

## MEMORANDUM

To: Joint Committee on Pensions, Investments, and Benefits

From: Alan D. Conroy, Executive Director

Date: December 19, 2014

Subject: Actuarial Cost Studies

At the November meeting the Joint Committee requested information on the cost impact of various funding scenarios. In response we have attached the following cost studies:

- Impact of the Governor's FY 2015 allotment plan;
- Impact of reducing employer contributions for the State/School group by the Governor's FY 2015 allotment, reducing the previously certified FY 2016 statutory rate by 1% and keeping the cap on employer contribution increases going forward;
- Impact of reducing employer contributions for the State/School group by the Governor's FY 2015 allotment, reducing the previously certified FY 2016 statutory rate by 1%, freezing the rate in FY 2017 at the new FY 2016 rate, and keeping the cap on employer contribution increases going forward;
- Impact of lower assumed rate of return including;
  - Investment returns of 7% over the next 10 years and 8% thereafter; and
  - Investment returns of 7.5% for a 30-year period;
- Impact of eliminating the additional transfer of funds from the Expanded Lottery Act Revenues Fund (ELARF).





# Cavanaugh Macdonald

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December 18, 2014

Mr. Alan Conroy  
Executive Director  
Kansas Public Employees Retirement System  
611 S. Kansas Ave., Suite 100  
Topeka, KS 66603-3803

**Re: Reduction in Employer Contribution Rate for FY 2015**

Dear Alan:

Under current law, the employer contribution rate for KPERS is not necessarily the full actuarial required contribution (ARC). Based on legislation passed in 1993, the employer contribution rate certified by the KPERS Board may not increase by more than the statutory cap. The current statutory cap is 0.90% for fiscal year 2014, 1.0% for fiscal year 2015, 1.1% for fiscal year 2016 and 1.2% for fiscal year 2017 and later. The statutory contribution rate for the Local group has been equal to the actuarial required contribution in the last two actuarial valuations. However, the statutory employer contribution rate for the State/School group is lower than the actuarial required contribution rate. The following table shows the actuarial required contribution and the statutory contribution rate for the State/School group in the last three valuations.

Valuation Date	Fiscal Year	Employer Contribution Rates	
		Actuarial	Statutory
12/31/2013	2017	14.85%	13.57%
12/31/2012	2016	14.95%	12.37%
12/31/2011	2015	14.34%	11.27%

There is currently a state budget reduction plan that includes a reduction in the State/School employer contribution rate from the current statutory rate of 11.27% to 8.65% for the last half of fiscal year 2015. Such action will lower the contributions to the State/School group by about \$58 million, but result in higher contributions in subsequent years. This cost study quantifies the impact of the proposed reduction in FY 2015 contributions on contributions in later years and on the long term funding of the State/School group.

3906 Raynor Pkwy, Suite 106, Bellevue, NE 68123

Phone (402) 905-4461 • Fax (402) 905-4464

[www.CavMacConsulting.com](http://www.CavMacConsulting.com)

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### **Cost Impact**

We used the projection model prepared in conjunction with the December 31, 2013 actuarial valuation to measure the cost impact of the reduction in the employer contributions for the State/School group. Exhibit A shows the estimated State/School employer contribution rates and the corresponding dollar amounts of employer contributions under both the current statutory contribution rate and the proposed reduction to 8.65% for the last half of fiscal year 2015. Reducing the employer contributions in fiscal year 2015 has a very small impact on the funded ratio and the amount of the unfunded actuarial liability, but results in higher contributions in later years. The total employer contributions through FY 2036 under the current statutory contribution rates are \$15,417.41 million. Employer contributions over the same period if the statutory contribution rate for the last half of fiscal year 2015 is reduced to 8.65% are \$15,494.13 million, an increase of \$76.72 million.

Please note that the dollar amounts of employer contributions shown in the exhibits are future dollar amounts, calculated using the estimated employer contribution rate and projected payroll in future years. Due to the length of the projection period, the future payroll amounts grow significantly and the resulting contributions in nominal dollars in those years can appear very large.

The projections used in this cost study assume that all actuarial assumptions, including the 8% investment return assumption, are met each year in the future. The cost projections are sensitive to the assumptions used, particularly the investment return assumption. To the extent the 8% investment return assumption is not met in the future, the cost projections in these studies are expected to change. Further analysis can be provided upon request if it is deemed to be necessary or helpful.

### **Disclaimers, Caveats, and Limitations**

The numerical charts that comprise this study are based primarily upon the December 31, 2013 valuation results, the actuarial assumptions used in that valuation (other than as noted elsewhere in this letter), and the projection model prepared by the System's actuary, Cavanaugh Macdonald Consulting, LLC. Significant items are noted below:

- The investment return in all future years is assumed to be 8% on a market value basis, unless otherwise indicated.
- All demographic assumptions regarding mortality, disability, retirement, salary increases, and termination of employment are assumed to hold true in the future. Please note that the actuarial assumption assumes that mortality will improve in the future (i.e. people will live longer).
- The number of active members covered by KPERS in the future is assumed to remain level (neither growth nor decline in the active membership count). As active members leave covered employment, they are assumed to be replaced by new employees who have a similar demographic profile as recent new hires.
- The funding methods, including the entry age normal cost method, the asset smoothing method, and the amortization method and period, remain unchanged.
- For the current scenario, projections reflect the statutory caps, i.e. 0.9% in FY 2014, 1.0% in FY 2015, 1.1% in FY 2016 and an ultimate cap of 1.2% in FY 2017 and beyond.
- We relied upon the membership data provided by KPERS for the actuarial valuation. The numerical results depend on the integrity of this information. If there are material inaccuracies in the data, the results presented herein may be different and the projections may need to be revised.



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Models are designed to identify anticipated trends and to compare various scenarios rather than predicting some future state of events. The projections are based on the System's estimated financial status on December 31, 2013, and project future events using one set of assumptions out of a range of many possibilities. A different set of assumptions would lead to different results. The projections do not predict the System's financial condition or its ability to pay benefits in the future and do not provide any guarantee of future financial soundness of the System. Over time, a defined benefit plan's total cost will depend on a number of factors, including the amount of benefits paid, the number of people paid benefits, the duration of the benefit payments, plan expenses, and the amount of earnings on assets invested to pay benefits. These amounts and other variables are uncertain and unknowable at the time the projections were prepared. Because not all of the assumptions will unfold exactly as expected, actual results will differ from the projections. To the extent that actual experience deviates significantly from the assumptions, results could be significantly better or significantly worse than indicated in this study.

We are available to answer any questions on the material contained in this study or to provide explanations or further details upon request. We, Patrice A. Beckham F.S.A. and Brent A. Banister, F.S.A., are consulting actuaries with Cavanaugh Macdonald Consulting, LLC. We are also members of the American Academy of Actuaries and Fellows of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

If you have questions or need additional analysis, please let us know.

Sincerely,

Handwritten signature of Patrice Beckham in cursive script.

Patrice A. Beckham, FSA, FCA, EA, MAAA  
Principal and Consulting Actuary

Handwritten signature of Brent A. Banister in cursive script.

Brent A. Banister, FSA, FCA, EA, MAAA, PhD  
Chief Pension Actuary





## Exhibit A

### Current Plan vs. Reduction in FY 15 Contribution Rate State/School Group

(1) Fiscal Year	(2) Total Payroll	(3) <u>Employer Contribution Rate</u>		(5) <u>Employer Contribution Amount (\$M)</u>		
		(4) Current	(4) Reduced FY15	(6) Current	(6) Reduced FY15	(7) Difference
2015	\$ 4,440.00	11.27%	11.27% / 8.65%	\$ 500.39	\$ 442.22	\$ (58.16)
2016	4,554.81	12.37% *	12.37% *	603.09	603.09	-
2017	4,663.16	13.57% *	13.57% *	673.35	673.35	-
2018	4,784.85	14.77% *	14.77% *	748.20	748.20	-
2019	4,918.20	14.83% *	14.93% *	772.01	776.93	4.92
2020	5,061.65	14.51% *	14.63% *	777.87	783.94	6.07
2021	5,215.15	14.19% *	14.32% *	784.31	791.09	6.78
2022	5,378.89	14.09% *	14.23% *	802.99	810.52	7.53
2023	5,552.28	13.96% *	14.11% *	826.85	835.17	8.33
2024	5,734.26	13.85% *	14.00% *	846.61	855.21	8.60
2025	5,925.05	13.72% *	13.87% *	866.70	875.59	8.89
2026	6,124.89	13.58%	13.73%	831.84	841.02	9.19
2027	6,334.01	13.41%	13.56%	849.37	858.87	9.50
2028	6,553.23	13.21%	13.37%	865.54	876.03	10.49
2029	6,782.71	12.98%	13.14%	880.10	890.95	10.85
2030	7,022.28	12.85%	13.01%	902.70	913.94	11.24
2031	7,271.88	12.74%	12.90%	926.12	937.76	11.64
2032	7,532.39	12.61%	12.77%	949.67	961.72	12.05
2033	7,804.13	4.97%	5.02%	387.51	391.41	3.90
2034	8,087.28	3.67%	3.71%	297.12	300.35	3.23
2035	8,382.76	2.36%	2.38%	197.81	199.49	1.68
2036	8,690.60	1.46%	1.46%	127.24	127.24	-

\* Indicates additional contributions from ELARF are added to this contribution rate to get the total contribution amount shown.

Total            \$    15,417.41    \$    15,494.13    \$    76.72

This exhibit is an attachment to a letter that contains important information and explanations regarding the numbers shown. Therefore, the exhibit should only be considered with the accompanying letter from Cavanaugh Macdonald dated December 18, 2014.

All assumptions, including the 8% investment return, are assumed to be met each year in the future.

12/18/2014

# Exhibit B



## Kansas Public Employee Retirement System Comparison of State/School Group Funded Status Measures Current Plan vs. Reduction in FY 15 Contribution Rate (Dollar amounts in millions)

Valuation Date	Current Plan				Reduction in FY15 Contribution Rate			
	Actuarial Liability	Actuarial Assets	Unfunded Actuarial Liability	Funded Ratio	Actuarial Liability	Actuarial Assets	Unfunded Actuarial Liability	Funded Ratio
12/31/2013	\$ 17,078.13	\$ 9,726.42	\$ 7,351.70	57.0%	\$ 17,078.13	\$ 9,726.42	\$ 7,351.70	57.0%
12/31/2014	17,783.41	10,473.40	7,310.01	58.9%	17,783.41	10,473.40	7,310.01	58.9%
12/31/2015	18,462.18	11,200.48	7,261.70	60.7%	18,462.18	11,139.16	7,323.02	60.3%
12/31/2016	19,111.31	12,105.39	7,005.92	63.3%	19,111.31	12,039.17	7,072.14	63.0%
12/31/2017	19,735.84	12,998.50	6,737.34	65.9%	19,735.84	12,926.98	6,808.87	65.5%
12/31/2018	20,337.87	13,764.98	6,572.90	67.7%	20,337.87	13,690.25	6,647.62	67.3%
12/31/2019	20,937.13	14,561.09	6,376.03	69.5%	20,937.13	14,486.09	6,451.03	69.2%
12/31/2020	21,528.52	15,374.70	6,153.82	71.4%	21,528.52	15,300.37	6,228.15	71.1%
12/31/2021	22,114.60	16,216.53	5,898.07	73.3%	22,114.60	16,143.68	5,970.92	73.0%
12/31/2022	22,701.02	17,100.20	5,600.82	75.3%	22,701.02	17,029.76	5,671.26	75.0%
12/31/2023	23,288.73	18,036.30	5,252.43	77.4%	23,288.73	17,969.02	5,319.71	77.2%
12/31/2024	23,881.04	19,026.87	4,854.17	79.7%	23,881.04	18,963.29	4,917.75	79.4%
12/31/2025	24,478.87	20,076.84	4,402.03	82.0%	24,478.87	20,017.56	4,461.31	81.8%
12/31/2026	25,085.06	21,134.99	3,950.07	84.3%	25,085.06	21,080.67	4,004.39	84.0%
12/31/2027	25,704.59	22,260.27	3,444.32	86.6%	25,704.59	22,211.99	3,492.61	86.4%
12/31/2028	26,339.22	23,456.75	2,882.48	89.1%	26,339.22	23,415.68	2,923.54	88.9%
12/31/2029	26,991.85	24,734.81	2,257.04	91.6%	26,991.85	24,701.93	2,289.92	91.5%
12/31/2030	27,678.56	26,106.63	1,571.93	94.3%	27,678.56	26,083.00	1,595.56	94.2%
12/31/2031	28,393.88	27,582.23	811.65	97.1%	28,393.88	27,569.01	824.87	97.1%
12/31/2032	29,139.65	28,870.28	269.37	99.1%	29,139.65	28,864.38	275.28	99.1%
12/31/2033	29,921.64	29,889.54	32.10	99.9%	29,921.64	29,886.87	34.76	99.9%
12/31/2034	30,744.24	30,864.34	(120.10)	100.4%	30,744.24	30,864.03	(119.79)	100.4%

This exhibit is an attachment to a letter that contains important information and explanations regarding the numbers shown. Therefore, the exhibit should only be considered with the accompanying letter from Cavanaugh Macdonald dated December 18, 2014. All assumptions, including the 8% investment return, are assumed to be met each year in the future.

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