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March 23, 2012

Mr. Alan Conroy
Executive Director
Kansas Public Employees Retirement System
611 South Kansas Avenue, Suite 100
Topeka, KS 66603

Re: Cost Projections under HB 2194, HB 2545, and Senate Cash Balance Plan Design (Prepared at request of President Morris/Senator Kelly)

Dear Alan:

As you requested, we have performed a cost study to compare the estimated employer costs under HB 2194, HB 2545, and the Cash Balance Plan prepared at the request of President Morris and Senator Kelly (referred to in this letter as "Senate Cash Balance Plan (Morris/Kelly)"). The cost estimates for HB 2194 and HB 2545 shown in the attached exhibits are the same as those provided in our cost study letter for the Study Commission Plan, dated January 23, 2012. The basic plan provisions of the Senate Cash Balance Plan (Morris/Kelly), on which our cost projections are based, are set out below. For purposes of the cost projections for the proposed cash balance plan, the effective date of the new plan design is January 1, 2014. All employees hired on or after that date become members of KPERS Tier 3. Current members of KPERS on January 1, 2014 remain members of Tier 1 or 2.

Cash Balance Plan Design

A summary of basic plan provisions upon which our cost projections are based include:

- The employer credit to the cash balance account is 4% per year.
- The guaranteed interest credit is 6% per year with interest credited quarterly. Discretionary dividends may be granted by the KPERS Board of Directors after taking the funding, market conditions, actual investment returns, and other relevant factors into account. The discretionary dividends will only be credited to the account balances of members with at least 10 years of service. The maximum dividend is 4%.
- Employee contribution rate is 6% of pay.
- 100% vesting after five (5) years of service.
- Normal retirement date is earlier of age 60 with 30 years of service or age 65 with 5 years of service
- No early retirement provision.

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Sn Select KPERS
Attachment 3

3-28-12



- Upon termination of employment, a vested member may elect to withdraw their employee account balance, but will forfeit the benefit payable from the employer account value. If the member leaves their employee contributions in the System, they may retire upon reaching normal retirement age with benefits based on the total account value (employer plus employee).
- When the member retires at normal retirement age, the member can elect to receive 10%, 20% or 30% of the total account balance (employee and employer) as a lump sum. The remaining balance must be converted to a monthly benefit, based on the form of payment selected by the member. The annuity amount is determined by the annuity conversion factors which are based on a 6% interest rate and a mortality table selected by the Board.
- Normal form of payment is a five year certain and life annuity.
- If a member dies prior to reaching the normal retirement age of 65, no benefit is payable and the account balance is forfeited unless (i) the member is vested; (ii) the member has at least five (5) years of service at death; and (iii) the member's spouse at the time of death is designated as the sole primary beneficiary. In that case, the spouse shall receive a benefit when the member would have reached his normal retirement age.
- If a member becomes disabled while actively working, such member shall be given participating service credit for the entire period of his disability. Such member's account shall be credited with both the employee contribution and the employer credit until the earliest of (i) death; (ii) attainment of normal retirement age; or (iii) the date the member is no longer entitled to receive disability benefits.
- A benefit of \$4,000 is payable upon a retired member's death.

Statutory Contribution Cap

In KPERS, the employers do not necessarily contribute the full actuarial contribution rate. Based on legislation passed in 1993, the employer contribution rates certified by the Board may not increase by more than the statutory cap. The current statutory cap, which has been changed periodically, is 0.60% for the State, School and Local groups. Senate Substitute for HB 2194 increased the statutory cap over a four year period beginning with 0.9% in FY 2014 to an ultimate cap of 1.2% in FY 2017.

HB 2545 eliminates the statutory cap on employer contributions, effective July 1, 2013. Therefore, this provision is reflected in the cost projections for HB 2545.

The increases in the statutory cap on the employer contribution rate contained in Senate Substitute for HB 2194 are maintained in the cost projections of the proposed Senate Cash Balance Plan (Morris/Kelly).

Senate Substitute for HB 2194

The cost projections for HB 2194 shown in this study are based on the default elections provided under Senate Substitute for HB 2194 as passed by the 2011 Legislature. In addition, the projections for HB 2545 and the Senate Cash Balance Plan (Morris/Kelly) also reflect the default benefit provision changes for KPERS Tier 1 and 2 members included in Senate Substitute for HB 2194.



Actuarial Assumptions and Methods

In general, the same actuarial methods and assumptions that were used in the December 31, 2010 actuarial valuation were used in these cost projections unless otherwise noted. In addition, the actuarial assumptions used to generate the cost projections for HB 2545 are the same as those outlined in our letter dated January 23, 2012. They include an 8% assumption for the interest crediting rate and annuity conversion factors based on a 6.5% postretirement interest rate and the RP 2000 Mortality Table projected to 2035. Because retirement eligibility requirements are different under both HB 2545 and the Senate Cash Balance Plan (Morris/Kelly) than those in the current plan and the benefits provided are also different, the retirement patterns are expected to change. Cavanaugh Macdonald selected retirement rates under HB 2545 and the Senate Cash Balance Plan (Morris/Kelly) that we believe are reasonable given the limited knowledge we have at this time about behaviors that will occur many years in the future. However, actual experience may vary, at times significantly, from the assumptions used in these projections. If it does, the cost projections will also be impacted.

The Senate Cash Balance Plan (Morris/Kelly) provides for a guaranteed interest credit of 6%, but also provides that a dividend may be granted at the discretion of the KPERS Board of Directors subject to certain conditions. Discretionary dividends may be granted by the KPERS Board of Directors after taking the funding, market conditions, actual investment returns, and other relevant factors into account. The discretionary dividends will only be credited to the account balances of members with at least 10 years of service. The maximum dividend in any given year is 4%. Therefore, an assumption is needed to anticipate the long term effective interest crediting rate, reflecting both the guaranteed rate and the dividends. Due to time constraints related to the modeling of costs, there was insufficient time to perform a comprehensive analysis to determine the expected total interest crediting rate, including the additional dividends that may be granted by the Board. Based on very limited analysis, an assumption of 6.0% for the first 10 years of employment and 8% thereafter was used for purposes of this cost study. If this Cash Balance plan design moves forward, further modeling of the expected rates of return on the KPERS portfolio and the resulting dividend crediting rate should be completed so the actuarial assumption can be further refined. Any change in this assumption will impact the cost projections attached to this letter. If all other plan design parameters and actuarial assumptions are unchanged, a lower interest crediting rate will reduce the costs and a higher assumed crediting rate will increase the costs shown in the attached exhibits.

All vested members in the proposed Cash Balance Plan are assumed to leave their employee account balance in the Cash Balance Plan when they terminate employment and receive benefits based upon the total account value at normal retirement age. Any modification of this provision, such as giving vested terminated members part or all of the account value due to employer credits at termination, would impact the cost projections. In addition, the assumption for the portion of the retirement benefit paid as a lump sum at normal retirement was set to 30% of the account balance.

HB 2545 and the proposed Cash Balance Plan are both defined benefit plans so our modeling assumes that the new tier will be combined with the existing KPERS Tiers 1 and 2 in one system with one trust. However, separate employer contribution rates will continue to be determined for the State/School group and the Local group. The actuarial valuation will reflect the future benefit payments for Tier 3 members along with those for Tier 1 and 2 members and one overall employer contribution rate will be developed for each group, which includes the UAL payment, to be paid on all covered payroll (Tier 1, Tier 2 and Tier 3 members). From an actuarial perspective, the valuation process is unchanged other than reflecting the new benefit structure for Tier 3 members.

The amortization period used in the cost projections remained at a closed 22 year period starting on December 31, 2010. In order to mitigate the impact of the time lag between the valuation date and the



fiscal year in which the contribution rate is effective, the amortization period was set to an open ten year period in 2030 for all cost projections.

Results

The cost impact of the various proposed plan designs will unfold over time as current Tier 1 and Tier 2 members leave covered employment and are replaced by Tier 3 members. Therefore, a projection of costs over a long period of time is necessary to see the long term impact of the proposed change. The cost estimates for HB 2194, HB 2545, and the proposed Senate Cash Balance Plan (Morris/Kelly) are reflected in the attached exhibits which show the expected employer contribution rate under each plan design by year for the State/School and Local groups (Exhibits A1 and A2) and the estimated dollar amount of employer contributions in each future year (Exhibits B1 and B2). The projections assume that all actuarial assumptions, including the 8% investment return assumption, are met in the future. Please note that the dollar amounts of employer contributions shown 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. In order to provide a method for more direct comparison of results, the present value of the difference in the employer contributions has been included in the right hand column for each set of projected contributions on Exhibits B1 and B2 by year and in the aggregate. The employer contribution rate also provides a reliable way to compare the cost of various plan designs in the future. Exhibits C1 and C2 split the projected employer contributions into normal cost and UAL payments by year and in total for HB 2194 and the proposed Senate Cash Balance Plan (Morris/Kelly).

The cost projections attached to this letter are based on one set of actuarial assumptions, which include an 8% assumed rate of investment return. The cost projections for the various plan designs are sensitive to the assumptions used, particularly the investment return assumption. However, the impact of different assumptions varies for each of the three plan designs because they are different from each other. Further analysis can be provided upon request if it is deemed to be necessary or helpful.

It should also be noted that the different plan designs reflected in HB 2194, HB 2545, and the proposed Senate Cash Balance Plan (Morris/Kelly) do not provide the same amount of retirement benefits. This, in turn, has an impact on the cost of the plan designs. Therefore, the cost projections should not be evaluated in isolation from the benefit amounts provided by each plan design.

Disclaimers, Caveats, and Limitations

The numerical charts that comprise this study are based primarily upon the December 31, 2010 valuation results, the actuarial assumptions used in the valuation (other than as noted in this letter), and the projection model prepared by the System's actuary, Cavanaugh Macdonald Consulting, LLC. Significant items are noted below:

- 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).
- Changes in the retirement plan eligibility and benefit amounts may have an effect on future termination and retirement patterns. While we have attempted to reflect the change in retirement eligibility under HB 2545 and the Senate Cash Balance Plan (Morris/Kelly), how changes in the benefit structure may ultimately impact termination of employment patterns cannot be known at this time. Therefore, no changes have been modeled.



- 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 employment, they are assumed to be replaced by new employees who have a similar demographic profile as recent new hires.
- Plan provisions for Tiers 1 and 2 are modified in accordance with Senate Substitute for HB 2194, for all three projections. Tier 3 benefits are provided under either HB 2545 or the proposed Senate Cash Balance Plan (Morris/Kelly) as described earlier in this letter. There are no other benefit changes reflected in future years.
- The projections for the proposed Senate Cash Balance Plan (Morris/Kelly) reflect the assumed total interest credits (guaranteed plus discretionary) of 6.0% for the first ten years of employment and 8.0% thereafter. If the actual interest credits and dividends granted are more than assumed, it will generally increase the cost of the plan. If actual interest credits granted are less than assumed each year, the cost of the plan will be lower, all other factors being equal.
- The funding methods including the entry age normal cost method, the asset smoothing method, and the amortization method and period remain unchanged other than as noted elsewhere in this letter.
- The state and local employers will contribute as scheduled under HB 2194 (with consideration to changes in the statutory caps in that legislation) and with no statutory cap under HB 2545. The projections for the Senate Cash Balance Plan (Morris/Kelly) reflect the same statutory cap as HB 2194.
- 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 this 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, 2010, 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 made. 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, Patrice A. Beckham, FSA and Brent A. Banister, FSA, are consulting actuaries with Cavanaugh Macdonald Consulting, LLC. We are members of the American Academy of Actuaries, 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 any questions or additional information is needed, please let us know. We are available to provide additional analysis or explanation.

Sincerely,

A handwritten signature in cursive script that reads "Patrice Beckham".

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

A handwritten signature in cursive script that reads "Brent A. Banister".

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





Exhibit A1
 KPERs Contribution Rate Projections under HB 2194, HB 2545, and Senate Cash Balance Plan (Morris/Kelly)
 State/School Group

Fiscal Year	Total Payroll (\$M)	Employer Contribution Rate		Employer Contribution Rate		Employer Contribution Rate	
		HB 2194	HB 2545	HB 2194	Cash Balance	HB 2545	Cash Balance
2012	4,465.19	8.77%	8.77%	8.77%	8.77%	8.77%	8.77%
2013	4,609.30	9.37%	9.37%	9.37%	9.37%	9.37%	9.37%
2014	4,742.86	10.27%	13.44%	10.27%	10.27%	13.44%	10.27%
2015	4,889.77	11.27%	13.61%	11.27%	11.27%	13.61%	11.27%
2016	5,048.36	12.37%	14.82%	12.37%	12.37%	14.82%	12.37%
2017	5,217.25	13.57%	14.79%	13.57%	13.57%	14.79%	13.57%
2018	5,396.09	14.69%	14.65%	14.69%	14.65%	14.65%	14.65%
2019	5,585.80	14.67%	14.74%	14.67%	14.94%	14.74%	14.94%
2020	5,786.83	14.80%	14.79%	14.80%	15.15%	14.79%	15.15%
2021	5,999.32	14.85%	14.84%	14.85%	15.28%	14.84%	15.28%
2022	6,223.41	14.89%	14.89%	14.89%	15.35%	14.89%	15.35%
2023	6,458.61	14.81%	14.92%	14.81%	15.40%	14.92%	15.40%
2024	6,704.71	14.76%	14.93%	14.76%	15.41%	14.93%	15.41%
2025	6,962.16	14.70%	14.93%	14.70%	15.42%	14.93%	15.42%
2026	7,231.45	14.62%	14.93%	14.62%	15.42%	14.93%	15.42%
2027	7,512.93	14.54%	14.91%	14.54%	15.41%	14.91%	15.41%
2028	7,806.93	14.45%	14.88%	14.45%	15.40%	14.88%	15.40%
2029	8,113.92	14.34%	14.83%	14.34%	15.39%	14.83%	15.39%
2030	8,433.95	14.21%	14.77%	14.21%	15.36%	14.77%	15.36%
2031	8,767.29	14.08%	14.67%	14.08%	15.33%	14.67%	15.33%
2032	9,114.66	13.90%	14.53%	13.90%	15.30%	14.53%	15.30%
2033	9,476.23	5.43%	6.70%	5.43%	6.56%	6.70%	6.56%
2034	9,852.28	3.95%	5.38%	3.95%	5.11%	5.38%	5.11%
2035	10,243.64	2.42%	4.00%	2.42%	3.60%	4.00%	3.60%
2036	10,650.79	1.38%	3.07%	1.38%	2.59%	3.07%	2.59%
2037	11,073.56	0.90%	2.68%	0.90%	2.15%	2.68%	2.15%
2038	11,513.15	0.58%	2.43%	0.58%	1.89%	2.43%	1.89%
2039	11,970.93	0.41%	2.32%	0.41%	1.76%	2.32%	1.76%
2040	12,448.09	0.33%	2.28%	0.33%	1.73%	2.28%	1.73%
2041	12,947.04	0.29%	2.30%	0.29%	1.74%	2.30%	1.74%
2042	13,469.39	0.29%	2.33%	0.29%	1.78%	2.33%	1.78%
2043	14,014.53	0.29%	2.38%	0.29%	1.82%	2.38%	1.82%
2044	14,581.39	0.31%	2.43%	0.31%	1.87%	2.43%	1.87%
2045	15,170.09	0.34%	2.48%	0.34%	1.92%	2.48%	1.92%
2046	15,780.74	0.37%	2.54%	0.37%	1.98%	2.54%	1.98%
2047	16,410.26	0.40%	2.58%	0.40%	2.03%	2.58%	2.03%
2048	17,057.88	0.42%	2.64%	0.42%	2.07%	2.64%	2.07%
2049	17,727.69	0.46%	2.67%	0.46%	2.11%	2.67%	2.11%
2050	18,423.67	0.48%	2.73%	0.48%	2.15%	2.73%	2.15%
2051	19,147.45	0.52%	2.76%	0.52%	2.17%	2.76%	2.17%
2052	19,899.69	0.54%	2.81%	0.54%	2.18%	2.81%	2.18%
2053	20,682.16	0.56%	2.85%	0.56%	2.20%	2.85%	2.20%
2054	21,496.61	0.59%	2.89%	0.59%	2.20%	2.89%	2.20%
2055	22,344.49	0.61%	2.92%	0.61%	2.20%	2.92%	2.20%
2056	23,227.14	0.63%	2.95%	0.63%	2.21%	2.95%	2.21%
2057	24,145.92	0.65%	2.97%	0.65%	2.20%	2.97%	2.20%
2058	25,102.38	0.68%	2.99%	0.68%	2.18%	2.99%	2.18%
2059	26,098.07	0.69%	3.02%	0.69%	2.17%	3.02%	2.17%
2060	27,134.62	0.71%	3.04%	0.71%	2.15%	3.04%	2.15%

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 March 23, 2012.



Exhibit A2
 KPERs Contribution Rate Projections under HB 2194, HB 2545, and Senate Cash Balance Plan (Morris/Kelly)
 Local Group

Fiscal Year	Total Payroll (\$M)	HB 2194 vs HB 2545		HB 2194 vs Senate Cash Balance		HB 2545 vs Senate Cash Balance	
		Employer Contribution Rate	HB 2545	Employer Contribution Rate	Cash Balance	Employer Contribution Rate	Cash Balance
2012	\$ 1,678.75	7.34%	7.34%	7.34%	7.34%	7.34%	7.34%
2013	1,726.92	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%
2014	1,777.74	8.65%	8.91%	8.65%	8.64%	8.64%	8.64%
2015	1,834.05	9.12%	9.47%	9.12%	9.16%	9.47%	9.16%
2016	1,893.42	9.00%	9.45%	9.00%	9.11%	9.45%	9.11%
2017	1,955.65	9.00%	9.53%	9.00%	9.18%	9.53%	9.18%
2018	2,020.46	9.00%	9.60%	9.00%	9.24%	9.60%	9.24%
2019	2,087.94	8.99%	9.67%	8.99%	9.31%	9.67%	9.31%
2020	2,158.09	8.98%	9.72%	8.98%	9.35%	9.72%	9.35%
2021	2,231.91	8.98%	9.80%	8.98%	9.41%	9.80%	9.41%
2022	2,309.17	8.98%	9.87%	8.98%	9.48%	9.87%	9.48%
2023	2,389.76	8.98%	9.93%	8.98%	9.54%	9.93%	9.54%
2024	2,474.65	8.97%	9.99%	8.97%	9.60%	9.99%	9.60%
2025	2,563.71	8.98%	10.04%	8.98%	9.66%	9.99%	9.66%
2026	2,656.71	8.97%	10.10%	8.97%	9.73%	9.73%	9.73%
2027	2,753.93	8.97%	10.14%	8.97%	9.79%	10.14%	9.79%
2028	2,856.33	8.96%	10.16%	8.96%	9.85%	10.16%	9.85%
2029	2,963.32	8.94%	10.19%	8.94%	9.92%	10.19%	9.92%
2030	3,075.51	8.93%	10.20%	8.93%	10.00%	10.20%	10.00%
2031	3,192.38	8.91%	10.18%	8.91%	10.09%	10.18%	10.09%
2032	3,313.68	3.65%	5.05%	3.65%	4.64%	5.05%	4.64%
2033	3,440.20	2.75%	4.20%	2.75%	3.77%	4.20%	3.77%
2034	3,571.81	1.82%	3.32%	1.82%	2.86%	3.32%	2.86%
2035	3,709.17	1.49%	3.04%	1.49%	2.58%	3.04%	2.58%
2036	3,851.93	1.27%	2.85%	1.27%	2.39%	2.85%	2.39%
2037	4,001.21	1.14%	2.77%	1.14%	2.31%	2.77%	2.31%
2038	4,157.18	1.06%	2.71%	1.06%	2.26%	2.71%	2.26%
2039	4,319.48	0.99%	2.68%	0.99%	2.24%	2.68%	2.24%
2040	4,488.52	0.94%	2.67%	0.94%	2.24%	2.67%	2.24%
2041	4,663.81	0.90%	2.66%	0.90%	2.23%	2.66%	2.23%
2042	4,846.82	0.86%	2.65%	0.86%	2.23%	2.65%	2.23%
2043	5,037.31	0.83%	2.65%	0.83%	2.23%	2.65%	2.23%
2044	5,235.49	0.81%	2.65%	0.81%	2.23%	2.65%	2.23%
2045	5,442.03	0.79%	2.66%	0.79%	2.24%	2.66%	2.24%
2046	5,656.91	0.77%	2.67%	0.77%	2.24%	2.67%	2.24%
2047	5,879.63	0.76%	2.68%	0.76%	2.25%	2.68%	2.25%
2048	6,110.89	0.74%	2.70%	0.74%	2.25%	2.70%	2.25%
2049	6,351.53	0.74%	2.70%	0.74%	2.25%	2.70%	2.25%
2050	6,602.17	0.73%	2.72%	0.73%	2.25%	2.72%	2.25%
2051	6,862.33	0.73%	2.74%	0.73%	2.26%	2.74%	2.26%
2052	7,132.79	0.74%	2.75%	0.74%	2.25%	2.74%	2.25%
2053	7,414.16	0.73%	2.77%	0.73%	2.25%	2.77%	2.25%
2054	7,707.23	0.73%	2.77%	0.73%	2.23%	2.77%	2.23%
2055	8,012.19	0.74%	2.79%	0.74%	2.22%	2.79%	2.22%
2056	8,329.45	0.74%	2.81%	0.74%	2.21%	2.81%	2.21%
2057	8,659.60	0.76%	2.81%	0.76%	2.20%	2.81%	2.20%
2058	9,003.17	0.76%	2.83%	0.76%	2.18%	2.83%	2.18%
2059	9,360.70	0.76%	2.84%	0.76%	2.16%	2.84%	2.16%
2060	9,732.77	0.76%	2.85%	0.76%	2.15%	2.85%	2.15%

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 Caravanagh Macdonald dated March 23, 2012.
 All assumptions, including the 8% investment return, are assumed to be met each year in the future.



Exhibit B1
KPPERS Cost Projections under HB 2194, HB 2545, and Senate Cash Balance Plan (Morris/Kelly)
State/School Group

Fiscal Year	Total Payroll (\$M)	Employer Contribution Amount (\$M)			Present Value of Difference			Employer Contribution Amount (\$M)			Present Value of Difference			Employer Contribution Amount (\$M)			Present Value of Difference		
		HB 2194	HB 2545	Difference	of Difference	HB 2194	Cash Balance	Difference	of Difference	HB 2545	Cash Balance	Difference	of Difference	HB 2545	Cash Balance	Difference	of Difference	Present Value	
2012	4,465.19	391.60	391.60	-	-	391.60	391.60	-	391.60	391.60	-	-	391.60	391.60	-	-	-	-	
2013	4,609.30	431.89	431.89	-	-	431.89	431.89	-	431.89	431.89	-	-	431.89	431.89	-	-	-	-	
2014	4,742.86	487.09	487.09	-	-	487.09	487.09	-	487.09	487.09	-	-	487.09	487.09	-	-	(150.37)	(124.05)	
2015	4,889.77	551.08	551.08	-	-	551.08	551.08	-	551.08	551.08	-	-	551.08	551.08	-	-	(114.63)	(87.56)	
2016	5,048.36	624.48	624.48	-	-	624.48	624.48	-	624.48	624.48	-	-	624.48	624.48	-	-	(748.18)	(87.49)	
2017	5,217.25	707.98	707.98	-	-	707.98	707.98	-	707.98	707.98	-	-	707.98	707.98	-	-	(65.54)	(41.61)	
2018	5,396.09	780.44	780.44	-	-	780.44	780.44	-	780.44	780.44	-	-	780.44	780.44	-	-	0.39	0.24	
2019	5,585.80	819.50	819.50	-	-	819.50	819.50	-	819.50	819.50	-	-	819.50	819.50	-	-	8.31	6.03	
2020	5,786.83	856.63	856.63	-	-	856.63	856.63	-	856.63	856.63	-	-	856.63	856.63	-	-	20.69	10.76	
2021	5,999.32	890.84	890.84	-	-	890.84	890.84	-	890.84	890.84	-	-	890.84	890.84	-	-	20.20	12.84	
2022	6,223.41	923.50	923.50	-	-	923.50	923.50	-	923.50	923.50	-	-	923.50	923.50	-	-	15.65	12.90	
2023	6,458.61	956.42	956.42	-	-	956.42	956.42	-	956.42	956.42	-	-	956.42	956.42	-	-	37.92	12.78	
2024	6,704.71	989.41	989.41	-	-	989.41	989.41	-	989.41	989.41	-	-	989.41	989.41	-	-	43.82	12.24	
2025	6,962.16	1,023.12	1,023.12	-	-	1,023.12	1,023.12	-	1,023.12	1,023.12	-	-	1,023.12	1,023.12	-	-	50.11	11.87	
2026	7,231.45	1,057.31	1,057.31	-	-	1,057.31	1,057.31	-	1,057.31	1,057.31	-	-	1,057.31	1,057.31	-	-	55.78	11.65	
2027	7,512.93	1,092.03	1,092.03	-	-	1,092.03	1,092.03	-	1,092.03	1,092.03	-	-	1,092.03	1,092.03	-	-	65.81	11.51	
2028	7,806.93	1,127.87	1,127.87	-	-	1,127.87	1,127.87	-	1,127.87	1,127.87	-	-	1,127.87	1,127.87	-	-	74.73	11.41	
2029	8,113.92	1,163.67	1,163.67	-	-	1,163.67	1,163.67	-	1,163.67	1,163.67	-	-	1,163.67	1,163.67	-	-	85.20	12.09	
2030	8,433.95	1,198.79	1,198.79	-	-	1,198.79	1,198.79	-	1,198.79	1,198.79	-	-	1,198.79	1,198.79	-	-	96.73	13.01	
2031	8,767.29	1,234.26	1,234.26	-	-	1,234.26	1,234.26	-	1,234.26	1,234.26	-	-	1,234.26	1,234.26	-	-	109.53	14.42	
2032	9,114.66	1,266.68	1,266.68	-	-	1,266.68	1,266.68	-	1,266.68	1,266.68	-	-	1,266.68	1,266.68	-	-	127.45	15.80	
2033	9,476.23	1,324.29	1,324.29	-	-	1,324.29	1,324.29	-	1,324.29	1,324.29	-	-	1,324.29	1,324.29	-	-	142.11	17.28	
2034	9,852.28	1,389.15	1,389.15	-	-	1,389.15	1,389.15	-	1,389.15	1,389.15	-	-	1,389.15	1,389.15	-	-	162.66	18.94	
2035	10,243.64	1,461.55	1,461.55	-	-	1,461.55	1,461.55	-	1,461.55	1,461.55	-	-	1,461.55	1,461.55	-	-	187.87	20.22	
2036	10,650.79	1,542.81	1,542.81	-	-	1,542.81	1,542.81	-	1,542.81	1,542.81	-	-	1,542.81	1,542.81	-	-	212.97	22.16	
2037	11,073.56	1,632.41	1,632.41	-	-	1,632.41	1,632.41	-	1,632.41	1,632.41	-	-	1,632.41	1,632.41	-	-	237.77	23.29	
2038	11,513.15	1,729.86	1,729.86	-	-	1,729.86	1,729.86	-	1,729.86	1,729.86	-	-	1,729.86	1,729.86	-	-	261.17	24.53	
2039	11,970.93	1,834.90	1,834.90	-	-	1,834.90	1,834.90	-	1,834.90	1,834.90	-	-	1,834.90	1,834.90	-	-	284.40	26.31	
2040	12,448.09	1,947.04	1,947.04	-	-	1,947.04	1,947.04	-	1,947.04	1,947.04	-	-	1,947.04	1,947.04	-	-	307.64	28.29	
2041	12,947.04	2,066.18	2,066.18	-	-	2,066.18	2,066.18	-	2,066.18	2,066.18	-	-	2,066.18	2,066.18	-	-	332.99	30.52	
2042	13,469.39	2,192.37	2,192.37	-	-	2,192.37	2,192.37	-	2,192.37	2,192.37	-	-	2,192.37	2,192.37	-	-	359.64	33.24	
2043	14,014.53	2,326.55	2,326.55	-	-	2,326.55	2,326.55	-	2,326.55	2,326.55	-	-	2,326.55	2,326.55	-	-	388.83	36.33	
2044	14,581.39	2,469.90	2,469.90	-	-	2,469.90	2,469.90	-	2,469.90	2,469.90	-	-	2,469.90	2,469.90	-	-	419.72	39.81	
2045	15,170.09	2,622.41	2,622.41	-	-	2,622.41	2,622.41	-	2,622.41	2,622.41	-	-	2,622.41	2,622.41	-	-	452.35	43.71	
2046	15,780.74	2,784.90	2,784.90	-	-	2,784.90	2,784.90	-	2,784.90	2,784.90	-	-	2,784.90	2,784.90	-	-	486.90	47.30	
2047	16,410.26	2,958.35	2,958.35	-	-	2,958.35	2,958.35	-	2,958.35	2,958.35	-	-	2,958.35	2,958.35	-	-	523.35	50.67	
2048	17,057.88	3,142.22	3,142.22	-	-	3,142.22	3,142.22	-	3,142.22	3,142.22	-	-	3,142.22	3,142.22	-	-	561.71	54.81	
2049	17,727.69	3,337.69	3,337.69	-	-	3,337.69	3,337.69	-	3,337.69	3,337.69	-	-	3,337.69	3,337.69	-	-	602.08	58.73	
2050	18,423.67	3,544.35	3,544.35	-	-	3,544.35	3,544.35	-	3,544.35	3,544.35	-	-	3,544.35	3,544.35	-	-	644.90	63.45	
2051	19,147.45	3,762.83	3,762.83	-	-	3,762.83	3,762.83	-	3,762.83	3,762.83	-	-	3,762.83	3,762.83	-	-	690.26	67.91	
2052	19,899.69	3,993.17	3,993.17	-	-	3,993.17	3,993.17	-	3,993.17	3,993.17	-	-	3,993.17	3,993.17	-	-	738.98	72.17	
2053	20,682.16	4,235.23	4,235.23	-	-	4,235.23	4,235.23	-	4,235.23	4,235.23	-	-	4,235.23	4,235.23	-	-	790.51	76.73	
2054	21,496.61	4,489.88	4,489.88	-	-	4,489.88	4,489.88	-	4,489.88	4,489.88	-	-	4,489.88	4,489.88	-	-	845.31	80.63	
2055	22,344.49	4,756.33	4,756.33	-	-	4,756.33	4,756.33	-	4,756.33	4,756.33	-	-	4,756.33	4,756.33	-	-	903.51	84.91	
2056	23,227.14	5,034.94	5,034.94	-	-	5,034.94	5,034.94	-	5,034.94	5,034.94	-	-	5,034.94	5,034.94	-	-	964.82	89.57	
2057	24,145.92	5,326.08	5,326.08	-	-	5,326.08	5,326.08	-	5,326.08	5,326.08	-	-	5,326.08	5,326.08	-	-	1,029.33	93.63	
2058	25,102.38	5,632.59	5,632.59	-	-	5,632.59	5,632.59	-	5,632.59	5,632.59	-	-	5,632.59	5,632.59	-	-	1,098.14	97.17	
2059	26,098.07	5,954.91	5,954.91	-	-	5,954.91	5,954.91	-	5,954.91	5,954.91	-	-	5,954.91	5,954.91	-	-	1,170.51	100.20	
2060	27,134.62	6,293.86	6,293.86	-	-	6,293.86	6,293.86	-	6,293.86	6,293.86	-	-	6,293.86	6,293.86	-	-	1,246.68	103.77	
Total	221,400.94	33,039.06	33,039.06	-	-	33,039.06	33,039.06	-	33,039.06	33,039.06	-	-	33,039.06	33,039.06	-	-	(2,897.77)	(348.60)	

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 vanough Macdonald dated March 23, 2012. All assumptions, including the 8% investment return, are assumed to be met each year in the future.



Exhibit B2
KPERS Cost Projections under HB 2194, HB 2545, and Senate Cash Balance Plan (Morris/Kelly)
 Local Group

Fiscal Year	Total Payroll (\$MM)	HB 2194 vs HB 2545			HB 2194 vs Senate Cash Balance			HB 2545 vs Senate Cash Balance				
		HB 2194	HB 2545	Difference	HB 2194	Cash Balance	Difference	HB 2545	Cash Balance	Difference		
		Present Value	Present Value	of Difference	Present Value	Present Value	of Difference	Present Value	Present Value	of Difference		
2012	1,678.75	123.22	123.22	-	123.22	123.22	-	123.22	123.22	-		
2013	1,726.92	137.12	137.12	-	137.12	137.12	-	137.12	137.12	-		
2014	1,777.74	153.84	158.39	4.55	153.84	153.64	(0.19)	158.39	153.64	(4.74)		
2015	1,834.05	167.26	173.71	6.45	167.26	167.92	0.67	173.71	167.92	(5.78)		
2016	1,893.42	178.89	170.45	8.44	170.45	172.43	1.98	178.89	172.43	(6.46)		
2017	1,955.65	176.01	186.32	10.32	176.01	179.43	3.43	186.32	179.43	(6.89)		
2018	2,020.46	181.84	193.92	12.08	181.84	186.72	4.88	193.92	186.72	(7.21)		
2019	2,087.94	187.74	201.89	14.15	187.74	194.28	6.55	201.89	194.28	(7.61)		
2020	2,158.09	193.71	209.84	16.12	193.71	201.76	8.05	209.84	201.76	(8.08)		
2021	2,231.91	200.50	218.70	18.20	200.50	210.08	9.58	218.70	210.08	(8.62)		
2022	2,309.17	207.43	227.86	20.43	207.43	218.86	11.43	227.86	218.86	(9.00)		
2023	2,389.76	214.53	237.32	22.79	214.53	227.91	13.38	237.32	227.91	(9.41)		
2024	2,474.65	222.08	247.11	25.02	222.08	237.50	15.42	247.11	237.50	(9.60)		
2025	2,563.71	230.12	257.51	27.39	230.12	247.70	17.58	257.51	247.70	(9.82)		
2026	2,656.71	238.33	268.22	29.89	238.33	258.47	20.13	268.22	258.47	(9.76)		
2027	2,753.93	247.00	279.24	32.24	247.00	269.55	22.55	279.24	269.55	(9.69)		
2028	2,856.33	255.91	290.34	34.43	255.91	281.32	25.40	290.34	281.32	(9.02)		
2029	2,963.32	265.02	302.01	37.00	265.02	294.03	29.01	302.01	294.03	(7.99)		
2030	3,075.51	274.64	313.69	39.05	274.64	307.46	32.82	313.69	307.46	(6.23)		
2031	3,192.38	284.39	324.92	40.52	284.39	322.21	37.82	324.92	322.21	(2.70)		
2032	3,313.68	120.93	167.23	46.30	120.93	133.77	32.84	167.23	133.77	(33.46)		
2033	3,440.20	94.68	144.35	49.67	94.68	129.66	34.98	144.35	129.66	(14.69)		
2034	3,571.81	64.89	118.44	53.54	64.89	102.10	37.21	118.44	102.10	(16.34)		
2035	3,709.17	55.37	112.61	57.24	55.37	95.65	40.28	112.61	95.65	(16.96)		
2036	3,851.93	48.93	109.62	60.69	48.93	92.45	43.11	109.62	92.45	(17.18)		
2037	4,001.21	45.58	110.65	65.07	45.58	92.45	46.87	110.65	92.45	(18.20)		
2038	4,157.18	44.04	112.86	68.82	44.04	94.04	50.00	112.86	94.04	(18.82)		
2039	4,319.48	42.82	115.91	73.10	42.82	96.92	54.10	115.91	96.92	(18.99)		
2040	4,488.52	42.38	119.90	77.52	42.38	100.33	57.95	119.90	100.33	(19.57)		
2041	4,663.81	41.91	123.99	82.08	41.91	103.86	61.95	123.99	103.86	(20.13)		
2042	4,846.82	41.89	128.67	86.78	41.89	108.02	66.13	128.67	108.02	(20.65)		
2043	5,037.31	41.88	133.48	91.60	41.88	112.35	70.48	133.48	112.35	(21.12)		
2044	5,235.49	42.38	138.90	96.52	42.38	116.85	74.47	138.90	116.85	(22.05)		
2045	5,442.03	42.93	145.01	102.08	42.93	122.05	79.12	145.01	122.05	(22.96)		
2046	5,656.91	43.52	151.28	107.76	43.52	126.86	83.33	151.28	126.86	(24.42)		
2047	5,879.63	44.74	157.70	112.96	44.74	132.37	87.63	157.70	132.37	(25.32)		
2048	6,110.89	45.44	164.88	119.44	45.44	137.46	92.01	164.88	137.46	(27.42)		
2049	6,351.53	46.83	171.65	124.80	46.83	143.34	96.48	171.65	143.34	(28.32)		
2050	6,602.17	48.39	179.27	130.87	48.39	150.37	100.97	179.27	150.37	(28.91)		
2051	6,862.33	50.05	187.79	137.74	50.05	155.01	104.96	187.79	155.01	(32.78)		
2052	7,132.79	52.53	195.90	143.37	52.53	160.75	108.22	195.90	160.75	(35.15)		
2053	7,414.16	54.48	205.03	150.55	54.48	166.67	112.20	205.03	166.67	(38.35)		
2054	7,707.23	56.57	213.73	157.17	56.57	172.00	115.44	213.73	172.00	(41.73)		
2055	8,012.19	59.61	223.55	163.94	59.61	178.26	118.65	223.55	178.26	(45.29)		
2056	8,329.45	62.01	233.76	171.76	62.01	183.87	121.86	233.76	183.87	(49.89)		
2057	8,659.60	65.41	243.53	178.12	65.41	190.49	125.08	243.53	190.49	(53.04)		
2058	9,003.17	68.14	254.59	186.45	68.14	196.44	128.31	254.59	196.44	(58.14)		
2059	9,360.70	71.02	266.11	195.09	71.02	202.56	131.55	266.11	202.56	(63.55)		
2060	9,732.77	74.05	277.16	203.11	74.05	208.86	134.81	277.16	208.86	(68.30)		
Total	\$ 5,744.57	\$ 9,437.77	\$ 3,693.20	\$ 364.86	\$ 5,744.57	\$ 8,415.42	\$ 2,670.85	\$ 245.53	\$ 9,437.77	\$ 8,415.42	\$ (1,022.35)	\$ (119.34)
Present Value at 8% as of July 1, 2011	\$ 2,061.12	\$ 2,425.98	\$ 364.86	\$ 5,744.57	\$ 2,061.12	\$ 2,306.65	\$ 245.53	\$ 2,425.98	\$ 2,306.65	\$ (119.34)	\$ (119.34)	

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 Avamough Macdonald dated March 23, 2012. All assumptions, including the 8% investment return, are assumed to be met each year in the future.

Exhibit C1

Kansas Public Employee Retirement System
Comparison of State/School Group Employer Contributions for Retirement Benefits
HB 2194 versus Senate Cash Balance Plan (Morris/Kelly)

FYE	Payroll (\$M)			HB 2194				Senate Cash Balance Plan (Morris/Kelly) (1)				Difference (2)		Present Value of Difference
	Tier 1/2	Tier 3	Normal	Normal	UAI	Total	Employer DB Normal	DB Normal	UAI	Total	Difference (2)	Difference		
2012	4,465,186	0,000	8.77%	147,582	244,014	391,597	8.77%	147,582	244,014	391,597	0.00%	0.00%		
2013	4,609,301	0,000	9.37%	152,346	279,546	431,892	9.37%	152,346	279,546	431,892	0.00%	0.00%		
2014	4,706,859	0,000	10.27%	156,760	487,092	643,852	10.27%	156,760	487,092	643,852	0.00%	0.00%		
2015	4,507,134	183,492	11.27%	112,949	438,128	551,077	11.27%	112,949	438,128	551,077	0.00%	0.00%		
2016	4,332,724	541,224	12.37%	111,974	512,508	624,482	12.37%	111,974	512,508	624,482	0.00%	0.00%		
2017	4,171,368	884,524	13.57%	110,810	597,171	707,981	13.57%	110,810	597,171	707,981	0.00%	0.00%		
2018	4,017,143	1,224,718	14.46%	110,248	670,194	780,442	14.46%	110,248	670,194	780,442	0.00%	0.00%		
2019	3,868,916	1,568,662	14.80%	109,544	709,956	819,500	14.94%	109,544	709,956	819,500	2.20%	8,306		
2020	3,729,151	2,270,169	14.85%	108,967	747,658	856,625	15.15%	108,967	747,658	856,625	2.17%	8,306		
2021	3,597,727	2,625,683	14.84%	108,232	815,267	923,499	15.28%	108,232	815,267	923,499	2.15%	8,306		
2022	3,469,577	2,989,037	14.81%	107,754	848,662	956,416	15.35%	107,754	848,662	956,416	2.13%	8,306		
2023	3,343,442	3,361,269	14.76%	107,739	881,669	989,409	15.40%	107,739	881,669	989,409	2.12%	8,306		
2024	3,218,508	3,743,649	14.70%	107,601	915,524	1,023,124	15.41%	107,601	915,524	1,023,124	2.10%	8,306		
2025	3,095,688	4,135,766	14.62%	107,825	949,490	1,057,315	15.42%	107,825	949,490	1,057,315	2.09%	8,306		
2026	2,976,817	4,536,108	14.54%	107,840	984,193	1,092,033	15.41%	107,840	984,193	1,092,033	2.08%	8,306		
2027	2,861,609	4,945,319	14.45%	108,283	1,010,585	1,127,868	15.40%	108,283	1,010,585	1,127,868	2.07%	8,306		
2028	2,748,479	5,365,437	14.34%	108,856	1,054,809	1,163,666	15.39%	108,856	1,054,809	1,163,666	2.07%	8,306		
2029	2,636,015	5,797,930	14.21%	109,127	1,089,666	1,198,793	15.36%	109,127	1,089,666	1,198,793	2.07%	8,306		
2030	2,523,441	6,243,849	14.08%	110,296	1,123,967	1,234,263	15.33%	110,296	1,123,967	1,234,263	2.07%	8,306		
2031	2,410,718	6,703,938	13.90%	110,946	1,155,738	1,266,684	15.30%	110,946	1,155,738	1,266,684	2.08%	8,306		
2032	2,297,300	7,178,932	13.72%	111,686	1,188,966	1,300,152	15.26%	111,686	1,188,966	1,300,152	2.09%	8,306		
2033	2,182,241	7,670,035	13.59%	113,289	1,221,864	1,336,153	15.21%	113,289	1,221,864	1,336,153	2.09%	8,306		
2034	2,065,928	8,177,707	13.46%	114,119	1,254,922	1,373,044	15.16%	114,119	1,254,922	1,373,044	2.09%	8,306		
2035	1,948,113	8,702,679	13.38%	115,059	1,289,192	1,411,391	15.11%	115,059	1,289,192	1,411,391	2.09%	8,306		
2036	1,827,085	9,246,479	13.26%	116,807	1,328,864	1,451,671	15.06%	116,807	1,328,864	1,451,671	2.10%	8,306		
2037	1,703,396	9,809,757	13.15%	117,663	1,373,044	1,494,707	15.01%	117,663	1,373,044	1,494,707	2.11%	8,306		
2038	1,578,269	10,392,660	13.05%	118,635	1,421,864	1,541,499	14.96%	118,635	1,421,864	1,541,499	2.12%	8,306		
2039	1,452,370	10,995,722	12.96%	120,583	1,473,044	1,592,622	14.91%	120,583	1,473,044	1,592,622	2.13%	8,306		
2040	1,329,445	11,617,595	12.89%	122,573	1,528,864	1,648,438	14.86%	122,573	1,528,864	1,648,438	2.14%	8,306		
2041	1,213,354	12,256,040	12.82%	124,704	1,588,192	1,708,884	14.81%	124,704	1,588,192	1,708,884	2.15%	8,306		
2042	1,102,458	12,912,073	12.76%	126,828	1,651,666	1,773,530	14.76%	126,828	1,651,666	1,773,530	2.16%	8,306		
2043	992,920	13,588,470	12.71%	130,404	1,720,192	1,842,384	14.71%	130,404	1,720,192	1,842,384	2.17%	8,306		
2044	885,412	14,284,677	12.67%	133,859	1,792,622	1,915,456	14.66%	133,859	1,792,622	1,915,456	2.18%	8,306		
2045	783,139	14,997,606	12.64%	139,484	1,870,192	1,996,676	14.61%	139,484	1,870,192	1,996,676	2.19%	8,306		
2046	680,796	15,729,466	12.61%	142,147	1,954,666	2,084,813	14.56%	142,147	1,954,666	2,084,813	2.20%	8,306		
2047	573,131	16,484,746	12.59%	146,504	2,045,192	2,184,686	14.51%	146,504	2,045,192	2,184,686	2.21%	8,306		
2048	465,713	17,261,980	12.57%	151,141	2,148,864	2,296,017	14.46%	151,141	2,148,864	2,296,017	2.22%	8,306		
2049	373,175	18,050,490	12.56%	156,139	2,264,666	2,419,805	14.41%	156,139	2,264,666	2,419,805	2.23%	8,306		
2050	299,011	18,848,441	12.55%	161,199	2,392,622	2,554,756	14.36%	161,199	2,392,622	2,554,756	2.24%	8,306		
2051	233,082	19,664,612	12.54%	166,240	2,532,666	2,700,906	14.31%	166,240	2,532,666	2,700,906	2.25%	8,306		
2052	178,915	20,503,240	12.53%	171,457	2,684,666	2,872,063	14.26%	171,457	2,684,666	2,872,063	2.26%	8,306		
2053	133,803	21,362,807	12.52%	176,755	2,848,666	3,068,421	14.21%	176,755	2,848,666	3,068,421	2.27%	8,306		
2054	101,111	22,243,377	12.51%	182,141	3,028,666	3,282,807	14.16%	182,141	3,028,666	3,282,807	2.28%	8,306		
2055	76,276	23,150,859	12.50%	187,614	3,202,666	3,515,280	14.11%	187,614	3,202,666	3,515,280	2.29%	8,306		
2056	56,488	24,089,437	12.49%	193,174	3,391,666	3,763,434	14.06%	193,174	3,391,666	3,763,434	2.30%	8,306		
2057	41,446	25,060,935	12.48%	200,313	3,595,666	4,034,947	14.01%	200,313	3,595,666	4,034,947	2.31%	8,306		
2058	30,655	26,067,418	12.47%	210,629	3,815,666	4,338,285	13.96%	210,629	3,815,666	4,338,285	2.32%	8,306		
2059	22,730	27,111,890	12.46%	219,227	4,054,666	4,661,893	13.91%	219,227	4,054,666	4,661,893	2.33%	8,306		
2060				6,533,694	15,587,248	22,140,942								



(1) Effective 1/1/14
In millions.
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 March 23, 2012.
All assumptions, including the 8.0% investment return, are assumed to be met each year in the future.

Exhibit C2

Kansas Public Employee Retirement System
Comparison of Local Group Employer Contributions for Retirement Benefits
HB 2194 versus Senate Cash Balance Plan (Morris/Kelly)

FYE	Payroll (\$M)		Employer Rate-DB	Normal Cost Rate	HB 2194			Employer Rate-DB	DB Normal Cost Rate	Senate Cash Balance Plan (Morris/Kelly) (1)			Difference (2)	Present Value of Difference
	Tier 1/2	Tier 3			Normal Cost (2)	UAL Payment (3)	Total Cost (2)			DB Normal Cost (2)	UAL Payment (3)	Total Cost (2)		
2012	1,678,751	0.000	7.34%	2.94%	49,355	73,865	123,220	7.34%	2.94%	49,355	73,865	123,220	0.000	0.000
2013	1,726,922	0.000	7.94%	2.94%	50,772	86,346	137,118	7.94%	2.94%	50,772	86,346	137,118	0.000	0.000
2014	1,777,741	0.000	8.65%	1.96%	34,906	118,931	153,837	8.64%	1.95%	34,713	118,931	153,644	(0.193)	(0.159)
2015	1,682,855	151,199	9.12%	1.86%	34,106	133,152	167,259	9.16%	1.90%	34,773	133,152	167,925	0.666	0.509
2016	1,601,267	292,133	9.00%	1.76%	33,371	137,084	170,455	9.11%	1.87%	33,347	137,084	172,430	1.975	1.397
2017	1,531,885	423,760	9.00%	1.67%	33,049	142,958	176,006	9.18%	1.86%	36,281	143,153	179,434	3.428	2.245
2018	1,468,854	551,608	9.00%	1.62%	32,730	149,110	181,840	9.24%	1.84%	37,201	149,514	186,715	4.875	2.956
2019	1,411,513	676,427	8.99%	1.55%	32,396	155,343	187,739	9.31%	1.83%	38,107	156,178	194,285	6.546	3.675
2020	1,357,016	801,074	8.98%	1.49%	32,073	161,641	193,714	9.35%	1.81%	39,042	162,720	201,762	8.048	4.184
2021	1,306,765	925,141	8.98%	1.42%	31,768	168,732	200,500	9.41%	1.79%	40,011	170,071	210,083	9.582	4.613
2022	1,259,029	1,050,142	8.98%	1.36%	31,472	175,959	207,431	9.48%	1.78%	41,055	177,806	218,861	11.430	5.095
2023	1,211,644	1,178,114	8.98%	1.31%	31,237	183,294	214,531	9.54%	1.77%	42,225	185,684	227,909	13.378	5.521
2024	1,166,580	1,308,070	8.97%	1.25%	31,040	191,043	222,083	9.60%	1.76%	43,490	194,013	237,502	15.419	5.892
2025	1,122,814	1,440,897	8.98%	1.21%	30,916	199,200	230,117	9.66%	1.75%	44,906	202,790	247,695	17.579	6.220
2026	1,079,538	1,577,175	8.97%	1.16%	30,845	207,489	238,335	9.73%	1.75%	46,459	212,006	258,465	20.130	6.595
2027	1,036,739	1,717,192	8.97%	1.12%	30,815	216,184	246,999	9.79%	1.75%	48,133	221,416	269,549	22.550	6.840
2028	996,305	1,860,024	8.96%	1.08%	30,834	225,079	255,913	9.85%	1.75%	49,953	231,363	281,316	25.403	7.135
2029	956,653	2,006,671	8.94%	1.04%	30,915	234,103	265,017	9.92%	1.75%	51,922	242,104	294,026	29.009	7.544
2030	918,258	2,157,256	8.93%	1.01%	31,056	243,581	274,637	10.00%	1.76%	54,036	253,422	307,459	32.821	7.903
2031	880,111	2,312,267	8.91%	0.98%	31,239	253,136	284,395	10.09%	1.76%	56,289	265,925	322,214	37.819	8.432
2032	841,490	2,472,188	3.65%	0.95%	31,460	89,469	120,929	4.64%	1.77%	58,672	95,103	153,774	32.845	6.781
2033	802,890	2,637,309	2.75%	0.92%	31,727	62,956	94,682	3.77%	1.78%	63,820	68,460	129,663	34,981	6.687
2034	763,519	2,808,290	1.82%	0.90%	32,032	32,861	64,893	2.86%	1.79%	63,880	38,218	102,098	37,205	6.585
2035	724,959	2,984,212	1.49%	0.87%	32,373	22,997	55,370	2.58%	1.80%	66,713	28,932	95,645	40,275	6.601
2036	685,180	3,166,753	1.27%	0.85%	32,755	16,178	48,933	2.39%	1.81%	69,699	22,341	92,040	43,107	6.541
2037	645,945	3,355,264	1.14%	0.83%	33,176	12,404	45,580	2.31%	1.82%	72,846	19,606	92,452	46,872	6.586
2038	606,916	3,550,260	1.06%	0.81%	33,650	10,333	44,043	2.26%	1.83%	76,168	17,876	94,044	50,002	6.505
2039	567,903	3,751,578	0.99%	0.79%	34,179	8,639	42,818	2.24%	1.84%	79,643	17,278	96,921	54,103	6.517
2040	528,254	3,960,270	0.94%	0.77%	34,753	7,630	42,384	2.24%	1.86%	83,277	17,056	100,333	57,950	6.464
2041	486,776	4,177,037	0.90%	0.76%	35,379	6,529	41,909	2.23%	1.87%	87,069	16,790	103,858	61,950	6.398
2042	443,926	4,400,890	0.86%	0.74%	36,073	5,816	41,889	2.23%	1.88%	91,053	16,964	108,017	66,128	6.324
2043	403,937	4,631,369	0.83%	0.73%	36,841	5,072	41,879	2.23%	1.89%	95,228	17,127	112,355	70,476	6.240
2044	365,661	4,869,826	0.81%	0.72%	37,672	4,314	42,384	2.23%	1.90%	99,576	17,277	116,853	74,469	6.105
2045	326,896	5,115,138	0.79%	0.71%	38,575	4,354	42,929	2.24%	1.91%	104,089	17,959	122,048	79,119	6.006
2046	290,352	5,365,555	0.77%	0.70%	39,565	3,960	43,524	2.24%	1.92%	108,756	18,102	126,858	83,333	5.857
2047	254,343	5,625,289	0.76%	0.69%	40,626	4,116	44,742	2.25%	1.93%	113,559	18,815	132,374	87,632	5.703
2048	218,593	5,892,300	0.74%	0.68%	41,776	3,667	45,443	2.25%	1.94%	118,512	18,944	137,456	92,013	5.545
2049	184,549	6,166,985	0.74%	0.68%	43,043	3,811	46,854	2.26%	1.95%	123,645	19,690	143,335	96,481	5.383
2050	153,998	6,446,177	0.73%	0.67%	44,431	3,961	48,393	2.26%	1.96%	128,954	19,807	148,760	100,368	5.185
2051	120,299	6,733,033	0.73%	0.67%	45,934	4,117	50,051	2.26%	1.96%	134,425	20,587	155,012	104,961	5.021
2052	104,361	7,028,427	0.74%	0.67%	47,536	4,993	52,529	2.25%	1.96%	140,066	20,685	160,751	108,222	4.794
2053	81,172	7,332,993	0.73%	0.66%	49,285	5,190	54,475	2.25%	1.97%	145,912	20,760	166,672	112,197	4.601
2054	63,826	7,643,400	0.73%	0.66%	51,171	5,395	56,566	2.25%	1.97%	151,965	20,939	172,004	115,437	4.384
2055	50,205	7,961,988	0.74%	0.66%	53,201	6,410	59,610	2.22%	1.97%	158,230	20,030	178,260	118,650	4.172
2056	38,812	8,290,643	0.74%	0.66%	55,344	6,664	62,007	2.21%	1.98%	164,712	19,158	183,870	121,862	3.967
2057	29,195	8,630,402	0.76%	0.67%	57,619	7,794	65,413	2.20%	1.98%	171,441	19,051	190,492	125,080	3.771
2058	22,087	8,981,087	0.76%	0.67%	60,035	8,103	68,138	2.18%	1.98%	178,437	18,006	196,443	128,305	3.581
2059	16,902	9,343,797	0.76%	0.67%	62,592	8,425	71,016	2.16%	1.98%	185,713	16,849	202,562	131,546	3.400
2060	12,843	9,719,925	0.76%	0.67%	65,286	8,759	74,046	2.15%	1.99%	193,286	15,572	208,859	134,813	3.226
Effective 1/1/14 in millions.					1,912,986	3,831,587	5,744,574			4,200,798	4,214,623	8,415,421	2,670,848	245,557

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