



# Cavanaugh Macdonald

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February 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 Proposed Cash Balance Plan**

Dear Alan:

As you requested, the exhibits attached to this letter provide a comparison of the estimated cost projections completed for HB 2194, HB 2545, and a cash balance plan (no bill introduced at this time). The cost estimates for HB 2194 and HB 2545 shown in these exhibits are the same as those provided in our letter dated January 23, 2012. The basic plan provisions for the cash balance plan design, on which our cost projections are based, are set out below. For purposes of the cost projections for the 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. In addition, all non-vested members (both active and inactive) of KPERS on January 1, 2014 are assumed to become Tier 3 members and have their employee account balance transferred to the cash balance plan (Tier 3 plan).

**Cash Balance Plan Design**

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

- The pay credit to the cash balance account is 10% of pay.
- The guaranteed interest credit is 5%. No discretionary dividends are assumed to be paid.
- 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

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- Upon termination of employment, a vested member may elect to withdraw their employee account balance, but will forfeit any future benefit payable from the plan. If the member leaves their employee contributions in the System, they may retire upon reaching normal retirement age.
- When the member retires at normal retirement age, the member can elect to receive up to 30% of the account balance 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 5% interest rate and a mortality table selected by the Board.
- 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 ten (10) 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 the 10% pay credit. All pay credits to the account shall cease upon 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 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 cash balance plan design.

#### **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 cash balance plan 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 HB 2545 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 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 interest crediting rate is set at 5% in the plan design for the cash balance plan so there is no need for an assumption for the interest crediting rate, i.e. 5% is used in projecting future benefit amounts. However, if the plan design is modified to allow the Board of Trustees to grant a "dividend" under certain circumstances, the actual interest crediting rate may be more than 5% and an assumption would be needed to anticipate the long term interest crediting rate. The appropriate assumption will be dependent on the specific provisions regarding when dividends may be credited to members' accounts.

The cost projections for the proposed cash balance plan assume that all vested members will elect to leave their employee account balance in the cash balance plan when they terminate employment and receive benefits upon reaching 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, would impact the cost projections. In addition, the assumption for the portion of the retirement benefit paid as a lump sum at retirement was set to 30% of the account balance.

All three plan designs studied are defined benefit plans and it is assumed that the new tier would be combined with the existing KPERS tiers 1 and 2 in one system with one trust. As such, the future benefit payments for Tier 3 members are projected in the actuarial valuation along with those for Tiers 1 and 2 members and one overall employer contribution rate is developed, 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 cash balance plan are reflected in the attached exhibits which show the expected employer contribution rate under each plan design by year (Exhibits A1 and A2) and the estimated dollar amount of contributions in each future year (Exhibits B1 and B2). All projections assume all actuarial assumptions 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. 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 cash balance plan.

Based on the 8% assumed rate of return and the plan design features of a 5% interest crediting rate and 5% interest rate used for the annuity conversion factors, the long term normal cost of the cash balance plan is about 5%, which is less than the employee contribution rate of 6%. If a different assumed rate of return were used, or the interest crediting rate and/or annuity conversion interest rate were higher, the normal cost of the cash balance plan would increase. While to our knowledge there is nothing to legally prohibit the employee contribution rate from being greater than the plan's normal cost rate, it is a policy decision that needs to be addressed by the Legislature.

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 results for all three 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 cash balance plan do not provide the same amount of retirement benefits. This, in turn, has an impact on the cost of the plans. 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, how changes in the benefit structure may ultimately impact employment patterns cannot be known at this time and, therefore, has not 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, Tier 3 benefits are provided in a cash balance plan as described in this letter. Only a 5% interest credit has been reflected in the cost projections provided. If additional credits or dividends may be granted, it will generally increase the cost of the plan. There are no other benefit changes reflected in future years.



- 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 cash balance plan 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.

Please feel free to call us to discuss this further if you wish.

Sincerely,

Handwritten signature of Patrice Beckham.

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

Handwritten signature of 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 Cash Balance Plan  
 State/School Group

Fiscal Year	Total Payroll (\$M)	HB 2194 vs HB 2545			HB 2194 vs Cash Balance (5%)			HB 2545 vs Cash Balance (5%)		
		HB 2194	HB 2545	Employer Contribution Rate	HB 2194	Cash Balance	Employer Contribution Rate	HB 2545	Cash Balance	Employer Contribution Rate
2012	\$ 4,465.19	8.77%	8.77%	8.77%	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%	9.37%	9.37%	9.37%
2014	4,742.86	10.27%	13.44%	10.27%	10.27%	10.27%	10.27%	13.44%	10.27%	10.27%
2015	4,889.77	11.27%	13.61%	11.27%	11.27%	11.27%	11.27%	13.61%	11.27%	11.27%
2016	5,048.36	12.37%	14.82%	12.37%	12.37%	12.37%	12.37%	14.82%	12.37%	12.37%
2017	5,217.25	13.77%	14.79%	13.77%	13.77%	13.57%	13.77%	14.79%	13.57%	13.57%
2018	5,396.09	14.46%	14.65%	14.46%	14.46%	13.54%	14.46%	14.65%	13.54%	13.54%
2019	5,585.80	14.67%	14.74%	14.67%	14.67%	13.58%	14.67%	14.74%	13.58%	13.58%
2020	5,786.83	14.80%	14.79%	14.80%	14.80%	13.53%	14.80%	14.79%	13.53%	13.53%
2021	5,999.32	14.85%	14.84%	14.85%	14.85%	13.41%	14.85%	14.84%	13.41%	13.41%
2022	6,223.41	14.84%	14.89%	14.84%	14.84%	13.27%	14.84%	14.89%	13.27%	13.27%
2023	6,458.61	14.81%	14.92%	14.81%	14.81%	13.11%	14.81%	14.92%	13.11%	13.11%
2024	6,704.71	14.76%	14.93%	14.76%	14.76%	12.95%	14.76%	14.93%	12.95%	12.95%
2025	6,962.16	14.70%	14.93%	14.70%	14.70%	12.77%	14.70%	14.93%	12.77%	12.77%
2026	7,231.45	14.62%	14.93%	14.62%	14.62%	12.59%	14.62%	14.93%	12.59%	12.59%
2027	7,512.93	14.54%	14.91%	14.54%	14.54%	12.38%	14.54%	14.91%	12.38%	12.38%
2028	7,806.93	14.45%	14.88%	14.45%	14.45%	12.18%	14.45%	14.88%	12.18%	12.18%
2029	8,113.92	14.34%	14.83%	14.34%	14.34%	11.96%	14.34%	14.83%	11.96%	11.96%
2030	8,433.95	14.21%	14.77%	14.21%	14.21%	11.72%	14.21%	14.77%	11.72%	11.72%
2031	8,767.29	14.08%	14.67%	14.08%	14.08%	11.44%	14.08%	14.67%	11.44%	11.44%
2032	9,114.66	13.90%	14.53%	13.90%	13.90%	11.10%	13.90%	14.53%	11.10%	11.10%
2033	9,476.23	5.43%	6.70%	5.43%	5.43%	3.32%	6.70%	6.70%	3.32%	3.32%
2034	9,852.28	3.95%	5.38%	3.95%	3.95%	1.90%	5.38%	5.38%	1.90%	1.90%
2035	10,243.64	2.42%	4.00%	2.42%	2.42%	0.45%	4.00%	4.00%	0.45%	0.45%
2036	10,650.79	1.38%	3.07%	1.38%	1.38%	0.00%	3.07%	3.07%	0.00%	0.00%
2037	11,073.56	0.90%	2.68%	0.90%	0.90%	0.00%	2.68%	2.68%	0.00%	0.00%
2038	11,513.15	0.58%	2.43%	0.58%	0.58%	0.00%	2.43%	2.43%	0.00%	0.00%
2039	11,970.93	0.41%	2.32%	0.41%	0.41%	0.00%	2.32%	2.32%	0.00%	0.00%
2040	12,448.09	0.33%	2.28%	0.33%	0.33%	0.00%	2.28%	2.28%	0.00%	0.00%
2041	12,947.04	0.29%	2.30%	0.29%	0.29%	0.00%	2.30%	2.30%	0.00%	0.00%
2042	13,469.39	0.29%	2.33%	0.29%	0.29%	0.00%	2.33%	2.33%	0.00%	0.00%
2043	14,014.53	0.29%	2.38%	0.29%	0.29%	0.00%	2.38%	2.38%	0.00%	0.00%
2044	14,581.39	0.31%	2.43%	0.31%	0.31%	0.00%	2.43%	2.43%	0.00%	0.00%
2045	15,170.09	0.34%	2.48%	0.34%	0.34%	0.00%	2.48%	2.48%	0.00%	0.00%
2046	15,780.74	0.37%	2.54%	0.37%	0.37%	0.00%	2.54%	2.54%	0.00%	0.00%
2047	16,410.26	0.40%	2.58%	0.40%	0.40%	0.00%	2.58%	2.58%	0.00%	0.00%
2048	17,057.88	0.42%	2.64%	0.42%	0.42%	0.00%	2.64%	2.64%	0.00%	0.00%
2049	17,727.69	0.46%	2.67%	0.46%	0.46%	0.00%	2.67%	2.67%	0.00%	0.00%
2050	18,423.67	0.48%	2.73%	0.48%	0.48%	0.00%	2.73%	2.73%	0.00%	0.00%
2051	19,147.45	0.52%	2.76%	0.52%	0.52%	0.00%	2.76%	2.76%	0.00%	0.00%
2052	19,899.69	0.54%	2.81%	0.54%	0.54%	0.00%	2.81%	2.81%	0.00%	0.00%
2053	20,682.16	0.56%	2.85%	0.56%	0.56%	0.00%	2.85%	2.85%	0.00%	0.00%
2054	21,496.61	0.59%	2.89%	0.59%	0.59%	0.00%	2.89%	2.89%	0.00%	0.00%
2055	22,344.49	0.61%	2.92%	0.61%	0.61%	0.00%	2.92%	2.92%	0.00%	0.00%
2056	23,227.14	0.63%	2.95%	0.63%	0.63%	0.00%	2.95%	2.95%	0.00%	0.00%
2057	24,145.92	0.65%	2.97%	0.65%	0.65%	0.00%	2.97%	2.97%	0.00%	0.00%
2058	25,102.38	0.68%	2.99%	0.68%	0.68%	0.00%	2.99%	2.99%	0.00%	0.00%
2059	26,098.07	0.69%	3.02%	0.69%	0.69%	0.00%	3.02%	3.02%	0.00%	0.00%
2060	27,134.62	0.71%	3.04%	0.71%	0.71%	0.00%	3.04%	3.04%	0.00%	0.00%

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



Exhibit A2  
 KPERS Contribution Rate Projections under HB 2194, HB 2545, and Cash Balance Plan  
 Local Group

Fiscal Year	Total Payroll (\$M)	HB 2194 vs HB 2545			HB 2194 vs Cash Balance (5%)			HB 2545 vs Cash Balance (5%)			
		Employer Contribution Rate	HB 2194	HB 2545	Employer Contribution Rate	Cash Balance	HB 2194	Employer Contribution Rate	Cash Balance	HB 2545	Employer Contribution Rate
2012	1,678.75	7.34%	7.34%	7.34%	7.34%	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%	7.94%	7.94%	7.94%	7.94%
2014	1,771.74	8.65%	8.65%	8.91%	8.65%	8.12%	8.65%	8.12%	8.91%	8.12%	8.12%
2015	1,834.05	9.12%	9.12%	9.47%	9.12%	8.45%	9.12%	8.45%	9.47%	8.45%	8.45%
2016	1,893.42	9.00%	9.00%	9.45%	9.00%	8.19%	9.00%	8.19%	9.45%	8.19%	8.19%
2017	1,955.65	9.00%	9.00%	9.53%	9.00%	8.10%	9.00%	8.10%	9.53%	8.10%	8.10%
2018	2,020.46	9.00%	9.00%	9.60%	9.00%	8.00%	9.00%	8.00%	9.60%	8.00%	8.00%
2019	2,087.94	8.99%	8.99%	9.67%	8.99%	7.90%	8.99%	7.90%	9.67%	7.90%	7.90%
2020	2,158.09	8.98%	8.98%	9.72%	8.98%	7.80%	8.98%	7.80%	9.72%	7.80%	7.80%
2021	2,231.91	8.98%	8.98%	9.80%	8.98%	7.70%	8.98%	7.70%	9.80%	7.70%	7.70%
2022	2,309.17	8.98%	8.98%	9.87%	8.98%	7.60%	8.98%	7.60%	9.87%	7.60%	7.60%
2023	2,389.76	8.98%	8.98%	9.93%	8.98%	7.51%	8.98%	7.51%	9.93%	7.51%	7.51%
2024	2,474.65	8.97%	8.97%	9.99%	8.97%	7.41%	8.97%	7.41%	9.99%	7.41%	7.41%
2025	2,563.71	8.98%	8.98%	10.04%	8.98%	7.32%	8.98%	7.32%	10.04%	7.32%	7.32%
2026	2,656.71	8.97%	8.97%	10.10%	8.97%	7.22%	8.97%	7.22%	10.10%	7.22%	7.22%
2027	2,753.93	8.97%	8.97%	10.14%	8.97%	7.12%	8.97%	7.12%	10.14%	7.12%	7.12%
2028	2,856.33	8.96%	8.96%	10.16%	8.96%	7.01%	8.96%	7.01%	10.16%	7.01%	7.01%
2029	2,963.32	8.94%	8.94%	10.19%	8.94%	6.90%	8.94%	6.90%	10.19%	6.90%	6.90%
2030	3,075.51	8.93%	8.93%	10.20%	8.93%	6.77%	8.93%	6.77%	10.20%	6.77%	6.77%
2031	3,192.38	8.91%	8.91%	10.18%	8.91%	6.61%	8.91%	6.61%	10.18%	6.61%	6.61%
2032	3,313.68	3.65%	3.65%	5.05%	3.65%	1.80%	3.65%	1.80%	5.05%	1.80%	1.80%
2033	3,440.20	2.75%	2.75%	4.20%	2.75%	0.93%	2.75%	0.93%	4.20%	0.93%	0.93%
2034	3,571.81	1.82%	1.82%	3.32%	1.82%	0.02%	1.82%	0.02%	3.32%	0.02%	0.02%
2035	3,709.17	1.49%	1.49%	3.04%	1.49%	0.00%	1.49%	0.00%	3.04%	0.00%	0.00%
2036	3,851.93	1.27%	1.27%	2.85%	1.27%	0.00%	1.27%	0.00%	2.85%	0.00%	0.00%
2037	4,001.21	1.14%	1.14%	2.77%	1.14%	0.00%	1.14%	0.00%	2.77%	0.00%	0.00%
2038	4,157.18	1.06%	1.06%	2.71%	1.06%	0.00%	1.06%	0.00%	2.71%	0.00%	0.00%
2039	4,319.48	0.99%	0.99%	2.68%	0.99%	0.00%	0.99%	0.00%	2.68%	0.00%	0.00%
2040	4,488.52	0.94%	0.94%	2.67%	0.94%	0.00%	0.94%	0.00%	2.67%	0.00%	0.00%
2041	4,663.81	0.90%	0.90%	2.66%	0.90%	0.00%	0.90%	0.00%	2.66%	0.00%	0.00%
2042	4,846.82	0.86%	0.86%	2.65%	0.86%	0.00%	0.86%	0.00%	2.65%	0.00%	0.00%
2043	5,037.31	0.83%	0.83%	2.65%	0.83%	0.00%	0.83%	0.00%	2.65%	0.00%	0.00%
2044	5,235.49	0.81%	0.81%	2.65%	0.81%	0.00%	0.81%	0.00%	2.65%	0.00%	0.00%
2045	5,442.03	0.79%	0.79%	2.66%	0.79%	0.00%	0.79%	0.00%	2.66%	0.00%	0.00%
2046	5,656.91	0.77%	0.77%	2.67%	0.77%	0.00%	0.77%	0.00%	2.67%	0.00%	0.00%
2047	5,879.63	0.76%	0.76%	2.68%	0.76%	0.00%	0.76%	0.00%	2.68%	0.00%	0.00%
2048	6,110.89	0.74%	0.74%	2.70%	0.74%	0.00%	0.74%	0.00%	2.70%	0.00%	0.00%
2049	6,351.53	0.74%	0.74%	2.70%	0.74%	0.00%	0.74%	0.00%	2.70%	0.00%	0.00%
2050	6,602.17	0.73%	0.73%	2.72%	0.73%	0.00%	0.73%	0.00%	2.72%	0.00%	0.00%
2051	6,862.33	0.73%	0.73%	2.74%	0.73%	0.00%	0.73%	0.00%	2.74%	0.00%	0.00%
2052	7,132.79	0.74%	0.74%	2.75%	0.74%	0.00%	0.74%	0.00%	2.75%	0.00%	0.00%
2053	7,414.16	0.73%	0.73%	2.77%	0.73%	0.00%	0.73%	0.00%	2.77%	0.00%	0.00%
2054	7,707.23	0.73%	0.73%	2.77%	0.73%	0.00%	0.73%	0.00%	2.77%	0.00%	0.00%
2055	8,012.19	0.74%	0.74%	2.79%	0.74%	0.00%	0.74%	0.00%	2.79%	0.00%	0.00%
2056	8,329.45	0.74%	0.74%	2.81%	0.74%	0.00%	0.74%	0.00%	2.81%	0.00%	0.00%
2057	8,659.60	0.76%	0.76%	2.81%	0.76%	0.00%	0.76%	0.00%	2.81%	0.00%	0.00%
2058	9,003.17	0.76%	0.76%	2.83%	0.76%	0.00%	0.76%	0.00%	2.83%	0.00%	0.00%
2059	9,360.70	0.76%	0.76%	2.84%	0.76%	0.00%	0.76%	0.00%	2.84%	0.00%	0.00%
2060	9,732.77	0.76%	0.76%	2.85%	0.76%	0.00%	0.76%	0.00%	2.85%	0.00%	0.00%

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



**Exhibit B1**  
**KPERs Cost Projections under HB 2194, HB 2545, and Cash Balance Plan**  
 State/School Group

Fiscal Year	Total Payroll (\$M)	HB 2194 vs HB 2545			HB 2194 vs Cash Balance (5%)			HB 2545 vs Cash Balance (5%)		
		Employer Contribution Amount (\$M)	Difference	Present Value of Difference	Employer Contribution Amount (\$M)	Difference	Present Value of Difference	Employer Contribution Amount (\$M)	Difference	Present Value of Difference
2012	\$ 4,465.19	\$ 391.60	\$ -	\$ -	\$ 391.60	\$ -	\$ -	\$ 391.60	\$ -	\$ -
2013	4,609.30	431.89	431.89	-	431.89	431.89	-	431.89	431.89	-
2014	4,742.86	487.09	637.46	150.37	487.09	487.09	-	637.46	150.37	(124.05)
2015	4,889.77	551.08	875.61	324.53	551.08	551.08	-	875.61	324.53	(87.56)
2016	5,048.36	624.48	123.70	87.49	624.48	624.48	-	123.70	87.49	(87.49)
2017	5,217.25	707.98	65.54	41.61	707.98	707.98	-	65.54	41.61	(41.61)
2018	5,396.09	780.44	9.90	6.00	780.44	780.44	(49.73)	9.90	6.00	(30.16)
2019	5,583.80	819.50	823.56	4.06	819.50	758.57	(60.92)	823.56	4.06	(34.21)
2020	5,786.83	856.63	856.13	(0.49)	856.63	782.79	(73.83)	856.13	(0.49)	(38.38)
2021	5,999.32	890.84	890.20	(0.64)	890.84	804.64	(86.21)	890.20	(0.64)	(41.50)
2022	6,223.41	923.50	926.50	3.00	923.50	826.07	(97.43)	926.50	3.00	(43.43)
2023	6,458.61	956.42	963.37	6.95	956.42	847.03	(109.39)	963.37	6.95	(45.14)
2024	6,704.71	989.41	1,001.19	11.78	989.41	868.32	(121.09)	1,001.19	11.78	(46.27)
2025	6,962.16	1,023.12	1,039.68	16.56	1,023.12	888.76	(134.36)	1,039.68	16.56	(47.54)
2026	7,231.45	1,057.31	1,079.54	22.23	1,057.31	910.20	(147.11)	1,079.54	22.23	(48.20)
2027	7,512.93	1,092.03	1,119.90	27.87	1,092.03	930.33	(161.70)	1,119.90	27.87	(49.05)
2028	7,806.93	1,127.87	1,161.97	34.10	1,127.87	950.70	(177.16)	1,161.97	34.10	(49.76)
2029	8,113.92	1,163.67	1,203.48	39.81	1,163.67	970.81	(192.86)	1,203.48	39.81	(50.16)
2030	8,433.95	1,198.79	1,245.30	46.51	1,198.79	988.54	(210.25)	1,245.30	46.51	(50.65)
2031	8,767.29	1,234.26	1,285.93	51.66	1,234.26	1,002.97	(231.29)	1,285.93	51.66	(51.57)
2032	9,114.66	1,266.68	1,324.29	57.60	1,266.68	1,012.12	(254.57)	1,324.29	57.60	(52.55)
2033	9,476.23	1,298.85	1,366.32	67.47	1,298.85	1,020.38	(278.47)	1,366.32	67.47	(53.14)
2034	9,852.28	1,331.15	1,409.87	78.72	1,331.15	1,028.31	(302.84)	1,409.87	78.72	(53.82)
2035	10,243.64	1,363.41	1,458.87	95.46	1,363.41	1,036.31	(327.10)	1,458.87	95.46	(54.45)
2036	10,650.79	1,395.61	1,513.56	117.95	1,395.61	1,044.31	(351.30)	1,513.56	117.95	(55.08)
2037	11,073.15	1,427.86	1,573.89	146.03	1,427.86	1,052.31	(375.58)	1,573.89	146.03	(55.66)
2038	11,513.15	1,460.11	1,639.89	179.78	1,460.11	1,060.31	(400.80)	1,639.89	179.78	(56.25)
2039	11,970.93	1,492.36	1,711.52	219.16	1,492.36	1,068.31	(426.01)	1,711.52	219.16	(56.81)
2040	12,448.09	1,524.61	1,798.89	274.28	1,524.61	1,076.31	(451.58)	1,798.89	274.28	(57.34)
2041	12,947.04	1,556.86	1,892.39	335.53	1,556.86	1,084.31	(477.04)	1,892.39	335.53	(57.83)
2042	13,469.39	1,589.11	2,001.99	412.88	1,589.11	1,092.31	(502.80)	2,001.99	412.88	(58.29)
2043	14,014.53	1,621.36	2,127.89	506.53	1,621.36	1,100.31	(528.04)	2,127.89	506.53	(58.72)
2044	14,581.39	1,653.61	2,272.89	619.28	1,653.61	1,108.31	(553.58)	2,272.89	619.28	(59.11)
2045	15,170.09	1,685.86	2,438.89	753.03	1,685.86	1,116.31	(578.99)	2,438.89	753.03	(59.44)
2046	15,780.74	1,718.11	2,627.89	909.78	1,718.11	1,124.31	(604.20)	2,627.89	909.78	(59.72)
2047	16,410.26	1,750.36	2,842.89	1,092.53	1,750.36	1,132.31	(629.24)	2,842.89	1,092.53	(60.00)
2048	17,057.88	1,782.61	3,087.89	1,305.28	1,782.61	1,140.31	(654.04)	3,087.89	1,305.28	(60.25)
2049	17,727.69	1,814.86	3,362.89	1,548.03	1,814.86	1,148.31	(678.58)	3,362.89	1,548.03	(60.48)
2050	18,423.67	1,847.11	3,667.89	1,820.78	1,847.11	1,156.31	(702.84)	3,667.89	1,820.78	(60.68)
2051	19,147.45	1,879.36	4,002.89	2,123.53	1,879.36	1,164.31	(726.78)	4,002.89	2,123.53	(60.85)
2052	19,899.69	1,911.61	4,377.89	2,457.28	1,911.61	1,172.31	(750.34)	4,377.89	2,457.28	(61.00)
2053	20,682.16	1,943.86	4,792.89	2,839.03	1,943.86	1,180.31	(773.54)	4,792.89	2,839.03	(61.14)
2054	21,496.61	1,976.11	5,247.89	3,270.78	1,976.11	1,188.31	(796.34)	5,247.89	3,270.78	(61.25)
2055	22,344.49	2,008.36	5,732.89	3,751.53	2,008.36	1,196.31	(818.74)	5,732.89	3,751.53	(61.34)
2056	23,227.14	2,040.61	6,247.89	4,282.28	2,040.61	1,204.31	(840.74)	6,247.89	4,282.28	(61.41)
2057	24,145.92	2,072.86	6,792.89	4,864.03	2,072.86	1,212.31	(862.34)	6,792.89	4,864.03	(61.46)
2058	25,102.38	2,105.11	7,377.89	5,486.78	2,105.11	1,220.31	(883.54)	7,377.89	5,486.78	(61.50)
2059	26,098.07	2,137.36	8,002.89	6,150.53	2,137.36	1,228.31	(904.34)	8,002.89	6,150.53	(61.52)
2060	27,134.62	2,169.61	8,677.89	6,864.28	2,169.61	1,236.31	(924.74)	8,677.89	6,864.28	(61.54)
<b>Total</b>	<b>\$ 33,039.06</b>	<b>\$ 22,140.94</b>	<b>\$ 10,898.12</b>	<b>\$ 1,065.89</b>	<b>\$ 22,140.94</b>	<b>\$ 17,014.84</b>	<b>\$ (5,126.10)</b>	<b>\$ 33,039.06</b>	<b>\$ 17,014.84</b>	<b>\$ (16,024.22)</b>
<b>Present Value at 8% as of July 1, 2011</b>	<b>\$ 9,383.42</b>	<b>\$ 8,317.52</b>	<b>\$ 1,065.89</b>	<b>\$ 1,065.89</b>	<b>\$ 8,317.52</b>	<b>\$ 7,388.42</b>	<b>\$ (929.10)</b>	<b>\$ 9,383.42</b>	<b>\$ 7,388.42</b>	<b>\$ (1,994.99)</b>

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**Exhibit B2**  
**KPERS Cost Projections under HB 2194, HB 2545, and Cash Balance Plan**  
**Local Group**

Fiscal Year	Total Payroll (\$M)	HB 2194 vs HB 2545			HB 2194 vs Cash Balance (5%)			HB 2545 vs Cash Balance (5%)		
		Employer Contribution Amount (\$M)	Difference	Present Value of Difference	Employer Contribution Amount (\$M)	Difference	Present Value of Difference	Employer Contribution Amount (\$M)	Difference	Present Value of Difference
2012	\$ 1,678.75	\$ 123.22	\$ -	\$ -	\$ 123.22	\$ -	\$ -	\$ 123.22	\$ -	\$ -
2013	1,726.92	137.12	137.12	137.12	137.12	137.12	137.12	137.12	137.12	(11.59)
2014	1,771.74	153.84	153.84	153.84	153.84	153.84	153.84	153.84	153.84	(14.37)
2015	1,834.05	167.26	173.71	173.71	167.26	154.89	154.89	173.71	154.89	(18.81)
2016	1,893.42	170.45	178.89	178.89	170.45	155.15	155.15	178.89	155.15	(23.75)
2017	1,955.65	176.01	186.32	186.32	176.01	158.37	158.37	186.32	158.37	(27.95)
2018	2,020.46	181.84	193.92	193.92	181.84	161.59	161.59	193.92	161.59	(32.33)
2019	2,087.94	187.74	201.89	201.89	187.74	164.94	164.94	201.89	164.94	(36.95)
2020	2,158.09	193.71	209.84	209.84	193.71	168.25	168.25	209.84	168.25	(41.59)
2021	2,231.91	200.50	218.70	218.70	200.50	171.78	171.78	218.70	171.78	(46.92)
2022	2,309.17	207.43	227.86	227.86	207.43	175.52	175.52	227.86	175.52	(52.34)
2023	2,389.76	214.53	237.32	237.32	214.53	179.57	179.57	237.32	179.57	(57.75)
2024	2,474.65	222.08	247.11	247.11	222.08	183.46	183.46	247.11	183.46	(63.64)
2025	2,563.71	230.12	257.51	257.51	230.12	187.67	187.67	257.51	187.67	(69.84)
2026	2,656.71	238.33	268.22	268.22	238.33	191.94	191.94	268.22	191.94	(76.29)
2027	2,753.93	247.00	279.24	279.24	247.00	195.96	195.96	279.24	195.96	(83.28)
2028	2,856.33	255.91	290.34	290.34	255.91	200.30	200.30	290.34	200.30	(90.04)
2029	2,963.32	265.02	302.01	302.01	265.02	204.35	204.35	302.01	204.35	(97.67)
2030	3,075.51	274.64	313.69	313.69	274.64	208.07	208.07	313.69	208.07	(105.61)
2031	3,192.38	284.39	324.92	324.92	284.39	211.03	211.03	324.92	211.03	(113.88)
2032	3,313.68	293.93	336.30	336.30	293.93	214.53	214.53	336.30	214.53	(122.50)
2033	3,440.20	304.35	348.35	348.35	304.35	218.70	218.70	348.35	218.70	(131.51)
2034	3,571.81	315.68	361.11	361.11	315.68	222.08	222.08	361.11	222.08	(140.81)
2035	3,709.17	327.93	374.24	374.24	327.93	225.91	225.91	374.24	225.91	(150.41)
2036	3,851.93	341.14	387.76	387.76	341.14	229.96	229.96	387.76	229.96	(160.33)
2037	4,001.21	355.45	401.71	401.71	355.45	234.35	234.35	401.71	234.35	(170.58)
2038	4,157.18	370.86	416.11	416.11	370.86	239.07	239.07	416.11	239.07	(181.18)
2039	4,319.49	386.82	430.99	430.99	386.82	244.14	244.14	430.99	244.14	(192.13)
2040	4,488.52	404.23	446.36	446.36	404.23	249.59	249.59	446.36	249.59	(203.44)
2041	4,663.81	423.08	462.24	462.24	423.08	255.43	255.43	462.24	255.43	(215.11)
2042	4,846.82	442.51	478.67	478.67	442.51	261.67	261.67	478.67	261.67	(227.15)
2043	5,037.31	462.64	495.66	495.66	462.64	268.33	268.33	495.66	268.33	(239.58)
2044	5,233.49	483.48	513.24	513.24	483.48	275.43	275.43	513.24	275.43	(252.39)
2045	5,442.03	505.05	531.48	531.48	505.05	282.99	282.99	531.48	282.99	(265.60)
2046	5,656.91	527.37	550.39	550.39	527.37	290.96	290.96	550.39	290.96	(279.23)
2047	5,879.63	551.44	570.00	570.00	551.44	299.30	299.30	570.00	299.30	(293.20)
2048	6,110.89	576.33	590.34	590.34	576.33	308.07	308.07	590.34	308.07	(307.50)
2049	6,351.53	603.08	611.51	611.51	603.08	317.23	317.23	611.51	317.23	(322.15)
2050	6,602.17	631.67	633.99	633.99	631.67	326.78	326.78	633.99	326.78	(337.18)
2051	6,862.33	662.11	657.66	657.66	662.11	336.71	336.71	657.66	336.71	(352.56)
2052	7,132.79	693.53	682.61	682.61	693.53	347.00	347.00	682.61	347.00	(368.30)
2053	7,414.16	726.94	708.88	708.88	726.94	357.76	357.76	708.88	357.76	(384.41)
2054	7,707.23	762.43	736.00	736.00	762.43	368.99	368.99	736.00	368.99	(400.88)
2055	8,012.19	800.00	764.94	764.94	800.00	380.67	380.67	764.94	380.67	(417.71)
2056	8,329.45	839.76	794.76	794.76	839.76	392.80	392.80	794.76	392.80	(434.88)
2057	8,659.60	881.71	826.53	826.53	881.71	405.39	405.39	826.53	405.39	(452.39)
2058	9,003.17	926.94	860.34	860.34	926.94	418.54	418.54	860.34	418.54	(470.24)
2059	9,360.70	975.57	896.11	896.11	975.57	432.26	432.26	896.11	432.26	(488.44)
2060	9,732.77	1,027.70	933.11	933.11	1,027.70	446.54	446.54	933.11	446.54	(507.00)
Total	\$ 5,744.57	\$ 9,437.77	\$ 3,693.20	\$ 3,693.20	\$ 9,437.77	\$ 3,569.90	\$ (2,174.67)	\$ 9,437.77	\$ 3,569.90	\$ (5,867.87)
Present Value at 8% as of July 1, 2011	\$ 2,061.12	\$ 2,425.98	\$ 364.86	\$ 364.86	\$ 2,061.12	\$ 1,688.62	\$ (372.50)	\$ 2,425.98	\$ 1,688.62	\$ (737.36)

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

2/23/2012



Exhibit CI

Kansas Public Employee Retirement System  
 Comparison of State/School Group Employer Contributions for Retirement Benefits  
 HB 2194 versus Cash Balance Plan (5%)

FYE	Payroll (\$M)			Employer				Cash Balance Plan <sup>(1)</sup>				Total Cost <sup>(2)</sup>	Difference <sup>(3)</sup>
	Tier 1/2	Tier 3	Total	Rate-DB	Normal Cost Rate	Normal Cost	UAL Payment <sup>(2)</sup>	Rate-DB	DB Normal Cost Rate	DB Normal Cost	UAL Payment <sup>(2)</sup>		
2012	4,465.186	0.000	4,465.186	3.31%	3.31%	147,582	244,014	8.77%	3.31%	147,582	244,014	391,597	0.000
2013	4,609.301	0.000	4,609.301	9.37%	3.31%	152,346	279,546	9.37%	3.31%	152,346	279,546	431,892	0.000
2014	4,742.859	0.000	4,742.859	10.27%	3.31%	156,760	330,332	10.27%	3.31%	156,760	330,332	487,092	0.000
2015	4,706.273	183.492	4,889.765	11.27%	2.31%	112,949	438,128	11.27%	2.02%	98,831	452,246	551,077	0.000
2016	4,507.134	541.224	5,048.358	12.37%	2.22%	111,974	512,508	12.37%	1.85%	93,408	531,074	624,482	0.000
2017	4,332.724	884.524	5,217.248	13.57%	2.12%	110,810	597,171	13.57%	1.69%	88,359	619,622	707,981	0.000
2018	4,171.368	1,224.718	5,396.086	14.46%	2.04%	110,248	670,194	13.54%	1.31%	70,766	659,941	730,707	(49,735)
2019	4,017.143	1,568.662	5,585.805	14.67%	1.96%	109,544	709,956	13.58%	1.14%	63,701	694,874	758,575	(60,925)
2020	3,868.916	1,917.913	5,786.829	14.80%	1.88%	108,967	747,658	13.53%	0.98%	56,547	726,247	782,794	(73,831)
2021	3,729.151	2,270.169	6,000.320	14.85%	1.81%	108,533	782,311	13.41%	0.82%	49,323	755,314	804,637	(86,207)
2022	3,597.727	2,625.683	6,223.410	14.84%	1.74%	108,232	815,267	13.27%	0.67%	41,918	784,150	826,068	(97,431)
2023	3,469.577	2,989.037	6,458.614	14.81%	1.67%	107,754	848,662	13.11%	0.52%	33,886	813,140	847,026	(109,390)
2024	3,343.442	3,361.269	6,704.711	14.76%	1.61%	107,739	881,669	12.95%	0.39%	26,212	842,112	868,324	(121,085)
2025	3,218.508	3,743.649	6,962.157	14.70%	1.55%	107,601	915,524	12.77%	0.27%	18,495	870,270	888,765	(134,360)
2026	3,095.688	4,133.766	7,229.454	14.62%	1.49%	107,825	949,490	12.59%	0.16%	11,330	898,207	910,200	(147,115)
2027	2,976.817	4,536.108	7,512.925	14.54%	1.44%	107,840	984,193	12.38%	0.04%	3,238	927,095	930,333	(161,701)
2028	2,861.609	4,943.319	7,804.928	14.45%	1.39%	108,283	1,019,585	12.18%	0.00%	0.000	950,703	950,703	(177,165)
2029	2,748.479	5,365.437	8,113.916	14.34%	1.34%	108,856	1,054,809	11.96%	0.00%	0.000	970,809	970,809	(192,857)
2030	2,636.015	5,797.930	8,433.945	14.21%	1.29%	109,127	1,089,666	11.72%	0.00%	0.000	988,540	988,540	(210,252)
2031	2,523.441	6,243.849	8,767.290	14.08%	1.26%	110,296	1,123,967	11.44%	0.00%	0.000	1,002,970	1,002,970	(231,293)
2032	2,410.718	6,703.938	9,114.656	13.90%	1.22%	110,946	1,155,738	11.10%	0.00%	0.000	1,012,119	1,012,119	(254,565)
2033	2,297.300	7,178.932	9,476.232	5.43%	1.18%	111,686	402,740	3.32%	0.00%	0.000	314,924	314,924	(199,501)
2034	2,182.241	7,670.035	9,852.276	3.95%	1.15%	113,289	275,864	1.90%	0.00%	0.000	186,774	186,774	(202,379)
2035	2,065.928	8,177.707	10,243.635	2.42%	1.11%	114,119	134,192	0.45%	0.00%	0.000	46,451	46,451	(201,859)
2036	1,948.113	8,702.679	10,650.792	1.38%	1.08%	115,059	31,952	0.00%	0.00%	0.000	0.000	0.000	(147,011)
2037	1,827.085	9,246.479	11,073.564	0.90%	1.05%	116,807	(16,610)	0.00%	0.00%	0.000	0.000	0.000	(100,196)
2038	1,703.396	9,809.757	11,513.153	0.58%	1.02%	117,663	(50,658)	0.00%	0.00%	0.000	0.000	0.000	(67,005)
2039	1,578.269	10,392.660	11,970.929	0.41%	1.00%	119,635	(70,628)	0.00%	0.00%	0.000	0.000	0.000	(49,006)
2040	1,452.370	10,995.722	12,448.092	0.33%	0.97%	120,583	(79,668)	0.00%	0.00%	0.000	0.000	0.000	(40,915)
2041	1,329.445	11,617.595	12,947.040	0.29%	0.95%	122,573	(85,450)	0.00%	0.00%	0.000	0.000	0.000	(37,123)
2042	1,213.354	12,256.040	13,469.394	0.29%	0.93%	124,704	(86,204)	0.00%	0.00%	0.000	0.000	0.000	(38,499)
2043	1,102.458	12,912.073	14,014.531	0.29%	0.90%	126,828	(85,489)	0.00%	0.00%	0.000	0.000	0.000	(41,340)
2044	992.920	13,588.470	14,581.390	0.31%	0.89%	130,404	(84,572)	0.00%	0.00%	0.000	0.000	0.000	(45,832)
2045	885.412	14,284.677	15,170.089	0.34%	0.88%	132,859	(81,918)	0.00%	0.00%	0.000	0.000	0.000	(50,941)
2046	783.139	14,997.606	15,780.745	0.37%	0.86%	135,338	(77,326)	0.00%	0.00%	0.000	0.000	0.000	(58,012)
2047	680.796	15,729.466	16,410.262	0.40%	0.85%	139,484	(73,846)	0.00%	0.00%	0.000	0.000	0.000	(65,638)
2048	573.131	16,484.746	17,057.877	0.42%	0.83%	142,147	(69,937)	0.00%	0.00%	0.000	0.000	0.000	(72,210)
2049	465.713	17,261.980	17,727.693	0.46%	0.83%	146,504	(65,592)	0.00%	0.00%	0.000	0.000	0.000	(80,912)
2050	373.175	18,050.490	18,423.665	0.48%	0.82%	151,141	(62,640)	0.00%	0.00%	0.000	0.000	0.000	(88,501)
2051	299.011	18,848.441	19,147.452	0.52%	0.82%	156,139	(57,442)	0.00%	0.00%	0.000	0.000	0.000	(98,696)
2052	235.082	19,664.612	19,900.694	0.54%	0.81%	161,199	(53,729)	0.00%	0.00%	0.000	0.000	0.000	(107,469)
2053	178.915	20,503.240	20,682.155	0.56%	0.80%	166,240	(49,637)	0.00%	0.00%	0.000	0.000	0.000	(116,603)
2054	133.803	21,362.800	21,500.603	0.59%	0.81%	173,457	(47,293)	0.00%	0.00%	0.000	0.000	0.000	(126,164)
2055	101.111	22,243.377	22,344.488	0.61%	0.80%	178,755	(42,455)	0.00%	0.00%	0.000	0.000	0.000	(136,300)
2056	76.276	23,150.859	23,227.135	0.63%	0.80%	186,424	(39,486)	0.00%	0.00%	0.000	0.000	0.000	(146,938)
2057	56.488	24,089.437	24,145.925	0.65%	0.80%	194,278	(36,219)	0.00%	0.00%	0.000	0.000	0.000	(158,059)
2058	41.446	25,060.935	25,102.381	0.68%	0.81%	202,313	(32,633)	0.00%	0.00%	0.000	0.000	0.000	(169,680)
2059	30.655	26,067.418	26,098.073	0.69%	0.81%	210,629	(31,318)	0.00%	0.00%	0.000	0.000	0.000	(179,311)
2060	22.730	27,111.890	27,134.620	0.71%	0.81%	219,227	(27,133)	0.00%	0.00%	0.000	0.000	0.000	(192,092)
			6,553,694			15,587,248	22,140,942			1,112,701	15,902,136	17,014,837	(5,126,104)

<sup>(1)</sup> Effective 1/1/14  
<sup>(2)</sup> 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 February 23, 2012.  
 All assumptions, including the 8% 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 Cash Balance Plan (5%)

FYE	Payroll (\$M)			Employer Rate-DB	Normal Cost Rate	UAL		Total Cost <sup>(2)</sup>	Cash Balance Plan <sup>(1)</sup>				Total Cost <sup>(2)</sup>	Difference <sup>(3)</sup>
	Tier 1/2	Tier 3				Rate-DB	Normal Cost Rate		Employer Rate-DB	DB Normal Cost Rate	DB Normal Cost Rate	UAL Payment <sup>(1)</sup>		
2012	1,678.751	0.000	0.000	7.34%	2.94%	49,355	73,865	123,220	7.34%	2.94%	49,355	73,865	123,220	0.000
2013	1,726.922	0.000	0.000	7.94%	2.94%	50,772	86,346	137,118	7.94%	2.94%	50,772	86,346	137,118	0.000
2014	1,777.741	0.000	0.000	8.65%	1.96%	34,906	118,931	153,837	8.12%	1.77%	26,125	118,220	144,345	(9,492)
2015	1,682.855	151,199	0.000	9.12%	1.86%	34,106	133,152	167,259	8.45%	1.27%	23,207	131,685	154,892	(12,367)
2016	1,601.267	292,153	0.000	9.00%	1.76%	33,371	137,084	170,455	8.19%	1.09%	20,715	134,433	155,148	(15,307)
2017	1,531.885	423,760	0.000	9.00%	1.69%	33,049	142,958	176,006	8.10%	0.95%	18,345	139,829	158,374	(17,633)
2018	1,468.854	551,608	0.000	9.00%	1.62%	32,730	149,110	181,840	8.00%	0.81%	16,319	145,271	161,590	(20,250)
2019	1,411.513	676,427	0.000	8.99%	1.55%	32,396	155,343	187,739	7.90%	0.67%	13,983	150,958	164,941	(22,797)
2020	1,357,016	801,074	0.000	8.98%	1.49%	32,073	161,641	193,714	7.80%	0.54%	11,576	156,677	168,253	(25,460)
2021	1,306,765	925,141	0.000	8.98%	1.42%	31,768	168,732	200,500	7.70%	0.41%	9,076	162,706	171,781	(28,719)
2022	1,259,029	1,050,142	0.000	8.98%	1.36%	31,472	175,959	207,431	7.60%	0.28%	6,484	169,031	175,516	(31,915)
2023	1,211,644	1,178,114	0.000	8.98%	1.31%	31,237	183,294	214,531	7.51%	0.16%	3,919	175,647	179,566	(34,965)
2024	1,166,580	1,308,070	0.000	8.97%	1.25%	31,040	191,043	222,083	7.41%	0.05%	1,327	182,134	183,461	(38,621)
2025	1,122,814	1,440,897	0.000	8.98%	1.21%	30,916	199,200	230,117	7.32%	0.00%	0.000	187,668	187,668	(42,448)
2026	1,079,538	1,577,175	0.000	8.97%	1.16%	30,845	207,489	238,335	7.22%	0.00%	0.000	191,937	191,937	(46,397)
2027	1,036,739	1,717,192	0.000	8.97%	1.12%	30,815	216,184	246,999	7.12%	0.00%	0.000	195,962	195,962	(51,037)
2028	996,305	1,860,024	0.000	8.96%	1.08%	30,834	225,079	255,913	7.01%	0.00%	0.000	200,305	200,305	(55,608)
2029	956,653	2,006,671	0.000	8.94%	1.04%	30,915	234,103	265,017	6.90%	0.00%	0.000	204,346	204,346	(60,672)
2030	918,258	2,157,256	0.000	8.93%	1.01%	31,056	243,581	274,637	6.77%	0.00%	0.000	208,073	208,073	(66,564)
2031	880,111	2,312,267	0.000	8.91%	0.98%	31,239	253,156	284,395	6.61%	0.00%	0.000	211,035	211,035	(73,360)
2032	841,490	2,472,188	0.000	8.95%	0.95%	31,460	263,017	294,479	6.46%	0.00%	0.000	214,035	214,035	(80,544)
2033	802,890	2,637,309	0.000	8.92%	0.92%	31,727	273,266	305,000	6.30%	0.00%	0.000	217,035	217,035	(88,206)
2034	763,519	2,808,290	0.000	8.89%	0.90%	32,032	284,017	316,050	6.13%	0.00%	0.000	220,035	220,035	(96,215)
2035	724,599	2,984,212	0.000	8.87%	0.87%	32,375	295,266	327,641	5.96%	0.00%	0.000	223,035	223,035	(104,436)
2036	685,180	3,166,753	0.000	8.85%	0.85%	32,755	307,017	339,270	5.79%	0.00%	0.000	226,035	226,035	(112,757)
2037	645,945	3,355,264	0.000	8.83%	0.83%	33,176	319,266	351,000	5.62%	0.00%	0.000	229,035	229,035	(121,178)
2038	606,916	3,550,260	0.000	8.81%	0.81%	33,650	332,017	363,760	5.45%	0.00%	0.000	232,035	232,035	(129,699)
2039	567,903	3,751,578	0.000	8.99%	0.79%	34,179	345,266	377,000	5.28%	0.00%	0.000	235,035	235,035	(138,220)
2040	528,254	3,960,270	0.000	8.94%	0.77%	34,753	359,017	390,760	5.11%	0.00%	0.000	238,035	238,035	(146,741)
2041	486,776	4,177,037	0.000	8.90%	0.76%	35,379	373,266	404,520	4.94%	0.00%	0.000	241,035	241,035	(155,262)
2042	445,926	4,400,890	0.000	8.86%	0.74%	36,073	388,017	419,280	4.77%	0.00%	0.000	244,035	244,035	(163,783)
2043	405,937	4,631,369	0.000	8.83%	0.73%	36,841	403,266	434,040	4.60%	0.00%	0.000	247,035	247,035	(172,304)
2044	365,661	4,869,826	0.000	8.81%	0.72%	37,672	419,017	449,800	4.43%	0.00%	0.000	250,035	250,035	(180,825)
2045	326,896	5,115,138	0.000	8.79%	0.71%	38,575	435,266	465,560	4.26%	0.00%	0.000	253,035	253,035	(189,346)
2046	290,352	5,366,555	0.000	8.77%	0.70%	39,565	452,017	481,320	4.09%	0.00%	0.000	256,035	256,035	(197,867)
2047	254,343	5,623,289	0.000	8.76%	0.69%	40,626	469,266	498,080	3.92%	0.00%	0.000	259,035	259,035	(206,388)
2048	218,593	5,892,300	0.000	8.74%	0.68%	41,776	487,017	515,840	3.75%	0.00%	0.000	262,035	262,035	(214,909)
2049	184,549	6,166,985	0.000	8.74%	0.68%	43,043	505,266	534,600	3.58%	0.00%	0.000	265,035	265,035	(223,430)
2050	155,998	6,446,177	0.000	8.73%	0.67%	44,431	524,017	553,360	3.41%	0.00%	0.000	268,035	268,035	(231,951)
2051	129,299	6,733,033	0.000	8.73%	0.67%	45,934	543,266	573,120	3.24%	0.00%	0.000	271,035	271,035	(240,472)
2052	104,361	7,028,427	0.000	8.74%	0.67%	47,536	563,017	593,880	3.07%	0.00%	0.000	274,035	274,035	(249,000)
2053	81,172	7,332,993	0.000	8.73%	0.66%	49,285	583,266	615,640	2.90%	0.00%	0.000	277,035	277,035	(257,521)
2054	63,826	7,643,400	0.000	8.73%	0.66%	51,171	604,017	638,400	2.73%	0.00%	0.000	280,035	280,035	(266,042)
2055	50,205	7,961,988	0.000	8.74%	0.66%	53,201	626,266	662,160	2.56%	0.00%	0.000	283,035	283,035	(274,563)
2056	38,812	8,290,643	0.000	8.74%	0.66%	55,344	649,017	686,720	2.39%	0.00%	0.000	286,035	286,035	(283,084)
2057	29,195	8,630,402	0.000	8.76%	0.67%	57,619	673,266	711,280	2.22%	0.00%	0.000	289,035	289,035	(291,605)
2058	22,087	8,981,087	0.000	8.76%	0.67%	60,035	700,017	738,040	2.05%	0.00%	0.000	292,035	292,035	(300,126)
2059	16,902	9,343,797	0.000	8.76%	0.67%	62,592	729,266	766,800	1.88%	0.00%	0.000	295,035	295,035	(308,647)
2060	12,843	9,719,925	0.000	8.76%	0.67%	65,286	761,017	806,560	1.71%	0.00%	0.000	300,035	300,035	(317,168)
						1,912,986	3,831,587	5,744,574			251,402	3,318,500	3,569,903	(2,174,671)

<sup>(1)</sup> Effective 1/1/14  
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