



# Cavanaugh Macdonald

CONSULTING, LLC

*The experience and dedication you deserve*

January 27, 2015

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

**Re: Cost Study for House Bill 2095**

Dear Alan:

At your request, we have prepared a cost study to determine the impact of the following provisions of House Bill 2095 (HB 2095) on the State/School group of KPERS:

- (1) Net proceeds of \$1.5 billion of revenue bonds issued by the state of Kansas are assumed to be deposited into the KPERS trust fund.
- (2) The employer contribution rate for fiscal year 2017 is reduced by the amount of the debt service payment for the bonds in that year.
- (3) The ELARF funds are not added to the trust in addition to the regular KPERS contribution.

**Background**

Under current law, the employer contribution rate for KPERS is not necessarily the full actuarial required contribution (ARC) rate. 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 rate 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.

3906 Raynor Pkwy, Suite 106, Bellevue, NE 68123

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

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

Offices in Englewood, CO • Kennesaw, GA • Bellevue, NE



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 KPERS 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. The lower employer contribution rate for the last half of fiscal year 2015 is reflected under the “alternate” scenario in this cost study.

HB 2095 provides for revenue bonds to be issued by the Kansas Development Finance Authority to provide a deposit to KPERS of a total amount not to exceed \$1,500,000 plus all amounts required to pay the costs of issuance of the bonds. The exact amount of the net bond proceeds is not known at this point in time. For purposes of our analysis, we assumed the net proceeds would be the maximum amount of \$1,500,000. HB 2095 provides that the debt service payments on the bonds will be the responsibility of the state and will not constitute an obligation of KPERS. Consequently, the debt service payments are not directly reflected in the cost analysis attached to this letter. Anyone reviewing Exhibits A and B should note that the repayment cost of the bonds is not included. Furthermore, for modeling purposes, the bond proceeds are assumed to be deposited into the KPERS trust on December 31, 2015 as you specified. As more detailed information becomes available, our cost study may need to be revised to more accurately reflect the actual issuance of the bonds.

House Bill 2095 also modifies the statutory employer contribution rate for fiscal year 2017 by providing that the contribution rate be reduced by the amount of the debt service payment for the bonds issued. Based on information provided by KDFA, the debt service payment was assumed to be \$90.3 million for fiscal year 2017. That dollar amount was converted to a percentage of payroll using the estimated payroll for FY 2017 of \$4,663.16 million. The prior certified employer contribution rate of 13.57% was then reduced by the estimated debt service payment as a rate of pay, or 1.94%, to arrive at the employer contribution rate of 11.63% for fiscal year 2017. The actual debt service payments may vary depending on a number of factors including the bond rating assigned by the rating agencies. To the extent the actual debt service payments are higher than the estimate used in this study, the reduction to the KPERS employer contribution rate for FY 2017 will be larger, resulting in higher contribution rates in subsequent years.

Finally, legislation passed in the 2012 session provided for additional contributions by the State to fund the unfunded actuarial liability for the State/School group until the funded ratio was at least 80%. The additional contribution stream was to come from the Expanded Lottery Act Revenue Fund (ELARF) in the amount of 50% of the money credited to the ELARF, after a reduction of \$10.5 million. Using the 2010 valuation to develop projections of the funded ratio at the time the bill was enacted, the additional ELARF contributions were expected to be required from fiscal year 2014 through fiscal year 2026. However, based on more recent projections of the funded ratio, ELARF contributions were assumed to be paid in fiscal years 2015 through 2025. However, for FY 2015 and FY 2016, ELARF funds were appropriated for employer contributions otherwise funded by the State General Fund, rather than as additional payments to



the unfunded actuarial liability. Therefore, for purposes of this cost study, the additional contributions from ELARF are assumed to be eliminated under the alternate scenario.

### **Cost Impact**

As noted above, several adjustments to contributions for FY 2015 through FY 2017 are reflected in this cost study. The employer contribution rate was assumed to be 8.65% for the last half of fiscal year 2015, returning to the previously certified rate of 12.37% for fiscal year 2016. The bond proceeds of \$1.5 billion were assumed to be deposited on December 31, 2015 and reflected in that actuarial valuation (which sets the employer contribution rate for fiscal year 2019). As HB 2095 directs, the employer contribution rate for fiscal year 2017 was reduced by 1.94%, the estimated amount of the debt service payment, as a percent of payroll. The resulting employer contribution rate for FY 2017 is projected to be 11.63%. The determination of the employer contribution rate for fiscal year 2018 and beyond reflects the statutory cap of 1.2% above the prior year's employer contribution rate.

We used the projection model prepared in conjunction with the December 31, 2013 actuarial valuation to estimate the long term cost impact of the current proposal. The results, which reflect the reduced contribution rate of 8.65% for the last half of fiscal year 2015, the previously certified statutory contribution rate of 12.37% for fiscal year 2016, the reduced contribution rate of 11.63% for fiscal year 2017, the deposit of \$1.5 billion in bond proceeds on December 31, 2015, and the elimination of the additional contributions from the ELARF fund, are compared to the baseline projections under current law. Exhibit A shows the estimated employer contribution rate and the corresponding dollar amounts of employer contributions for the current provisions and the alternate provisions per HB 2095. The alternate funding proposal results in lower contributions through 2036, with a total decrease in contributions over the entire period of \$2.8 billion.

Exhibit B provides a comparison of the key valuation results such as unfunded actuarial liability and funded ratio, under the current provisions and HB 2095. As that exhibit shows, the funded ratio increases from 60.7% to 68.8% in the December 31, 2015 valuation due to the assumed receipt of the bond proceeds of \$1.5 billion. The funded ratio under the provisions proposed by HB 2095 remain above those under the current scenario for much of the period studied. Because the amortization period for the unfunded actuarial liability remains unchanged, the bond proceeds serve to reduce employer contributions over the remainder of the period, and by the 2033 valuation, the funded ratios under both scenarios are comparable.

Please note that the cost analysis provided in this letter reflects only the impact of the bond proceeds on KPERS' funding. As mentioned earlier, under HB 2095 the debt service payments are to be paid from a source other than KPERS contributions. As a result, this additional "cost" of HB 2095 has not been taken into account in the analysis shown in Exhibits A and B. Only the impact of the bill on KPERS' funding is shown in our exhibits.

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 present value of the contribution difference, using KPERS' 8% assumed rate of return, is approximately the scheduled amount of the bond proceeds of \$1.5 billion. In other words, on a present value basis, the two scenarios require essentially the same amount of contributions to reach the same funded status at the same future point in time, just as would



be expected. However, when expressed as nominal dollars, the alternate approach has a lower cost because the bond proceeds allow for lower employer contribution rates in the future.

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.

The provision of this actuarial analysis is made solely for the purpose of comparing results of different financing scenarios based on investment return assumptions supplied by KPERS. The results are not intended to, and should not be interpreted as, making any recommendation or suggestion as to the advisability of any particular financing arrangement. The provision of this analysis is not considered a municipal advisory activity, nor does Cavanaugh Macdonald Consulting, LLC hold itself out as a municipal advisor as a result.

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

The numerical tables that comprises this cost study are based primarily upon the December 31, 2013 valuation results, the actuarial assumptions used in that valuation (unless otherwise 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.
- All projections reflect the current statutory caps of 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, except where otherwise noted.
- 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.

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.



Mr. Alan Conroy  
January 27, 2015  
Page 5

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,

A handwritten signature in black ink that reads 'Patrice Beckham' in a cursive script.

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

A handwritten signature in black ink that reads 'Brent A. Banister' in a cursive script.

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



## Exhibit A

### Current Provisions vs. House Bill 2095 (Including 8.65% for Last Half of FY15 and No Additional Funding from Expanded Lottery Act Revenue Fund (ELARF)) KPERs State/School Group

(1)	(2)	(3) Employer Contribution Rate		(5)	(6)	(7)	(8)	(9)
Fiscal Year	Total Payroll	Current	HB 2095	Employer Contribution Amount (\$M)				
				Current				
				Payroll Based	ELARF	Total	HB 2095	Difference
2015	\$ 4,440.00	11.27%	11.27%/8.65%	\$ 500.39	\$ -	\$ 500.39	\$ 442.22	\$ (58.16)
2016	4,554.81	12.37% *	12.37%	563.43	39.67	603.09	563.43	(39.67)
2017	4,663.16	13.57% *	11.63%	632.79	40.56	673.35	542.33	(131.03)
2018	4,784.85	14.77% *	12.83%	706.72	41.48	748.20	613.90	(134.31)
2019	4,918.20	14.83% *	12.18%	729.60	42.41	772.01	599.27	(172.75)
2020	5,061.65	14.51% *	11.75%	734.50	43.37	777.87	594.80	(183.07)
2021	5,215.15	14.19% *	11.40%	739.97	44.34	784.31	594.47	(189.84)
2022	5,378.89	14.09% *	11.30%	757.66	45.33	802.99	607.59	(195.40)
2023	5,552.28	13.96% *	11.23%	775.25	51.59	826.85	623.68	(203.17)
2024	5,734.26	13.85% *	11.19%	793.98	52.63	846.61	641.45	(205.16)
2025	5,925.05	13.72% *	11.14%	813.02	53.68	866.70	660.16	(206.54)
2026	6,124.89	13.58%	11.11%	831.84	-	831.84	680.55	(151.28)
2027	6,334.01	13.41%	11.07%	849.37	-	849.37	701.16	(148.22)
2028	6,553.23	13.21%	11.04%	865.54	-	865.54	723.34	(142.21)
2029	6,782.71	12.98%	11.00%	880.10	-	880.10	745.80	(134.30)
2030	7,022.28	12.85%	10.94%	902.70	-	902.70	768.58	(134.13)
2031	7,271.88	12.74%	10.90%	926.12	-	926.12	792.32	(133.80)
2032	7,532.39	12.61%	10.83%	949.67	-	949.67	815.59	(134.08)
2033	7,804.13	4.97%	4.38%	387.51	-	387.51	341.46	(46.04)
2034	8,087.28	3.67%	3.29%	297.12	-	297.12	266.38	(30.73)
2035	8,382.76	2.36%	2.18%	197.81	-	197.81	182.73	(15.09)
2036	8,690.60	1.46%	1.42%	127.24	-	127.24	123.77	(3.48)
2037	9,010.83	1.08%	1.10%	97.34	-	97.34	99.15	1.80

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

\$ 15,059.70	\$ 455.06	\$ 15,514.75	\$ 12,724.11	\$ (2,790.64)
--------------	-----------	--------------	--------------	---------------

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 January 27, 2015.

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

1/27/2015



## Exhibit B

### Current Provisions vs. House Bill 2095 (Including 8.65% for Last Half of FY15 and No Additional Funding from Expanded Lottery Act Revenue Fund (ELARF))

(Dollar amounts in millions)

Valuation Date	Current Provisions				HB 2095 Provisions			
	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	12,698.01	5,764.17	68.8%
12/31/2016	19,111.31	12,105.39	7,005.92	63.3%	19,111.31	13,638.07	5,473.24	71.4%
12/31/2017	19,735.84	12,998.50	6,737.34	65.9%	19,735.84	14,516.46	5,219.38	73.6%
12/31/2018	20,337.87	13,764.98	6,572.90	67.7%	20,337.87	15,245.62	5,092.25	75.0%
12/31/2019	20,937.13	14,561.09	6,376.03	69.5%	20,937.13	15,975.91	4,961.22	76.3%
12/31/2020	21,528.52	15,374.70	6,153.82	71.4%	21,528.52	16,709.51	4,819.00	77.6%
12/31/2021	22,114.60	16,216.53	5,898.07	73.3%	22,114.60	17,458.54	4,656.06	78.9%
12/31/2022	22,701.02	17,100.20	5,600.82	75.3%	22,701.02	18,237.76	4,463.25	80.3%
12/31/2023	23,288.73	18,036.30	5,252.43	77.4%	23,288.73	19,053.26	4,235.47	81.8%
12/31/2024	23,881.04	19,026.87	4,854.17	79.7%	23,881.04	19,911.83	3,969.21	83.4%
12/31/2025	24,478.87	20,076.84	4,402.03	82.0%	24,478.87	20,818.77	3,660.10	85.0%
12/31/2026	25,085.06	21,134.99	3,950.07	84.3%	25,085.06	21,780.64	3,304.42	86.8%
12/31/2027	25,704.59	22,260.27	3,444.32	86.6%	25,704.59	22,806.63	2,897.96	88.7%
12/31/2028	26,339.22	23,456.75	2,882.48	89.1%	26,339.22	23,903.08	2,436.14	90.8%
12/31/2029	26,991.85	24,734.81	2,257.04	91.6%	26,991.85	25,077.38	1,914.47	92.9%
12/31/2030	27,678.56	26,106.63	1,571.93	94.3%	27,678.56	26,337.39	1,341.17	95.2%
12/31/2031	28,393.88	27,582.23	811.65	97.1%	28,393.88	27,692.27	701.61	97.5%
12/31/2032	29,139.65	28,870.28	269.37	99.1%	29,139.65	28,894.73	244.93	99.2%
12/31/2033	29,921.64	29,889.54	32.10	99.9%	29,921.64	29,875.91	45.73	99.8%
12/31/2034	30,744.24	30,864.34	(120.10)	100.4%	30,744.24	30,825.67	(81.43)	100.3%

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 January 27, 2015.

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

1/27/2015