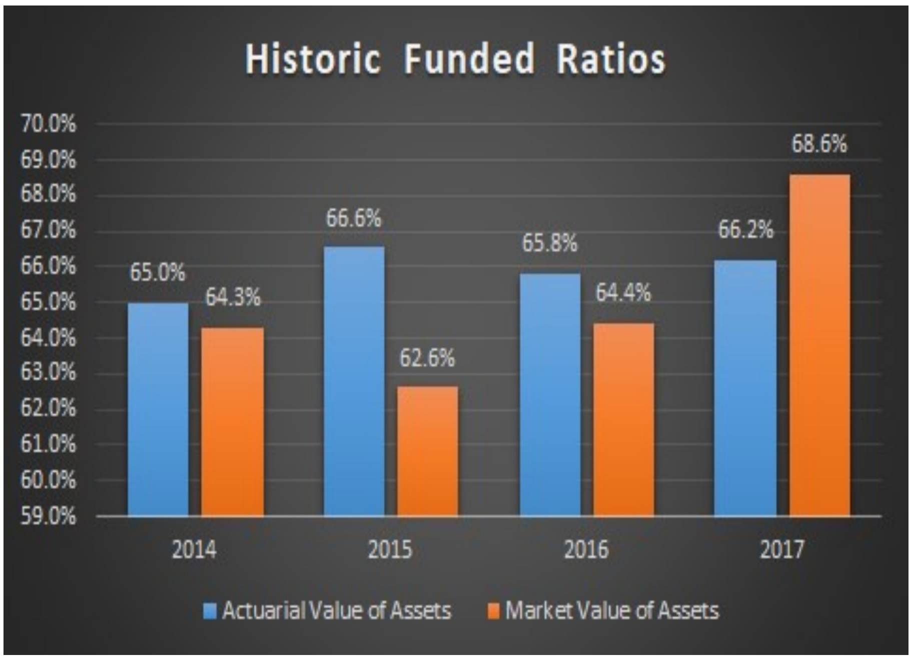
Social Security Coverage: Yes

COLA: Ad hoc COLA

Assumed rate of return: 7%

BRIDGETON EMPLOYEES RETIREMENT PLAN

- Rate of return on investments equaled 11.7% (Market) and 5.6% (Actuarial) vs. assumed 7.5%.
- 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 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 [sic] 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
2018	$1,697,999	N/A	N/A
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 1/1/18

Market Value: $30,321,918*

Actuarial Value: $29,267,977

Liabilities: $44,190,819

Membership:

Active: 88 **Inactive**: 162

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%

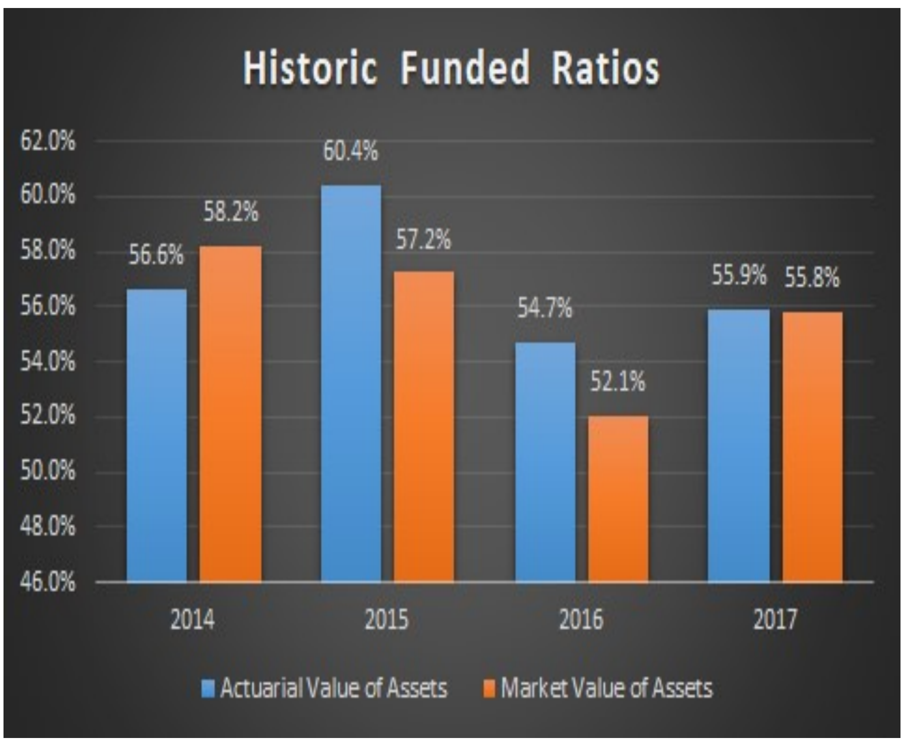
Salary: 4%

*Market Value from 1/1/18 actuarial valuation including accrued contribution of $1,680,000.

COLUMBIA FIREMEN & POLICE RETIREMENT SYSTEMS

- The Fire and Police plans are commingled for investment purposes. Rate of return on investments equaled 11.1% (Market) & 5.7% (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 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



Yearr Ending 9/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
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 9/30/17

Market Value: $78,463,607

Actuarial Value: $78,564,441

Liabilities: $140,441,760

Membership:

Active: 142 **Inactive**: 158

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

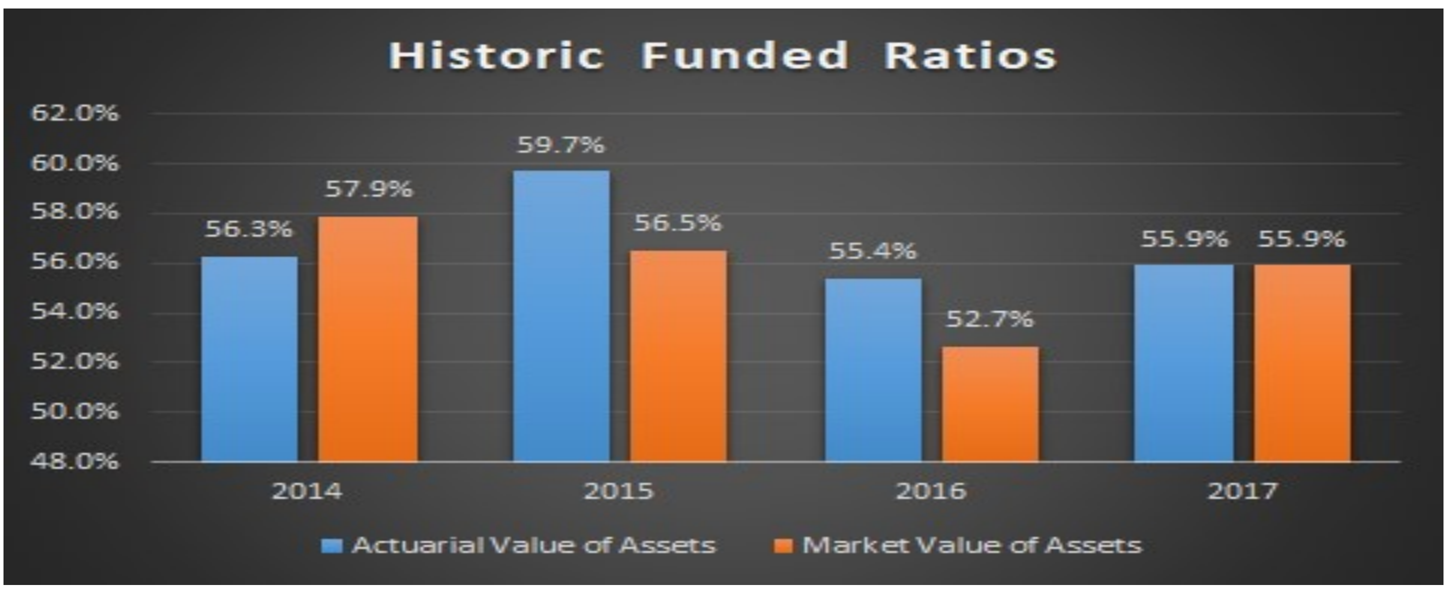
Police as of 9/30/17

Market Value:	$52,261,817	**Membership**:		**Assumed Rate of Return**: 7%	
Actuarial Value:	$52,328,979	**Active**:	151	**Salary**:	3.25%
Liabilities:	$93,482,886	**Inactive**:	184	**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.

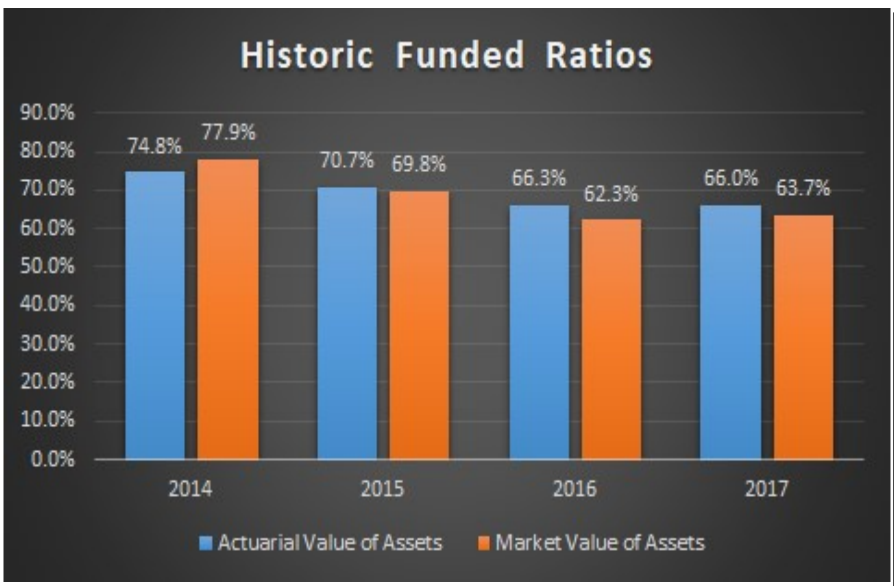
Normal Retirement Eligibility: 20 years of service or age 65. Hired on/after 10/1/12: 25 years of service or age 65.



Year ending 9/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
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%

GLENDALE POLICE & FIRE PENSION PLAN

- Investment return equaled 9% (market) and 6.2% (actuarial) vs. 7.25% assumed.
- The plan made two assumption changes: updated mortality tables and lowered the assumed rate of return for investments from 7.25 to 7. The actuary writes "these changes were made to update the assumptions to our best estimates of future experience."
- In the prior year, the plan reduced the assumed rate of return from 7.5 to 7.25.
- 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 is funded from two sources: a dedicated property tax levy and an employee contribution of 3.25%. The actuary writes 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 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 the...Plan joining the MO LAGERS system, but how to fund the underfunded amount is the sticking point."



Year Ending 6/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2018	$376,231	N/A	N/A
2017	$370,101	$130,456	35%
2016	$333,799	$130,235	39%
2015	$294,386	$130,695	45%
2014	$305,702	$127,993	42%

As of 7/1/17

Market Value: $5,195,067

Actuarial Value: $5,378,273

Liabilities: $8,143,480

Membership:

Active: 24 **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%

From:	Daniel Lawrence
To:	Michael Ruff
Cc:	"Andrew Witte"; Benjamin DeClue
Subject:	RE: Glendale Police & Fire Pension Plan
Date:	Tuesday, November 13, 2018 2:06:35 PM

Dear Mr. Ruff:

New for FY 2019, the Board of Alderman has budgeted $250,000 of the City of Glendale's Prop P funds to be contributed to the Pension Plan for the FYE 6/30/2019. This is in addition to the property tax and employee contribution. This will be broken up in equal monthly payments of $20,833.33 beginning July, 2018 through June, 2019. All payments are up to date.

Thank you,

Dan Lawrence
Finance Officer

From: Michael Ruff [mailto:mruff@senate.mo.gov]
Sent: Tuesday, November 13, 2018 11:37 AM
To: Daniel Lawrence; Andrew Witte
Subject: Glendale Police & Fire Pension Plan

Dear Mr. Lawrence and Mr. Witte,
Each year, the Joint Committee on Public Employee Retirement (JCPER) 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 JCPER as part of the plan year 2016 annual 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 sheet relating to the Glendale Police & Fire Pension Plan that will be presented to the JCPER at its fourth quarter meeting on Monday, December 3, 2018 at 10:30am in House Hearing Room 6. 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 Monday, November 26.

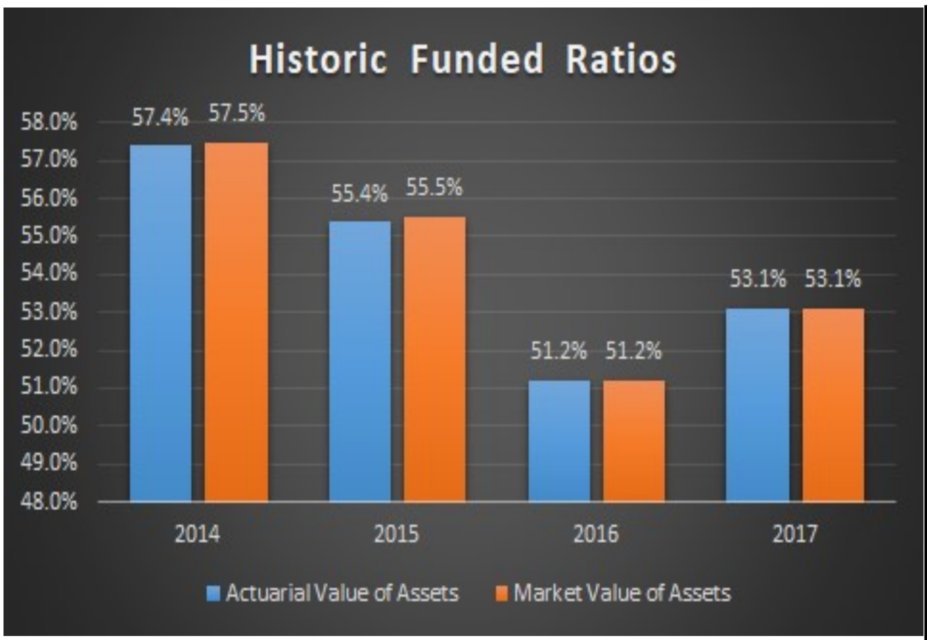
Thank you for your consideration and ongoing cooperation with the JCPER. Please do not hesitate to contact me if you have any questions or would like additional information.

Sincerely,

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

HANNIBAL POLICE & FIRE RETIREMENT PLAN

- Rate of return on investments equaled 9.7% (Market) vs. 7% assumed.
- The plan does not smooth investment gains/losses.
- The plan's actuary writes "Over the last six years, the city has contributed well in excess of the recommended contribution, and as expected, the funded ratio of the plan has gradually increased. Last year, in the 2016 valuation, the funding interest rate was lowered, and generational mortality was introduced. These more conservative assumptions will 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.
- 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
2017	$1,193,766	$1,276,452	107%
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%

As of 7/1/17

Market Value: $16,613,574

Actuarial Value: $16,613,574

Liabilities: $31,277,416

Membership:

Active: 76 Inactive: 69

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: Age 55 or 25 years of service

Social Security Coverage: No

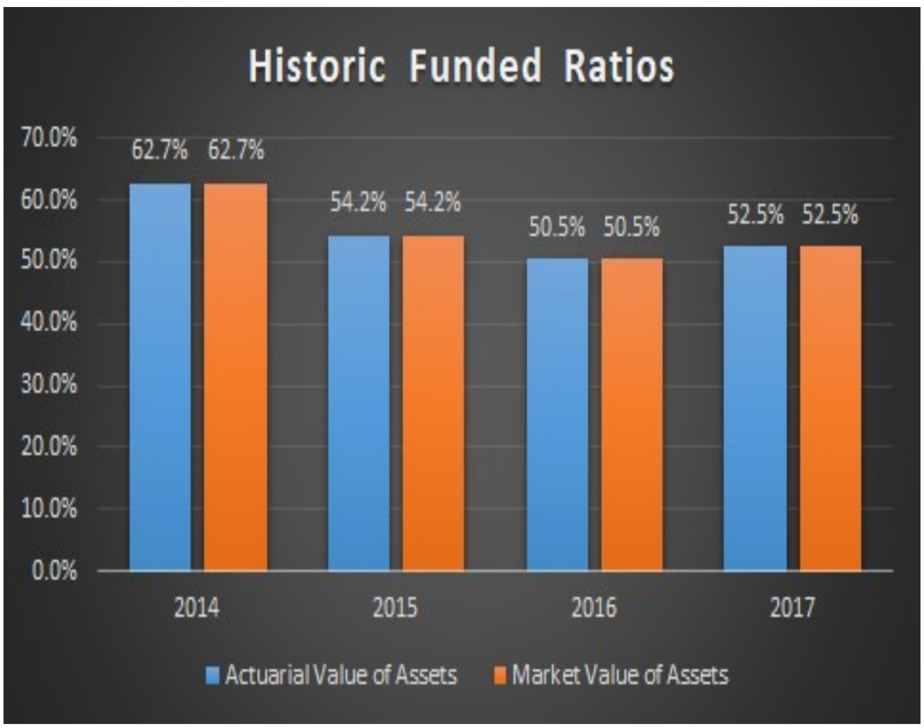
COLA: Ad hoc COLA. No COLA if funded ratio is below 50%

Assumed Rate of Return: 7%

Salary: 3.5%

JENNINGS POLICE & FIRE RETIREMENT FUND

- Rate of return on investments equaled 14.2% (Market) vs. 7.25% assumed.
- The City entered into an agreement with LAGERS to transfer administration of the plan to LAGERS under section 70.621 effective 12/1/17. LAGERS has established a closed 15-year payment plan with a level contribution rate of approximately $242,000 to satisfy all obligations and pay all benefits.
- Funded ratio has been decreasing since 1996 (94.29% in 1996, 52.5% as of 12/31/16). 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. In 2016, the City's prior actuary projected the fund to be solvent through its remaining lifetime.
- 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 Ending 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 12/31/16

Market Value: $3,760,592

Actuarial Value: $3,760,592

Liabilities: $7,160,677

Membership:

Active: 0 Inactive: 39

Normal Retirement Formula:

2.25% of compensation times years of service. Maximum of 50% of compensation.

Normal Retirement Eligibility:

Age 55 with 20 years of service

Age 65 with 15 years of service

Social Security Coverage: Yes

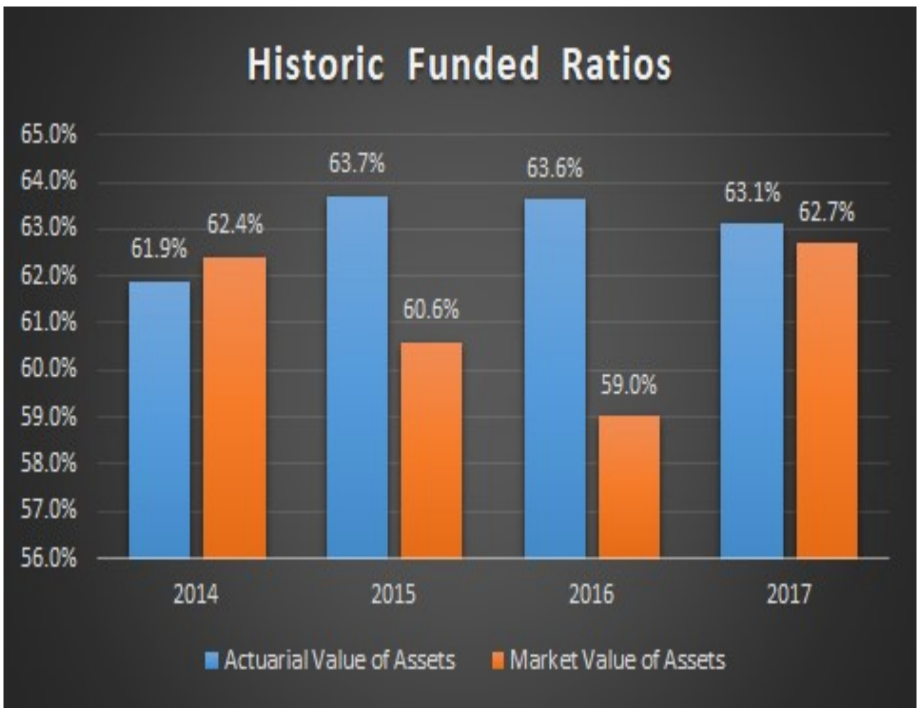
COLA: No COLA

Assumed rate of return: 7.25

The City closed the plan in 1987 with new hires joining LAGERS.

JOPLIN POLICE & FIRE PENSION PLAN

- Rate of return on investments equaled 13.9% (Market) & 6.3% (Actuarial) vs. 7% assumed.
- 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%. These changes resulted in an increase in liabilities of $1.8 million and an employer contribution rate increase of 1.67% of payroll.
- Closed 30-year period as of 11/01/06 for amortization of unfunded liabilities.
- 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
2019	$2,814,812	N/A	N/A
2018	$2,706,972	N/A	N/A
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%
2014	$2,737,752	$2,919,862	107%

As of 10/31/17

Market Value: $40,142,727

Actuarial Value: $40,447,108

Liabilities: $64,017,311

Membership:

Active: 191 Inactive: 162

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

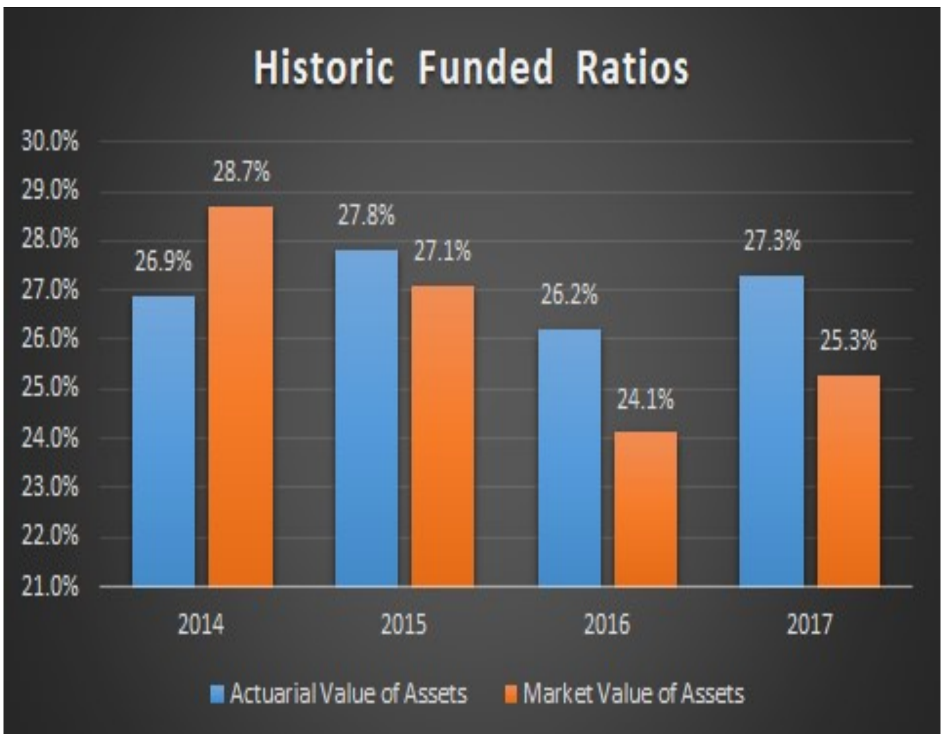
Assumed rate of return: 6.75

Salary: 2.5

*Contribution information is taken from Actuarial Valuation Report as of October 31, 2017, Page I-2, Schedule of Employer Contributions

JUDICIAL RETIREMENT SYSTEM

- For the year ending 6/30/18, rate of return on investments equaled 7.71% (Market) and 5.51% (Actuarial) vs. 7.5% assumed.
- In June 2018, the system's actuary completed a study of the system's economic assumptions. Lowered the assumed rate of return from 7.5 to 7.25 with two planned annual decreases of 0.15 until the rate reaches 6.95. Lowered general wage growth from 3.0 to 2.75.
- Modified the method of amortizing the UAAL from a closed 30 (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.
- 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.



FY Ending 6/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
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%
2014	$29,264,877	$29,264,877	100%

As of 6/30/18

Market Value: $150,199,575

Actuarial Value: $162,135,045

Liabilities: $593,788,592

Membership:

Active: 415 **Inactive**: 595

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: 7.25

Salary: 2.75

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 26, 2018

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, 2018 funded ratio of 27.3%.

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. This policy provides for an annual reduction of the plan's investment rate of return assumption by 15 basis points until reaching 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, 2018	FY20	7.25%	4.75%
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	6.25%	6.75%	7.25%	7.75%	8.25%
Total Employer Contribution (% of pay)	69.32%	66.46%	63.80%	61.35%	59.06%
Total Employer Contribution ($ in millions)	$43.6	$41.8	$40.1	$38.6	$37.2
Actuarial Value of Assets	$162.1	$162.1	$162.1	$162.1	$162.1
Actuarial Accrued Liability	$654.8	$623.1	$593.8	$566.7	$541.6
Funded Ratio	24.8%	26.0%	27.3%	28.6%	29.9%

Phone: (573) 632 - 6100 • (800) 827 - 1063
Relay Missouri: 7-1-1 (Voice) • (800) 735 - 2966 (TTY)
Email: mosers@mosers.org • Website: www.mosers.org

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 16.42% of pay, compared to the **pre-2011** annual cost of 23.76% of pay. Approximately 37% of the 415 Judicial Plan active employees are Judicial Plan 2011 members.

Judicial Plan Actuarial Valuation Results as of 06/30/18	Percents of Payroll		
	Pre 01/01/11 Hires	**Post 01/01/11 Hires**	**Weighted Average**
Normal Cost	23.76%	20.42%	22.52%
Less **Member** Contributions	0.00%	4.00%	1.48%
Employer Normal Cost	23.76%	16.42%	21.04%
Unfunded Actuarial Accrued Liabilities (UAAL) (level percent-of-payroll amortization with layered bases)			42.76%
Total FY20 Computed Employer Contribution Rate			63.80%
Estimated Employer Contribution ($ in Millions)			$40.1

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.

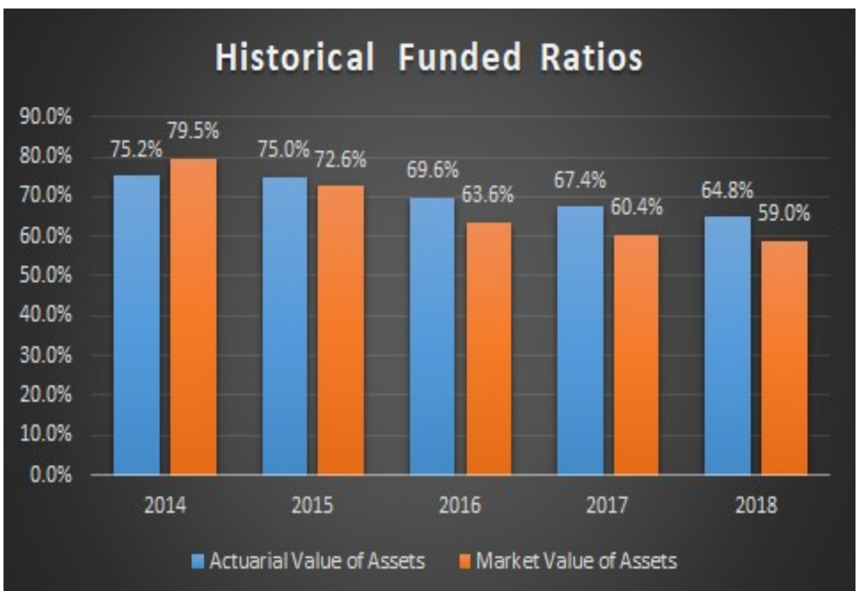
Sincerely,

Ronda Stegmann
Executive Director

cc: MOSERS Board of Trustees

MISSOURI STATE EMPLOYEES' RETIREMENT SYSTEM

- For the year ending June 30, 2018, rate of return on investments equaled 7.48% (market) and 5.16% (actuarial) vs. 7.5% assumed.
- In June 2018, the system's actuary completed a study of the system's economic assumptions. Lowered the assumed rate of return from 7.5 to 7.25 with two planned annual decreases of 0.15 until the rate reaches 6.95. Lowered general wage growth from 3.0 to 2.75.
- Modified the method of amortizing the UAAL from a closed 30 (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 to 21.77% for FY20 from 20.21%.
- 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 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 Ending 6/30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
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%
2014	$326,370,336	$326,370,336	100%

As of 6/30/18

Market Value: $8,034,508,424

Actuarial Value: $8,830,410,210

Liabilities: $13,612,763,961

Active Members: 47,806

Inactive Members: 80,212

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)

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

Social Security Coverage: Yes

COLA: Annual Max 5%, 80% of CPI

Assumed Rate of Return: 7.25

Salary: 2.75

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 26, 2018

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. This policy provides for an annual reduction of the plan's investment rate of return assumption by 15 basis points until reaching 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, 2018	FY20	7.25%	4.75%
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.

MOSERS SENSITIVITY ANALYSIS

Investment Return Assumption	6.25%	6.75%	7.25%	7.75%	8.25%
Total Employer Contribution (% of pay)	26.77%	24.22%	21.77%	19.42%	17.15%
Total Employer Contribution ($ in millions)	$548.3	$496.1	$445.9	$397.7	$351.3
Actuarial Value of Assets	$8,830.4	$8,830.4	$8,830.4	$8,830.4	$8,830.4
Actuarial Accrued Liability	$15,160.3	$14,352.2	$13,612.8	$12,934.6	$12,311.5
Funded Ratio	58.2%	61.5%	64.9%	68.3%	71.7%

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, 2018 annual actuarial valuation, the ongoing annual cost of the **MSEP 2011** (known as the "Employer Normal Cost") is 3.94% of pay, compared to the **pre-2011** annual cost of 9.03% of pay. Approximately 43% of the 47,806 MOSERS' active employees are MSEP 2011 members.

Actuarial Valuation Results as of 06/30/18	**Percents of Payroll**		
	MSEP & MSEP 2000	**MSEP 2011**	**Weighted Average**
Normal Cost	9.03%	7.94%	8.62%
Less **Member** Contributions	0.00%	4.00%	1.50%
Employer Normal Cost	9.03%	3.94%	7.12%
Unfunded Actuarial Accrued Liabilities (UAAL) (level percent-of-payroll amortization with layered bases)			14.65%
Total FY20 Computed Employer Contribution Rate			21.77%
Estimated Employer Contribution ($ in Millions)			$445.9

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.

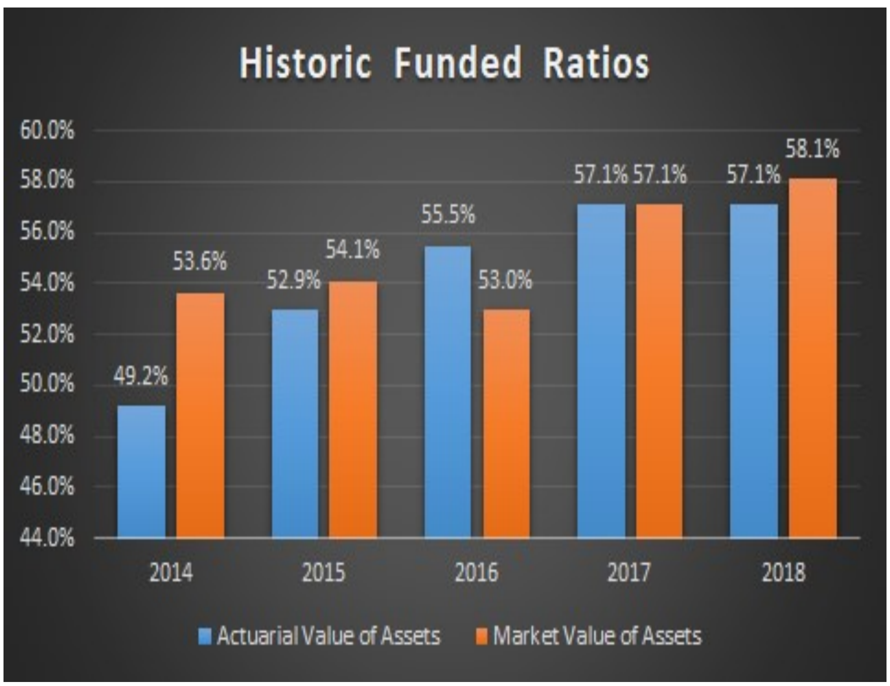
Sincerely,

Ronda Stegmann
Executive Director

cc: MOSERS Board of Trustees

MoDOT & HIGHWAY PATROL EMPLOYEES' RETIREMENT SYSTEM

- Rate of return on investments equaled 9.2% (Market) and 7.1% (Actuarial) vs. 7.75% assumed.
- 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 future economic conditions, we recommend that economic assumptions 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, increased vesting period and employee contributions for employees hired for the first time on or after 01/01/11. As of 06/30/18, 2,513 active 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 6/30/18, closed 6-year amortization period for unfunded retiree liabilities and closed 21-year amortization period for the remaining unfunded liabilities (for the plan year beginning 7/1/19).
- 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.



FY Ending June 30,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
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%
2014	$183,358,841	$183,358,841	100%

As of 6/30/18

Market Value: $2,314,530,148

Actuarial Value: $2,274,248,122

Liabilities: $3,981,838,941

Membership:

Active: 7,391 Inactive: 10,896

Normal Retirement Formula:

Year 2000 Plan: 1.7% of compensation times years of service plus 0.8% to age 62 (temp 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.

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

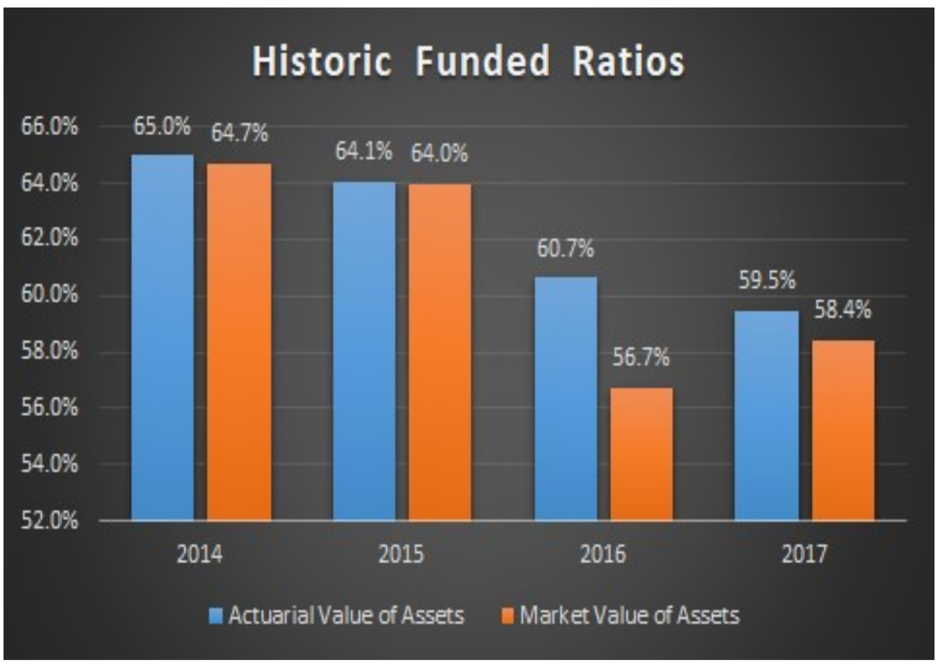
COLA: Annual Max 5%; 80% of CPI

Assumed rate of return: 7%

Salary: 3%

OVERLAND POLICE RETIREMENT FUND

- Rate of return on investments equaled 11.5% (Market) and 5.8% (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 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
2018	$1,091,236	N/A	N/A
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%
2013	$801,961	$268,988	34%

As of 4/1/17

Market Value: $12,565,232

Actuarial Value: $12,786,072

Liabilities: $21,502,451

Membership:

Active: 42 Inactive: 40

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 YOS

Social Security Coverage: Yes

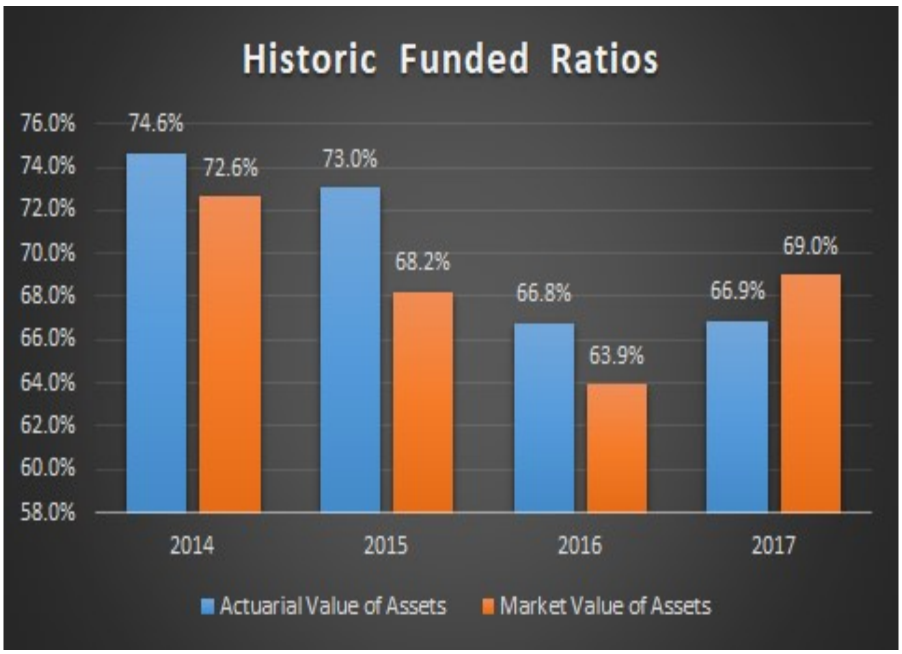
COLA: Annual Max 3%; 60% of CPI

Assumed Rate of Return: 7%

Salary: 3.5%

POPLAR BLUFF POLICE & FIRE PENSION PLAN

- Market rate of return on investments equaled 11.01% vs. 5% assumed.
- During the past plan year, the plan experienced an actuarial loss. The actuary writes "this loss was primarily due to contributions for the prior year being less than the 2017 actuarially determined contribution.
- 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."
- 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%.
- 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.



January 1,	RECOMMENDED CONTRIBUTION	ACTUAL CONTRIBUTION	PERCENT CONTRIBUTED
2018	$850,408	N/A	N/A
2017	$811,036	$253,225	31%
2016	$579,058	$330,864	57%
2015	$543,721	$235,832	43%
2014	$507,503	$233,861	46%
2013	$473,003	$244,411	52%

As of 1/1/18

Market Value: $13,175,067

Actuarial Value: $12,766,902

Liabilities: $19,086,866

Membership:

Active: 81 **Inactive**: 68

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

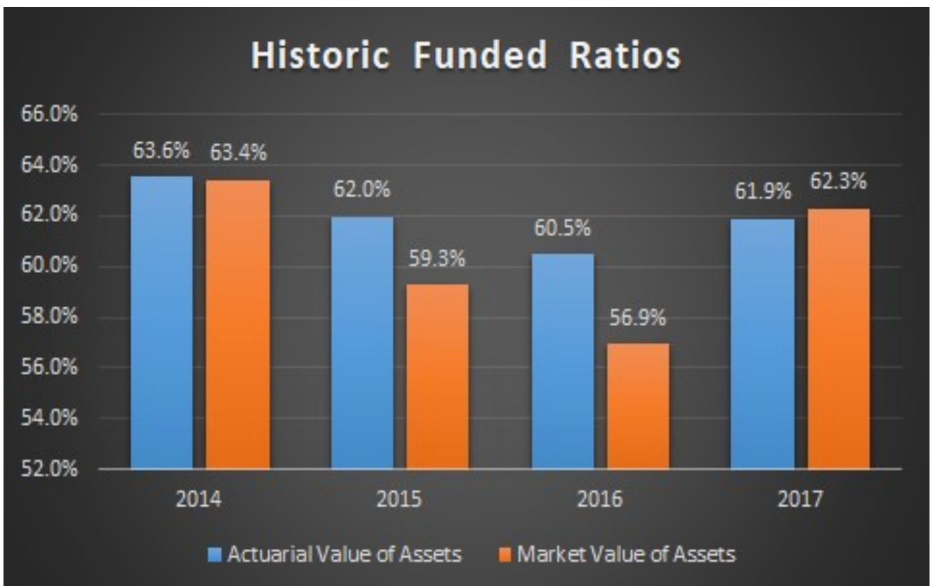
COLA: No COLA

Assumed rate of return: 5%

Salary: 3%

RAYTOWN POLICE OFFICERS' RETIREMENT FUND

- Rate of return on investments equaled 13.94% (market) and 6.3% (actuarial) vs. 7.5% assumed.
- Updated mortality tables to the most recent projection scale. The actuary writes "we plan on updating to the most recently available projection scale in all future valuations."
- 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
2018	$593,459	N/A	N/A
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%
2013	$660,842	$660,842	100%

* Contribution history taken from January 1, 2018 Valuation, Page 18, Ten-Year Schedule of Contributions.

As of 1/1/18

Market Value: $10,962,984

Actuarial Value: $10,884,568

Liabilities: $17,584,478

Membership:

Active: 25 **Inactive**: 61

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

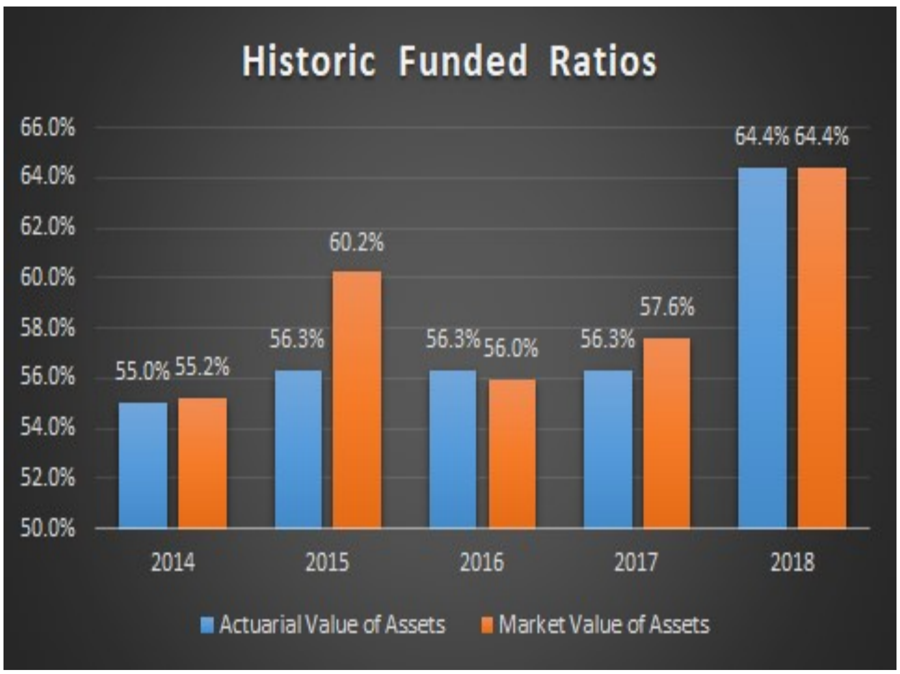
COLA: No COLA

Assumed Rate of Return: 7.5%

Salary: 4%

ROCK HILL UNIFORMED EMPLOYEES' PENSION PLAN

- For the year ended 3/31/18, 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 5/1/11.
- All active participants as well as new hires are members of LAGERS as of September 2007.
- The employer has not met the ADC since 2008. The City's CAFR notes that "As of March 31, 2018, the City did not have a formal contribution policy. 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 that the Plan is frozen and the number of active participants is declining."
- The City's FY 2018-2019 Budget indicates it is "anticipating turning the pension plan administration over to [LAGERS]. LAGERS will amortize the unfunded liability over a period of fifteen years, allowing the City lower annual contributions and provide stability to the pension plan."



Year Ending March 31,	RECOMMENDED CONTRIBUTION**	ACTUAL CONTRIBUTION**	PERCENT CONTRIBUTED
2018	$212,536	$150,000	71%
2017	$212,536	$150,000	71%
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 3/31/18 & 5/1/18

Market Value: $2,076,374*

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 3/31/18 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, 2018, 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.

From:	Jennifer Yackley
To:	Michael Ruff; stephesf@kirkwoodmo.org
Subject:	RE: Rock Hill Uniformed Employees" Pension Plan
Date:	Tuesday, November 13, 2018 12:31:36 PM

The city is still working on the hand off to LAGERS. We are in the process of reviewing draft amendments, provided by LAGERS, for the plan documents. The city does not have a specific date for the turnover of the pension fund to LAGERS.

From: Michael Ruff [mailto:mruff@senate.mo.gov]
Sent: Tuesday, November 13, 2018 12:26 PM
To: jyackley@rockhillmo.net; stephesf@kirkwoodmo.org
Subject: Rock Hill Uniformed Employees' Pension Plan

Dear Ms. Yackley and Ms. Stephens,
Each year, the Joint Committee on Public Employee Retirement (JCPER) 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 from Rock Hill's 3/31/18 CAFR, 5/1/18 actuarial valuation, and notes in the 2018-2019 budget to prepare this report. This report is designed to increase awareness of trends in plan funding and contribution levels.

I am attaching an information sheet relating to the Rock Hill Uniformed Employees' Pension Plan that will be presented to the JCPER at its fourth quarter meeting on Monday, December 3, 2018 at 10:30am in House Hearing Room 6. 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 Monday, November 26.

I noticed that the City is considering transferring the administration of the plan to LAGERS (and in August, LAGERS provided the JCPER a copy of the initial actuarial valuation.) Would you be able to comment on how the process of transferring the plan is proceeding?

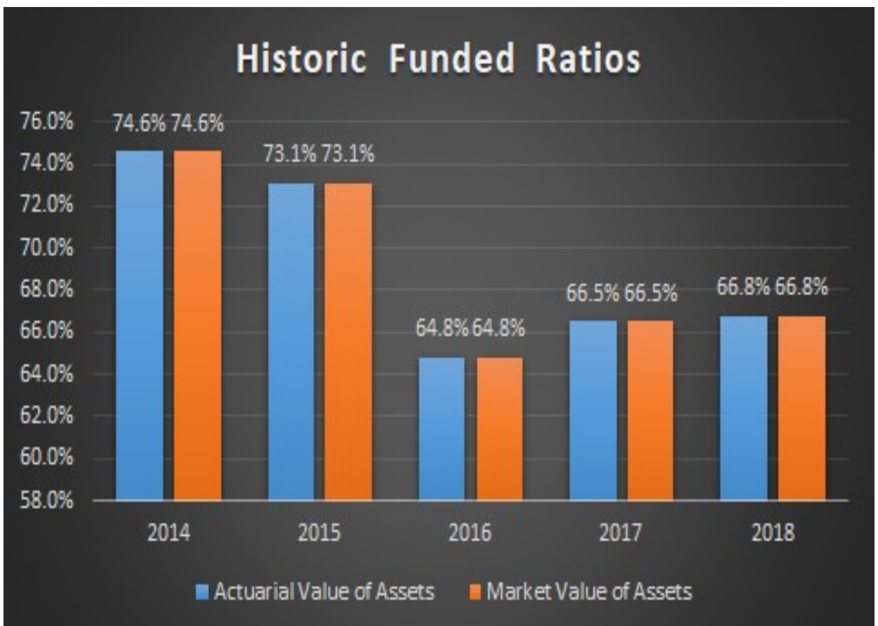
Thank you for your consideration and ongoing cooperation with the JCPER. Please do not hesitate to contact me if you have any questions or would like additional information.

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 7.1% versus 7% assumed.
- Completed an experience study in November 2017 for the period 4/1/09 to 3/3/17. Updated termination and retirement rate assumptions. Updated mortality tables to the most recent projection scale.
- The plan values assets at market value and does not smooth investment gains and losses.
- 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 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
2019	$385,272	N/A	N/A
2018	$362,295	$450,145	124%
2017	$439,494	$353,426	80%
2016	$358,679	$331,451	92%
2015	$331,814	$367,229	111%
2014	$364,363	$387,393	106%

As of 4/1/18

Market Value: $7,528,975

Actuarial Value: $7,528,975

Liabilities: $11,263,908

Membership:

Active: 37 **Inactive**: 48

Normal Retirement Formula:

50% of Indexed Earnings Base

2018 IEB = $56,112

Normal Retirement Eligibility:

Age 55 with 22 years of service

Social Security Coverage: No

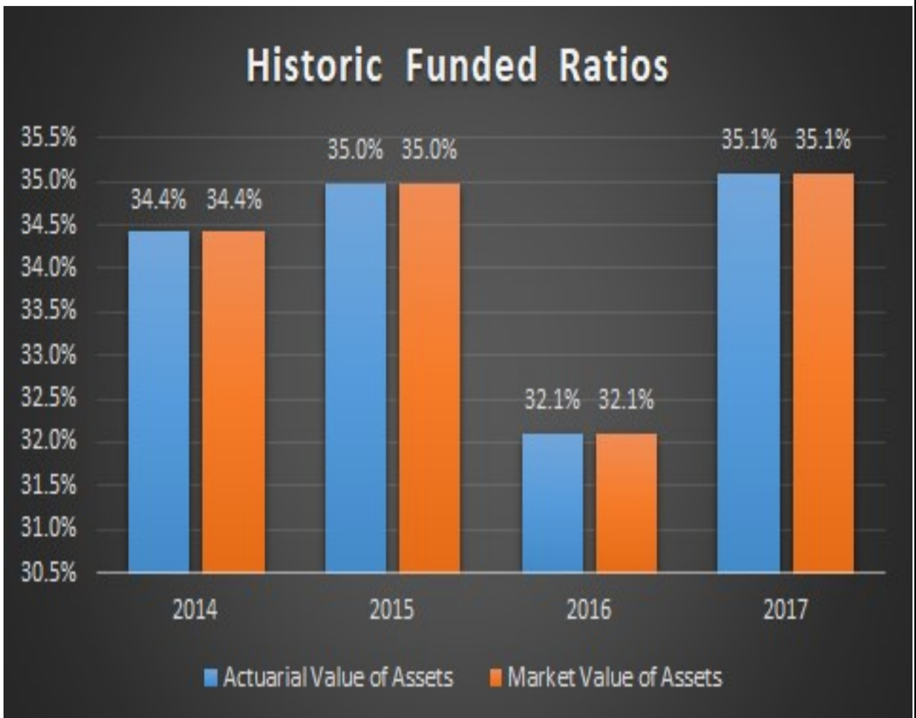
COLA: Annual max 3%

Assumed Rate of Return: 7%

Increases in IEB: 3%

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…"



Year 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	$394,889	$235,179	60%

As of 8/1/17

Market Value: $3,492,328

Actuarial Value: $3,492,328

Liabilities: $9,938,578

Membership:

Active: 27 **Inactive**: 44

Normal Retirement Formula:

2% of compensation times years of service. Maximum of 30 years.

Normal Retirement Eligibility:

Hired on/after 7/1/89: Age 55 with 22 years of service.

Social Security Coverage: Yes

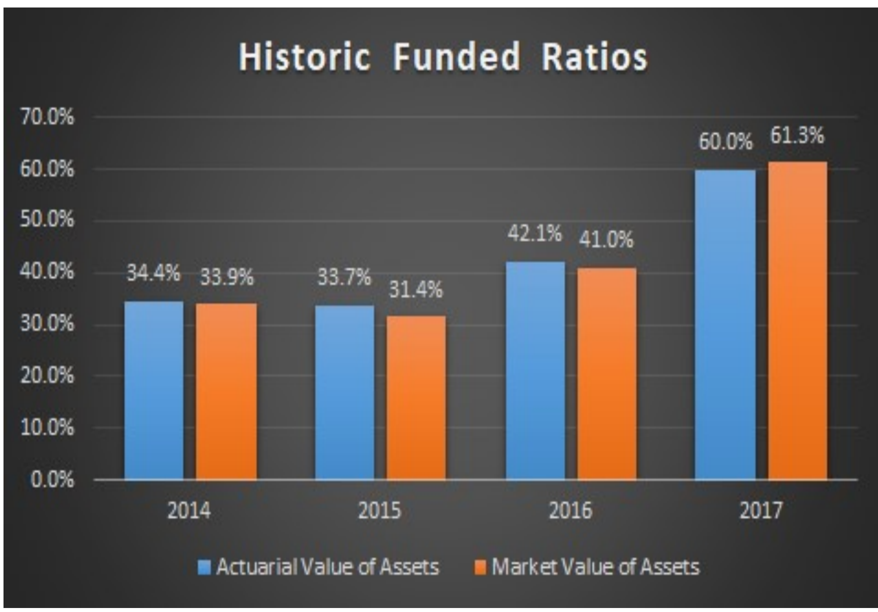
COLA: Annual max of 2%

Assumed Rate of Return: 6%

Salary: N/A

ST. LOUIS CITY FIREFIGHTERS' RETIREMENT PLAN

- Rate of return on investments equaled 13.11% (Market) and 7.53% (Actuarial) vs. 7.625% 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
2018	$8,022,799	N/A	N/A
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 10/1/17

Market Value: $61,266,961

Actuarial Value: $60,014,292

Liabilities: $100,013,786

Membership:

Active: 636 **Inactive**: 70

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. Max 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. CPI must be at least 1% to receive a COLA.

Assumed Rate of Return: 7.25

Salary: 2.75

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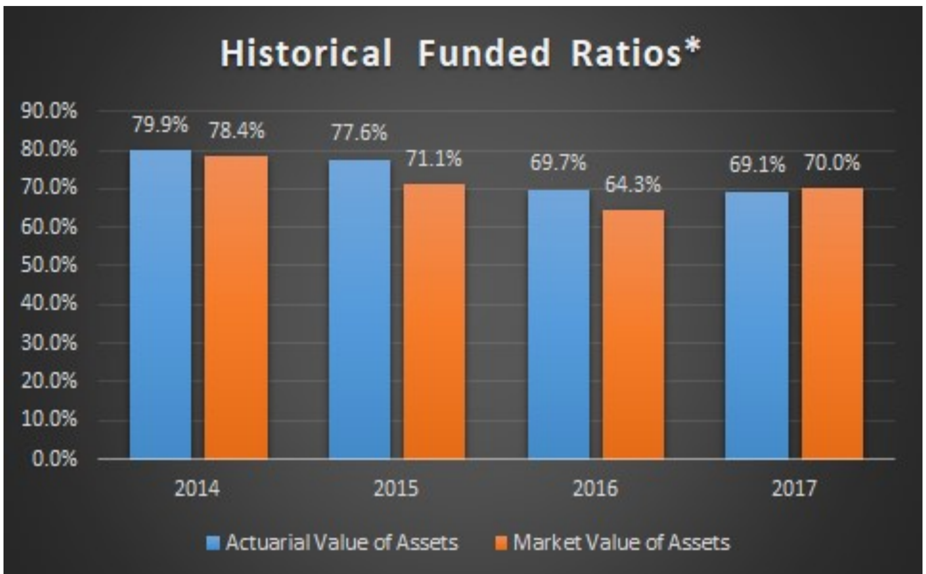
STATUS UPDATE: KANSAS CITY PUBLIC SCHOOL RETIREMENT SYSTEM

- For the year ending 12/31/17, net rate of return on investments equaled 16.8% (Market) and 6.3% (Actuarial) versus 7.75% assumed.
- In 2018, the General Assembly passed legislation (SB 892) to address the system's funding situation. SB 892 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. Requires the system to certify the employer contribution rate at least six months in advance. Beginning 1/1/19, requires the employers to transfer employer contributions at the end of each payroll period.
- 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; adjusted 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 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
2017	18,074	16,927	94%
2016	20,224	16,280	80%
2015	18,856	14,492	77%
2014	19,401	13,288	68%

*2017 market value funded ratio of 70.0% is rounded up from 69.95%, 1/1/18 actuarial valuation, pg 10.

**Contribution history from PSRS-KC Financial Statements, Years Ended December 31, 2017 and 2016, Page 26, Schedules of Employers' Contributions.

As of 1/1/18

Market Value: $685,801,998

Actuarial Value: $678,288,805

Liabilities: $980,436,626

Membership:

Active: 3,760 Inactive: 7,083*

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: 3.5

*2,449 inactives are terminated non-vested and will not receive a benefit.

105.669. Felony conviction, ineligible for benefits, when — employer to notify of offenses, when — list of offenses. — 1. Any participant of a plan who is convicted of a felony offense listed in subsection 3 of this section, which is committed in direct connection with or directly related to the participant's duties as an employee on or after August 28, 2014, shall not be eligible to receive any retirement benefits from the respective plan based on service rendered on or after August 28, 2014, except a participant may still request from the respective retirement system a refund of the participant's plan contributions, including interest credited to the participant's account.

2. The employer of any participant who is charged or convicted of a felony offense listed in subsection 3 of this section, which is committed in direct connection with or directly related to the participant's duties as an employee on or after August 28, 2014, shall notify the appropriate retirement system in which the offender was a participant and provide information in connection with such charge or conviction. The plans shall take all actions necessary to implement the provisions of this section.

3. A felony conviction based on any of the following offenses or a substantially similar offense provided under federal law shall result in the ineligibility of retirement benefits as provided in subsection 1 of this section:

(1) The offense of felony stealing under section 570.030 when such offense involved money, property, or services valued at five thousand dollars or more;

(2) The offense of felony receiving stolen property under section 570.080*, as it existed before January 1, 2017, when such offense involved money, property, or services valued at five thousand dollars or more;

(3) The offense of forgery under section 570.090;

(4) The offense of felony counterfeiting under section 570.103;

(5) The offense of bribery of a public servant under section 576.010; or

(6) The offense of acceding to corruption under section 576.020.

(L. 2014 H.B. 1217, A.L. 2017 S.B. 34 merged with S.B. 62)

*Section 570.080 was repealed by S.B. 491, 2014, effective 1-01-17.

https://www.columbiamissourian.com/news/local/former-callaway-county-collector-pleads-guilty-to-embezzling-over/article_a234f470-c02d-11e8-b6b1-2fc785f024f4.html

Former Callaway County Collector pleads guilty to embezzling over $300,000

BY VICTORIA CHEYNE Sep 24, 2018

Former Callaway County Collector Pamela Oestreich pleaded guilty in federal court Monday to embezzling more than $300,000 from taxpayers in Callaway County.

Oestreich waived her right to a grand jury and pleaded guilty before U.S. Magistrate Judge Willie Epps Jr. to one count of stealing from an organization that receives federal funds, according to a news release from the U.S. Western District Court of Missouri.

"On more than 100 occasions, this public official stole directly from the people she was elected to represent," U.S. Attorney for the Western District of Missouri Tim Garrison said in the news release. "She will be held accountable for violating the public trust and abusing her position."

Missouri State Auditor Nicole Galloway released an audit Monday of the collector's office, which found the funds were stolen between Jan. 1, 2016, and March 15, according to a news release from the auditor's office.

"To see taxpayer dollars abused in this way is deeply disappointing," Galloway said in the release. "My office worked with law enforcement and county officials to hold the former public official accountable for her actions."

State law requires county collectors' offices to be audited whenever they become vacant. Oestreich resigned March 15 after county officials were informed of suspicious bank activity, according to the auditor's report. A criminal investigation was opened immediately after.

Galloway previously requested that the county work to expedite the audit because of the circumstances, according to previous Missourian reporting.

At least $316,758 was misappropriated from the collector's office, according to the report. The report identified cash shortages of at least $244,782, as well as $71,976 in checks that Oestreich issued to herself.

Oestreich's annual settlements for the years ending Feb. 28, 2017 and 2018 were not complete and accurate, according to the report. The financial activities of the collector's office were not adequately reviewed by the Callaway County Clerk, the Callaway County Auditor or the county commission.

In October 2017, Oestreich improperly deleted a tax bill of more than $74,000 as a way to conceal stolen funds, according to the auditor's news release.

The report also found that "significant weaknesses" existed in Oestreich's accounting controls and procedures, which included failing to perform independent reviews of accounting and bank records.

Oestreich did not record property tax collections of $217,936 in her property tax records, according to the report. She improperly transferred $76,778 from the county's general account to a different account between January and March, according to the report. Her accounting records for both accounts were not always complete and accurate, according to the report.

The unrecorded property tax collections meant that over $217,000 was withheld from local schools, cities, and other taxing districts, according to the release.

The report recommended better checks and balances and improved controls over how cash is handled in the collector's office to detect and prevent improper activity in the future.

Under the terms of the plea agreement, Oestreich could face 41 to 51 months in federal prison, according to the Western District's release. Her sentence will also require her to pay back all the money she embezzled.

Supervisory Assistant U.S. Attorney Michael Oliver is prosecuting this case, which is ongoing. It is being investigated by the Callaway County Sheriff's Office and the FBI.

A sentencing hearing has not yet been scheduled.

Supervising editor is Tynan Stewart.

JCPER 4th Q 2018 036

MORE INFORMATION

State Auditor recommends accelerating audit of county collector's office

Victoria Cheyne

Fall 2018 public life reporter. I am a junior studying investigative reporting. Reach me at vrcbqb@mail.missouri.edu, or at (281) 636-8834.

104.621. Affirmative action plan for hiring money managers, brokers and investment counselors, required — report to joint committee on public employee retirement. — All retirement systems created in this chapter shall develop an affirmative action plan for the utilization of minority and women money managers, brokers, and investment counselors. Such retirement systems shall report their progress annually to the joint committee on public employee retirement.

(L. 1993 S.B. 126 § 1)

105.702. Minority and women money managers, brokers, and investment counselors, procurement action plan required — annual report. — All retirement plans defined under section 105.660 shall develop a procurement action plan for utilization of minority and women money managers, brokers, and investment counselors. Such retirement systems shall report their progress annually to the joint committee on public employee retirement and the governor's minority advocacy commission.

(L. 2014 H.B. 1882)

169.573. Plan for utilization of minority professionals, report. — All retirement systems created in this chapter shall develop an affirmative action plan for the utilization of minority and women money managers, brokers, and investment counselors. Such retirement systems shall report their progress annually to the joint committee on public employee retirement.

(L. 1994 S.B. 575 § 1)

Effective 5-26-94

GRS

Society of Actuaries Publishes New Mortality Tables for U.S. Public Pension Plans

On August 28, 2018, the Society of Actuaries (SOA) published a new set of mortality tables for U.S. public pension plans, the Pub-2010 Mortality Tables. The new tables are based on a mortality study of public pension plan participants in the U.S. Generally, the new Pub-2010 tables show longer life expectancies (i.e., lower mortality rates) compared to other recent mortality tables, such as the RP-2014 Mortality Tables.

In conjunction with issuing the new tables, the Retirement Plans Experience Committee (RPEC) of the SOA released an exposure draft report of the *Pub-2010 Public Retirement Plans Mortality Tables*. Comments are due by October 31, 2018. Further information related to the exposure draft and Pub-2010 tables is available here.

In addition, the SOA published its report, *U.S. Public Pension Plan Mortality Assumptions Compared to Pub-2010 Mortality Tables*. This report updates and supplements an earlier report published by the SOA in June 2018, *U.S. Public Pension Plan Mortality Assumptions*.

The August 2018 report compares post-retirement mortality assumptions used for funding purposes for state-based and large city pension plans to the Pub-2010 Mortality Tables. The June 2018 report had a similar comparison with the RP-2014 Mortality Tables. Annuity factors in the August report are shown for various ages in 2018 with fully generational mortality improvement using MP-2017. The Pub-2010 Mortality Tables include separate tables for general employees, safety employees and teachers.

Some key findings include:

- For all ages and job categories, Pub-2010 annuity factors exceed the comparable average annuity factor under current assumptions. For those age 75, the factors range from 0.9% greater for female safety employees and 6.3% greater for male teachers.
- For teachers, current mortality assumptions tend to result in larger annuity factors as compared with other job categories, which is consistent with Pub-2010 tables.
- For male safety employees, mortality assumptions tend to result in larger annuity factors than for general employees. For female safety employees, the assumptions tend to result in lower annuity factors than for general employees.
- Across all age and gender combinations, the Pub-2010 tables produce lower annuity factors for safety employees than for general employees (except for males age 55).

The analysis uses mortality assumptions from state-based and large-city public pension plans' actuarial reports available on the Public Plans Data website as of February 2018. In addition, the Appendix provides summaries of the mortality assumptions used in the study as well as annuity factor values for the Pub-2010 and RP-2006 mortality tables projected generationally with MP-2017 and average annuity factors for each job category.

David Kausch, Chief Actuary for GRS, serves as a member and former chairperson of the RPEC.

The August and June 2018 reports are available here.

Joint Committee on Public Employee Retirement
Quarterly Reports
2018 Third Quarter

Plan Name	Beg. Mkt Value	End Mkt Value	ROR 12 mos.	ROR 36 mos.	ROR 60 mos.	ROR for Inv	Price Inf. Assump..	Sal/Wage Assump.
Affton FPD Retirement Plan	$9,168,794	$9,330,755	7.6% (Net)	10.0% (Net)	7.6% (Net)	6.50%	2.75%	3.5%
Antonia FPD Pension Plan	$2,234,996	$2,278,338	3.33% (Net)	n/a% (Net)	n/a% (Net)	n/a%	n/a%	n/a%
Bi-state Dev Agency Division 788, A.T.U.	$139,213,548	$142,671,317	N/A% (Net)	N/A% (Net)	N/A% (Net)	7%	2.5%	N/A%
Bi-state Development Agency Local 2 I.B.E.W.	$5,422,772	$5,657,630	N/A% (Net)	N/A% (Net)	N/A% (Net)	7%	2.5%	N/A%
Bi-state Salaried Employees	$72,628,738	$74,452,907	N/A% (Net)	N/A% (Net)	N/A% (Net)	7%	2.5%	4.5%
Bothwell Regional Health Center Retirement Plan	$45,330,736	$46,126,683	7.3% (Net)	9.5% (Net)	6.3% (Net)	7.75%	2.9%	3.0%
Bridgeton Employees Retirement Plan	$28,282,752	$28,990,941	3.76% (Net)	6.19% (Net)	4.30% (Net)	7.50%	3.0%	4.0%
Carthage Policemen's & Firemen's Pension Plan	$7,313,107	$7,552,456	11.43% (Net)	9.35% (Net)	8.06% (Net)	7.00%	2.2%	3.5%
Cedar Hill Fire Protection District Length of Service Awards Program	$312,082	$0	N/A% (Gross)	N/A% (Gross)	N/A% (Gross)	4.75%	N/A%	N/A%
Clayton Non-uniformed Employee Pension Plan	$18,388,920	$19,229,974	7.98% (Net)	9.86% (Net)	8.58% (Net)	7%	2%	4%
Clayton Uniformed Employees Pension Plan	$45,271,274	$46,699,723	6.71% (Net)	10.80% (Net)	11.41% (Net)	7%	2%	3.5%
Columbia Police and Firemens' Retirement Plan	$134,117,651	$139,082,548	7.55% (Net)	8.28% (Net)	6.28% (Net)	7%	2.5%	3.25%
Community FPD Retirement Plan	$31,502,902	$32,261,425	5.88% (Net)	15.61% (Net)	7.83% (Net)	7.0%	2.5%	4.0%
County Employees Retirement Fund	$515,832,000	$533,585,000	9.39% (Gross)	9.66% (Gross)	7.62% (Gross)	7.5%	2.5%	2.5%
Creve Coeur Employees Retirement Plan	$25,729,821	$26,299,288	7.0% (Net)	10.0% (Net)	7.6% (Net)	7.0%	3.5%	4.0%
Creve Coeur FPD Retirement Plan	$10,963,504	$11,087,469	n/a% (Gross)	n/a% (Gross)	n/a% (Gross)	7%	3%	4%
Eureka FPD Retirement Plan	$12,364,475	$12,725,401	1% (Net)	1% (Net)	1% (Net)	7%	2.75%	4.5%
Fenton FPD Retirement Plan	$31,793,333	$31,849,801	8.28% (Net)	10.61% (Net)	7.58% (Net)	7.5%	2.5%	2%
Ferguson Pension Plan	$26,634,355	$27,702,661	8.76% (Gross)	9.50% (Gross)	8.18% (Gross)	7.5%	0%	3.25%
Firefighter's Retirement Plan of the City of St. Louis	$65,525,042	$76,846,843	9.8% (Gross)	11.0% (Gross)	0% (Gross)	7.25%	3.0%	3.0%

Plan Name	Beg. Mkt Value	End Mkt Value	ROR 12 mos.	ROR 36 mos.	ROR 60 mos.	ROR for Inv	Price Inf. Assump..	Sal/Wage Assump.
Florissant Valley FPD Retirement Plan	$30,161,699	$30,792,890	n/a% (Net)	n/a% (Net)	n/a% (Net)	6.5%	2.5%	see comme nts%
Glendale Pension Plan	$5,313,562	$5,350,828	6.06% (Gross)	9.06% (Gross)	N/A% (Gross)	7.50%	2.50%	3.75%
Hannibal Police & Fire Retirement Plan	$17,460,044	$18,248,994	10.6% (Gross)	10.2% (Gross)	8.3% (Gross)	7.0%	2.5%	3.5%
Hazelwood Retirement Plan	$41,214,677	$42,224,501	16.66% (Net)	16.49% (Net)	12.56% (Net)	7.5%	3%	4.5%
High Ridge Fire Protection District Pension Plan	$6,735,950	$6,884,186	7.0% (Net)	9.0% (Net)	6.5% (Net)	5.5%	2.5%	0%
Jackson County Employees Pension Plan	$288,840,775	$292,568,289	7.91% (Gross)	10.29% (Gross)	7.81% (Gross)	6.75%	2.5%	2.75% to 4.75%
Joplin Police & Fire Pension Plan	$41,255,693	$42,229,941	7.1% (Net)	9.4% (Net)	6.3% (Net)	6.75%	2.5%	2.5%
Kansas City Civilian Police Employees' Retirement System	$142,056,000	$144,695,000	5.03% (Net)	8.27% (Net)	6.33% (Net)	7.5%	3.0%	3.5%
Kansas City Employees' Retirement System	$1,146,103,942	$1,165,975,355	6.16% (Net)	8.67% (Net)	6.98% (Net)	7.5%	3.0%	3.75% to 5.0%
Kansas City Firefighter's Pension System	$545,342	$558,155	8.68% (Gross)	10.74% (Gross)	8.42% (Gross)	7.25%	2.5%	3.0% to 8.0%
Kansas City Police Retirement System	$873,000,000	$892,100,000	5.17% (Net)	8.41% (Net)	6.52% (Net)	7.5%	3.0%	3.5%
Kansas City Public School Retirement System	$666,795,124	$664,421,827	5.51% (Net)	9.74% (Net)	6.62% (Net)	7.75%	2.75%	3.50%
KC Area Transportation Authority Salaried Employees Pension Plan	$18,436,738	$19,098,270	8.71% (Gross)	10.15% (Gross)	7.96% (Gross)	7.00%	2.6%	4.00%
KC Trans. Auth. Union Employees Pension Plan	$49,626,526	$50,379,894	6.28% (Net)	6.01% (Net)	7.17% (Net)	7.00%	2.60%	4.25%
Ladue Non-uniformed Employees Retirement Plan	$5,037,441	$5,123,642	6.9% (Net)	9.4% (Net)	7.2% (Net)	7.0%	2.5%	4.5%
Ladue Police & Fire Pension Plan	$35,535,756	$36,209,082	6.9% (Net)	9.3% (Net)	7.2% (Net)	7.0%	2.5%	4.5%
LAGERS Staff Retirement Plan	$11,607,406	$11,773,113	4.65% (Net)	9.89% (Net)	7.10% (Net)	7.25%	2.5%	3.25%
Little River Drainage Dist Retirement Plan	$1,503,020	$1,537,360	3.44% (Gross)	4.39% (Gross)	3.33% (Gross)	5%	0%	3.5%
Local Government Employees Retirement System	$7,726,545,950	$7,717,965,746	9.85% (Net)	10.60% (Net)	8.10% (Net)	7.25%	2.5%	3.25%
Maplewood Police & Fire Retirement Fund	$13,766,311	$13,726,346	7.8% (Gross)	7.61% (Gross)	6.11% (Gross)	3.8%	2%	2.9%
Metro St. Louis Sewer Dist Employees Pension Plan	$277,213,717	$278,472,371	5.3% (Net)	7.1% (Net)	5.1% (Net)	6.9%	2.5%	4.25%
Metro West FPD Retirement Plan	$52,807,989	$55,165,473	12.30% (Net)	11.60% (Net)	7.90% (Net)	0%	0%	0%

Plan Name	Beg. Mkt Value	End Mkt Value	ROR 12 mos.	ROR 36 mos.	ROR 60 mos.	ROR for Inv	Price Inf. Assump..	Sal/Wage Assump.
Mid-County FPD Retirement Plan	$1,747,042	$1,549,493	1% (Net)	1% (Net)	1% (Net)	7%	2.75%	4.5%
Missouri Higher Education Loan Authority Pension Plan	$47,885,923	$49,504,409	7.43% (Net)	n/a% (Net)	n/a% (Net)	6.75%	2.25%	4.5%
Missouri State Employees Retirement System	$8,171,709,255	$7,996,674,588	2.9592% (Net)	5.4339% (Net)	4.3036% (Net)	7.25%	2.50%	3.0%
MoDOT & Highway Patrol Employees' Retirement System	$2,312,972,908	$2,357,669,264	8.89% (Net)	8.85% (Net)	8.74% (Net)	7%	2.25%	3.00%
North Kansas City Hospital Retirement Plan	$266,943,931	$272,468,916	7.70% (Net)	9.69% (Net)	7.83% (Net)	7.25%	2.3%	2.5%
North Kansas City Policemen's & Firemen's Retirement Fund	$55,434,088	$56,616,911	8.0% (Gross)	10.8% (Gross)	8.3% (Gross)	6.5%	4.0%	1.2%
Olivette Salaried Employees' Retirement Plan	$21,543,554	$21,820,596	7.7% (Net)	10.2% (Net)	8.2% (Net)	7.25%	2.75%	4.00%
Overland Non-uniform Pension Fund	$11,089,000	$11,426,000	8.72% (Net)	10.01% (Net)	7.25% (Net)	7%	2.5%	3.5%
Overland Police Retirement Fund	$12,866,000	$13,297,000	9.52% (Net)	11.01% (Net)	7.95% (Net)	7%	2.5%	3.5%
Pattonville-Bridgeton FPD Retirement Plan	$38,346,611	$39,283,566	6.52% (Net)	16.65% (Net)	9.03% (Net)	7.75%	2.5%	2.5%
Prosecuting Attorneys' Retirement System	$44,787,180	$46,016,364	6.32% (Net)	8.19% (Net)	5.97% (Net)	7.1%	2.5%	2.5%
Public Education Employees' Retirement System	$4,746,917,088	$4,826,581,449	8.3% (Net)	9.9% (Net)	8.4% (Net)	7.5%	2.25%	3.25%
Public School Retirement System	$39,052,396,498	$39,579,214,328	8.3% (Net)	9.9% (Net)	8.4% (Net)	7.5%	2.25%	2.75%
Raytown Policemen's Retirement Fund	$10,666,377	$10,904,327	8.40% (Gross)	9.97% (Gross)	7.49% (Gross)	7.5%	2.5%	N/A%
Richmond Heights Police & Fire Retirement Plan	$56,794,266	$57,840,893	7.00% (Net)	10.05% (Net)	7.61% (Net)	6.50%	2.50%	5.00%
Rock Community FPD Retirement Plan	$17,921,648	$18,304,688	6.7% (Net)	8.7% (Net)	8.1% (Net)	7.5%	2.5%	3.0%
Rock Hill Police & Firemen's Pension Plan	$2,039,249	$200,736	2.00% (Net)	2.00% (Net)	2.00% (Net)	6.4%	3.0%	6.5%
Saline Valley Fire Protection District Retirement Plan	$3,280,062	$3,384,069	6.0% (Gross)	6.2% (Gross)	6.6% (Gross)	7.0%	2.5%	2.5%
Sedalia Firemen's Retirement Fund	$7,150,231	$7,388,687	9.8% (Gross)	9.7% (Gross)	8.0% (Gross)	7.0%	2.0%	3.0%
Sedalia Police Retirement Fund	$3,693,828	$3,612,557	8.50% (Gross)	9.98% (Gross)	N/A% (Gross)	6%	None%	None%
Sheriff's Retirement System	$44,681,084	$45,886,771	7.261% (Gross)	8.785% (Gross)	7.849% (Gross)	7%	3.5%	1.5%
St. Joseph Policemen's Pension Fund	$36,290,425	$41,611,649	15.16% (Gross)	0% (Gross)	0% (Gross)	7.1%	2.5%	3%
St. Louis County Library Dist Empl Pension Plan	$49,541,566	$50,240,568	7.25% (Net)	9.02% (Net)	6.45% (Net)	7.0%	2.5%	3.5%
St. Louis Employees Retirement System	$819,193,037	$827,759,424	6.75% (Gross)	9.63% (Gross)	7.08% (Gross)	7.5%	2.5%	0.5%

Plan Name	Beg. Mkt Value	End Mkt Value	ROR 12 mos.	ROR 36 mos.	ROR 60 mos.	ROR for Inv	Price Inf. Assump..	Sal/Wage Assump.
St. Louis Firemen's Retirement System	$473,607,053	$478,258,274	5.83% (Gross)	10.04% (Gross)	7.63% (Gross)	7%	2.75%	3%
St. Louis Police Retirement System	$751,603,609	$787,140,240	6.8% (Net)	9.8% (Net)	6.9% (Net)	7.5%	2.5%	3%
St. Louis Public School Retirement System	$869,290,548	$860,033,991	7.3% (Net)	9.3% (Net)	7.0% (Net)	7.5%	2.75%	3.5% / 5.0%
University of Mo Retirement, Disability & Death Benefit Plan	$3,664,783,365	$3,693,731,321	6.9% (Net)	9.1% (Net)	6.6% (Net)	%	%	%
Valley Park FPD Retirement Plan	$6,343,442	$6,607,997	10.34% (Net)	10.20% (Net)	8.05% (Net)	7%	2%	4%
	$74,281,113,332	$74,934,961,499						