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February 14, 2012

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

Re: Additional Cost Projections on HB 2545

Dear Alan:

The initial actuarial cost study performed for HB 2545 and SB 338, which contain the proposed plan design for KPERS Tier 3 that was recommended by the KPERS Study Commission, was based on the current KPERS' actuarial assumptions including the 8% assumed rate of return. As we indicated in our letter dated January 23, 2012, which contained the original cost projections under HB 2545, the legislative bill had not yet been introduced when that study was prepared. Therefore, our cost projections were based on our understanding of the key plan provisions of the Study Commission recommendations for Tier 3 members. The legislation has since been introduced as HB 2545 and SB 338, and there are a few differences in the bills as introduced and the provisions used in the cost projections. However, they are not material in our opinion. The same basic plan provisions from the original study were used for purposes of the projections included in this study. They include both a cash balance plan (referred to as the employer annuity account) and a pure defined contribution (DC) plan (referred to as the employee directed account) for Tier 3 members. The effective date of the new plan design will be July 1, 2013, and all employees hired on or after that date will be members of KPERS Tier 3. In addition, all non-vested members (both active and inactive) of KPERS on January 1, 2014 will become Tier 3 members. The two bills provide for nonvested members transferring to Tier 3 to elect whether to have their employee contributions and interest transferred to their employer-annuity account or their employee-directed account. However, to be conservative with respect to the impact of the new plan, their employee account balance is assumed to be transferred to the employee directed portion of the Tier 3 plan.

Plan Design

A summary of basic plan provisions included in our cost study follows:

Cash Balance Plan (Employer Annuity Account)

- Employer credits to the account will be based on the employee's years of service beginning with a 1% credit for the first year of service and increasing 0.50% per year until a 5% credit is granted when the employee has completed 8 or more years of service.

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Sn KPERS Select
Attachment 4

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- The guaranteed interest credit will be 0%, but the intent of the plan design is to credit the member's employer annuity account with interest credits that mirror the actual earnings of the KPERS portfolio.
- 100% vesting after five (5) years of service.
- Normal retirement age is age 65 and 5 years of service.
- No employee contributions. Employer contributions are determined as part of the annual actuarial valuation.
- Once vested, a member cannot withdraw the employer annuity account until reaching the normal retirement age of 65. There is no early retirement provision. Upon reaching normal retirement age, the balance in the employer annuity account is converted into monthly income, based on the form of payment elected by the member. The annuity amount is determined by the annuity conversion factors which are based on the interest rates published by the Pension Benefit Guaranty Corporation (PBGC) for distress terminations and the 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 employer annuity account shall be credited with the regular employer credit. All credits to the employer annuity 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 to an ultimate cap of 1.2% over a four year period beginning with FY 2014.

The provisions of HB 2545 eliminate the statutory cap on employer contributions, effective July 1, 2013. Therefore, this is reflected under the cost projections for HB 2545 in this study.

Senate Substitute for HB 2194

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

Defined Contribution Plan (Employee Directed Account)

- Employee contribution rate is 6% of pay and is deposited into the employee directed account. The employee will direct all investments in this account and investment earnings and losses will directly accrue to the account balance.
- The employee is always 100% vested in the employee directed account.



- Upon termination of employment the employee can elect to roll the funds in his or her account balance to another qualified plan or an IRA.
- Upon retirement, the employee directed account balance is payable at the direction of the employee in either a lump sum, or periodic payments as determined by the employee. There is no guaranteed payment for the lifetime of the member unless the employee purchases an annuity.

Actuarial Assumptions and Methods

The same actuarial methods and assumptions that were used in the December 31, 2010 actuarial valuation were used in this cost study with the exception of the assumed rate of investment return, which was set at 6.0% (discussed further below) and the retirement rates. Because retirement eligibility requirements are different than those in the current plan, as well as the benefits provided, the retirement patterns in the future are expected to change. Cavanaugh Macdonald selected retirement rates 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 employer funded portion of HB 2545 is a cash balance plan, which is a defined benefit plan. As such, the contribution rate to fund the benefits for Tier 3 members will be based on the results of the actuarial valuation, not the employer credit to the employer annuity account as defined in the legislation. The projection of future benefit amounts for Tier 3 members requires the use of two additional assumptions that are not necessary in the valuation of projected benefits for Tier 1 and 2 members. They are:

- (1) interest crediting rate and
- (2) annuity conversion factors (which require a postretirement interest rate and a mortality table).

The initial cost projections, included in our January 23, 2012, letter, were based on an investment return assumption of 8% and assumed actual returns in future years of 8%. Under HB 2545, the actual return on the KPERS portfolio is credited to the employer annuity account, so the assumed interest crediting rate in the initial projections was 8%, which is the assumed rate of return for KPERS.

We were subsequently asked to provide additional cost projections reflecting a change in the underlying investment return assumption for KPERS to 6%. This letter contains the results of the cost study using a 6% assumed rate of return and a 6% actual return on assets in each future year of the projection period (i.e., actual experience is the same as the assumption) to project both liabilities and costs under the current KPERS plan design (baseline), HB 2194, and HB 2545.

Any change to actuarial assumptions is the responsibility of the KPERS' Board of Trustees. A significant amount of time and thorough study would be completed before the Board would change the current actuarial assumptions. This is particularly true with respect to the investment return assumption, due to its significant impact on valuation results. A change in the assumed rate of return from 8% to 6% represents a 25% decrease in that assumption. Given the sensitivity of the investment return assumption, a decrease or increase in the return assumption of that magnitude would be unusual in the absence of either a significant change in the underlying asset allocation of the KPERS portfolio or a fundamental change in economic conditions that is expected to be permanent or in effect for a long time. Although the cost study request presented to us did not indicate which type of circumstance was assumed to be the basis for the 6% return assumption, an understanding of the reason for the change is relevant due to actuarial standards of practice.

Under actuarial standards of practice, all economic assumptions used in the valuation must be consistent. A change in KPERS' asset allocation could occur independently of broader economic conditions, and in

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that case, a change in the investment return assumption may not require any adjustment to other economic actuarial assumptions. However, the request did not suggest that a change in KPERS' asset allocation is to be assumed. Therefore, it appears that request was posed in order to understand the impact of a fundamental shift in economic factors, leading to much lower returns over the next 50 years.

In that case, other economic assumptions, such as the salary increase and payroll growth assumptions, must be consistent with that economic context. For this reason, other assumptions were also changed so the resulting set of economic assumptions would be consistent with the lower investment return assumption of 6%. Specifically, the salary increase assumption was lowered at all durations by 1.50% and the payroll growth assumption was lowered from 4.0% to 2.5%. In addition, the post-retirement interest rate used for the annuity factors which convert the dollar amount in the employer annuity account into monthly income under HB 2545 was reduced from 6.5% to 5.25%.

A sensitivity analysis typically includes results under a range of both higher and lower investment experience. As requested, this sensitivity analysis models only the impact of significantly lower investment experience. Under this scenario with lower returns, HB 2545 fares relatively better than the current plan design or HB 2194, which are both traditional defined benefit plans. This happens because the benefits under HB 2545 are reduced as a result of the lower returns, so increased contributions are needed only to fund the unfunded actuarial liability (UAL) and not to cover higher ongoing costs. Conversely, if higher investment returns were modeled, costs under HB 2545 would not decrease as much as the current plan design or HB 2194 since a portion of the higher returns would be used to increase member benefits (actual returns are credited to the employer annuity account) rather than pay down the UAL.

Please note that these alternate sets of assumptions do not represent a recommendation for a change in assumptions by either KPERS or Cavanaugh Macdonald Consulting, LLC. These projections were created as a response to a specific request to provide cost projections under a 6% investment return assumption. Therefore, the projected cost analyses provided with this letter should be viewed in the context in which they were requested.

HB 2545 requires the use of the interest rates published by the Pension Benefit Guaranty Corporation for distress terminations be used to determine the annuity conversion factors. The PBGC distress termination interest rates vary every month and are dependent on market conditions. Tying the annuity conversion rate to the PBGC distress termination rates increases the uncertainty about what rates will actually be used to convert a member's employer annuity account into monthly income and requires that an actuarial assumption be used to estimate future experience. In the initial projections for HB 2545, this assumption was set to 6.5% when the investment return assumption was 8%. For purposes of this cost study, the post-retirement interest rate was lowered to 5.25% to create an assumption that is consistent with the salary increase assumption discussed earlier and the assumed investment return of 6%. The mortality table used for the annuity conversion factor, which is used to convert the employer annuity account into monthly income, remained the RP 2000 Mortality Table projected to 2035, using Projection Scale AA, with a 50/50 male/female blend as was used in the prior study.

Because the employer annuity account is a cash balance plan, which is a defined benefit plan, the projected benefit payments for Tier 3 members will simply be projected in the actuarial valuation along with those for Tiers 1 and 2 members. The valuation will develop one overall employer contribution rate, which will include 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 will be unchanged other than reflecting the new benefit structure for Tier 3 members.



The amortization period used in the cost study remained at a closed 22 year period starting on December 31, 2010. If the investment return assumption was changed to 6%, then both the normal cost rate and the UAL would increase significantly, resulting in a significant spike in the actuarial contribution rate. Given that this spike occurs, the Board of Trustees might either extend the current amortization period beyond 22 years for the entire UAL or amortize only the increase in the UAL due to the assumption change over a separate longer period such as thirty years. Either action would modify the cost estimates provided herein. However, as such action is dependent on future events, including Board action, no change is reflected in these cost estimates. As with the prior cost projections provided, the amortization period was set to an open ten year period in 2030 for all cost projections with this letter to mitigate the impact of the time lag between the valuation date and the fiscal year in which the contribution rate is effective.

Results

The cost impact of the plan design in HB 2545 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 employer costs over a long time period is necessary to evaluate the long term impact of the proposed changes. The cost estimates for the current plan, HB 2194, and HB 2545, all of which are based on a 6% investment return assumption, are reflected in the attached exhibits. The expected employer contribution rate and dollar amount is shown for each future year, assuming all actuarial assumptions, including a 6% rate of return, are met in the future.

The comparison of employer costs is shown on two bases: (i) Senate Substitute for HB 2194 vs HB 2545 and (ii) Current Plan vs HB 2545. A 6% assumption for investment return and a 6% actual rate of return are used to generate the liabilities and costs for all three of the plan designs. Please note that dollar amounts of employer contributions shown are future dollar amounts calculated using the estimated employer contribution rate and projected payroll in future years. The far right hand column on Exhibits A1 and A2 also shows the present value of the difference in employer contributions by year and in the aggregate.

Disclaimers, Caveats, and Limitations

The numerical charts and graphs that comprise this study are based primarily upon the December 31, 2010 valuation results, the actuarial assumptions used in the valuation, and the projection model prepared by the System's actuary, Cavanaugh Macdonald Consulting, LLC. Other significant items in the projections are noted below:

- Investment return in future years is assumed to be 6% on a market value basis, unless otherwise indicated.
- New salary increase assumptions and payroll growth assumptions were developed to create a consistent set of economic assumptions.
- All demographic assumptions regarding mortality, disability, retirement, and termination of employment are assumed to hold true in the future. Please note that the current 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, 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.

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- Plan provisions for Tiers 1 and 2 are modified in accordance with Senate Substitute for HB 2194 where indicated. Tier 3 benefits under HB 2545 are as described in this letter. 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 the current plan design and HB 2194 (with consideration to changes in the statutory caps in the legislation). The statutory cap is removed under HB 2545.
- 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. 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 receiving 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 are available to provide supplementary information or explanation if needed. Please let us know if you have any questions or wish to discuss the content of the letter.

Sincerely,

Patrice Beckham

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

Brent A. Banister

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

Exhibit A1



Scenario 2: HB 2194 vs HB 2545 With 6% Investment Return Assumption
State/School Group

(1) Fiscal Year	(2) Total Payroll	(3) Employer Contribution Rate		(6) Employer Contribution Amount (\$M)			(8) Present Value of Difference
		(4) HB 2194	(4) HB 2545	(5) HB 2194	(6) HB 2545	(7) Difference	
2012	\$ 4,465.19	8.77%	8.77%	\$ 391.60	\$ 391.60	\$ -	\$ -
2013	4,609.30	9.37%	9.37%	431.89	431.89	-	-
2014	4,742.86	10.27%	20.19%	487.09	957.65	470.56	406.77
2015	4,889.77	11.27%	20.61%	551.08	1,007.83	456.75	372.49
2016	5,048.36	12.37%	22.14%	624.48	1,117.51	493.03	379.31
2017	5,217.25	13.57%	22.26%	707.98	1,161.18	453.20	328.93
2018	5,396.09	14.77%	22.02%	797.00	1,188.11	391.11	267.80
2019	5,585.80	15.97%	22.00%	892.05	1,229.06	337.01	217.70
2020	5,786.83	17.17%	21.91%	993.60	1,267.62	274.02	166.99
2021	5,999.32	18.37%	21.81%	1,102.08	1,308.64	206.57	118.76
2022	6,223.41	19.57%	21.70%	1,217.92	1,350.71	132.79	72.02
2023	6,458.61	20.77%	21.59%	1,341.45	1,394.27	52.82	27.02
2024	6,704.71	21.97%	21.48%	1,473.02	1,439.85	(33.18)	(16.01)
2025	6,962.16	23.17%	21.35%	1,613.13	1,486.41	(126.72)	(57.70)
2026	7,231.45	24.37%	21.24%	1,762.31	1,535.64	(226.67)	(97.38)
2027	7,512.93	25.57%	21.13%	1,921.05	1,587.12	(333.94)	(135.34)
2028	7,806.93	26.77%	21.03%	2,089.91	1,641.66	(448.26)	(171.39)
2029	8,113.92	27.97%	20.94%	2,269.46	1,699.26	(570.20)	(205.67)
2030	8,433.95	29.17%	20.88%	2,460.18	1,761.20	(698.98)	(237.85)
2031	8,767.29	30.37%	20.84%	2,662.63	1,827.51	(835.12)	(268.09)
2032	9,114.66	31.57%	20.85%	2,877.50	1,900.55	(976.94)	(295.87)
2033	9,476.23	17.09%	9.24%	1,619.70	875.66	(744.04)	(212.58)
2034	9,852.28	14.46%	7.39%	1,424.73	728.50	(696.23)	(187.66)
2035	10,243.64	11.63%	5.50%	1,191.29	563.26	(628.03)	(159.70)
2036	10,650.79	9.53%	4.25%	1,015.24	452.32	(562.92)	(135.04)
2037	11,073.56	8.39%	3.76%	928.70	415.90	(512.80)	(116.05)
2038	11,513.15	7.55%	3.46%	869.49	398.35	(471.14)	(100.59)
2039	11,970.93	7.00%	3.34%	837.58	400.03	(437.55)	(88.13)
2040	12,448.09	6.61%	3.32%	823.25	412.71	(410.55)	(78.01)
2041	12,947.04	6.33%	3.33%	819.73	431.16	(388.57)	(69.65)
2042	13,469.39	6.14%	3.35%	826.76	450.91	(375.85)	(63.56)
2043	14,014.53	5.99%	3.38%	839.19	473.10	(366.09)	(58.41)
2044	14,581.39	5.88%	3.40%	857.11	496.38	(360.73)	(54.29)
2045	15,170.09	5.80%	3.42%	879.85	519.52	(360.34)	(51.16)
2046	15,780.74	5.74%	3.45%	906.29	543.70	(362.59)	(48.57)
2047	16,410.26	5.71%	3.46%	936.67	567.13	(369.54)	(46.70)
2048	17,057.88	5.69%	3.47%	971.06	591.66	(379.40)	(45.23)
2049	17,727.69	5.68%	3.48%	1,006.67	616.90	(389.77)	(43.84)
2050	18,423.67	5.68%	3.49%	1,045.66	643.22	(402.44)	(42.70)
2051	19,147.45	5.68%	3.49%	1,088.29	669.02	(419.27)	(41.97)
2052	19,899.69	5.69%	3.51%	1,132.72	697.62	(435.10)	(41.09)
2053	20,682.16	5.71%	3.51%	1,180.70	725.52	(455.18)	(40.55)
2054	21,496.61	5.71%	3.53%	1,228.47	758.85	(469.62)	(39.47)
2055	22,344.49	5.74%	3.54%	1,282.60	791.68	(490.92)	(38.92)
2056	23,227.14	5.75%	3.55%	1,336.71	823.89	(512.82)	(38.36)
2057	24,145.92	5.77%	3.57%	1,392.89	862.39	(530.50)	(37.43)
2058	25,102.38	5.78%	3.58%	1,451.25	899.76	(551.49)	(36.71)
2059	26,098.07	5.80%	3.60%	1,514.60	938.76	(575.84)	(36.16)
2060	27,134.62	5.82%	3.62%	1,577.95	982.16	(595.79)	(35.30)
Total				\$ 59,652.59	\$ 45,415.35	\$ (14,237.24)	\$ (1,115.34)
Present Value at 6% as of July 1, 2011				\$ 17,889.09	\$ 16,773.75	\$ (1,115.34)	

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 Cavanaugh Macdonald dated February 14, 2012.
All assumptions, including the 6% investment return, are assumed to be met each year in the future.

2/14/2012

Exhibit A2



Scenario 2: HB 2194 vs HB 2545 With 6% Investment Return Assumption
Local Group

(1) Fiscal Year	(2) Total Payroll	(3) Employer Contribution Rate		(6) Employer Contribution Amount (\$M)			(8) Present Value of Difference
		(4) HB 2194	(4) HB 2545	(5) HB 2194	(6) HB 2545	(7) Difference	
2012	\$ 1,678.75	7.34%	7.34%	\$ 123.22	\$ 123.22	\$ -	\$ -
2013	1,726.92	7.94%	7.94%	137.12	137.12	-	-
2014	1,777.74	8.84%	14.11%	157.15	250.77	93.61	80.92
2015	1,834.05	9.84%	14.93%	180.47	273.81	93.34	76.12
2016	1,893.42	10.94%	15.24%	207.14	288.55	81.41	62.64
2017	1,955.65	12.14%	15.30%	237.42	299.23	61.82	44.87
2018	2,020.46	13.34%	15.36%	269.53	310.35	40.82	27.95
2019	2,087.94	14.54%	15.38%	303.59	321.07	17.48	11.29
2020	2,158.09	15.74%	15.40%	339.68	332.39	(7.29)	(4.44)
2021	2,231.91	16.94%	15.44%	378.08	344.67	(33.41)	(19.21)
2022	2,309.17	18.05%	15.49%	416.86	357.70	(59.16)	(32.09)
2023	2,389.76	18.35%	15.55%	438.47	371.56	(66.91)	(34.23)
2024	2,474.65	18.58%	15.60%	459.75	386.11	(73.64)	(35.54)
2025	2,563.71	18.72%	15.68%	480.05	401.86	(78.18)	(35.60)
2026	2,656.71	18.89%	15.75%	501.75	418.56	(83.19)	(35.74)
2027	2,753.93	19.07%	15.86%	525.22	436.79	(88.43)	(35.84)
2028	2,856.33	19.30%	15.97%	551.30	456.20	(95.10)	(36.36)
2029	2,963.32	19.59%	16.13%	580.64	477.90	(102.74)	(37.06)
2030	3,075.51	20.01%	16.32%	615.44	501.84	(113.60)	(38.66)
2031	3,192.38	20.61%	16.60%	657.97	529.97	(128.00)	(41.09)
2032	3,313.68	9.07%	7.64%	300.65	253.10	(47.55)	(14.40)
2033	3,440.20	7.43%	6.29%	255.53	216.32	(39.21)	(11.20)
2034	3,571.81	5.66%	4.86%	202.34	173.60	(28.75)	(7.75)
2035	3,709.17	5.23%	4.46%	194.14	165.59	(28.55)	(7.26)
2036	3,851.93	4.99%	4.20%	192.03	161.79	(30.24)	(7.25)
2037	4,001.21	4.94%	4.10%	197.59	163.96	(33.63)	(7.61)
2038	4,157.18	4.93%	4.03%	205.08	167.39	(37.69)	(8.05)
2039	4,319.48	4.97%	3.99%	214.69	172.19	(42.49)	(8.56)
2040	4,488.52	5.01%	3.95%	224.82	177.17	(47.65)	(9.05)
2041	4,663.81	5.04%	3.91%	235.01	182.30	(52.71)	(9.45)
2042	4,846.82	5.08%	3.86%	246.28	187.15	(59.13)	(10.00)
2043	5,037.31	5.11%	3.82%	257.19	192.63	(64.55)	(10.30)
2044	5,235.49	5.14%	3.78%	269.19	197.76	(71.44)	(10.75)
2045	5,442.03	5.17%	3.73%	281.33	203.01	(78.32)	(11.12)
2046	5,656.91	5.19%	3.69%	293.56	208.95	(84.61)	(11.33)
2047	5,879.63	5.22%	3.65%	306.96	214.43	(92.54)	(11.69)
2048	6,110.89	5.24%	3.61%	320.45	220.60	(99.85)	(11.90)
2049	6,351.53	5.27%	3.58%	334.67	227.55	(107.12)	(12.05)
2050	6,602.17	5.30%	3.55%	349.67	234.05	(115.62)	(12.27)
2051	6,862.33	5.32%	3.52%	364.74	241.37	(123.37)	(12.35)
2052	7,132.79	5.33%	3.50%	380.53	249.61	(130.92)	(12.36)
2053	7,414.16	5.37%	3.48%	397.89	258.12	(139.76)	(12.45)
2054	7,707.23	5.39%	3.46%	415.39	266.98	(148.41)	(12.47)
2055	8,012.19	5.40%	3.46%	432.97	276.94	(156.03)	(12.37)
2056	8,329.45	5.43%	3.45%	452.18	287.32	(164.86)	(12.33)
2057	8,659.60	5.45%	3.44%	472.30	298.07	(174.22)	(12.29)
2058	9,003.17	5.47%	3.45%	492.49	310.21	(182.27)	(12.13)
2059	9,360.70	5.49%	3.44%	513.60	321.94	(191.66)	(12.04)
2060	9,732.77	5.50%	3.44%	535.67	335.14	(200.52)	(11.88)
			Total	\$ 16,899.78	\$ 13,584.93	\$ (3,314.84)	\$ (396.76)
			Present Value at 6% as of July 1, 2011	\$ 5,051.16	\$ 4,654.40	\$ (396.76)	

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 14, 2012. All assumptions, including the 6% investment return, are assumed to be met each year in the future.

2/14/2012

Exhibit B1

Kansas Public Employee Retirement System
Comparison of State/School Group Employer Contributions for Retirement Benefits
Scenario 2: HB 2194 versus HB 2545 Under 6% Investment Return Assumption

FYE	Payroll			HB 2194					HB 2545 (1)					Difference (2)
	Tier 1/2	Tier 3	Rate/DB	Normal Cost Rate	Normal Cost (2)	UAL Payment (2)	Total Cost (2)	Employer Rate/DB	DB Normal Cost Rate	DB Normal Cost (2)	UAL Payment (2)	Total Cost (2)		
2012	4,465,186	0,000	8.77%	6.26%	279,612	111,985	391,597	8.77%	6.26%	147,582	244,014	391,597	0.000	
2013	4,609,301	0,000	9.37%	6.26%	288,637	143,255	431,892	9.37%	6.26%	152,346	279,546	431,892	0.000	
2014	4,742,859	0,000	10.27%	6.26%	297,000	190,922	487,922	20.19%	6.26%	297,000	660,653	957,653	470,561	
2015	4,706,273	183,492	11.27%	4.75%	232,368	318,708	551,077	20.61%	4.68%	228,891	778,940	1,007,831	456,754	
2016	4,507,134	541,224	12.37%	4.60%	232,328	392,153	624,482	22.14%	4.52%	227,989	889,521	1,117,510	493,028	
2017	4,332,724	884,524	13.57%	4.46%	232,805	475,175	707,981	22.26%	4.37%	227,810	933,366	1,161,176	453,195	
2018	4,171,368	1,224,718	14.77%	4.34%	234,342	562,650	797,002	22.02%	4.24%	228,687	959,424	1,188,111	391,109	
2019	4,017,143	1,568,662	15.97%	4.22%	235,867	655,186	892,053	22.00%	4.11%	229,764	999,300	1,229,064	337,011	
2020	3,868,916	1,917,913	17.17%	4.12%	238,244	755,355	993,599	21.91%	4.01%	231,780	1,035,842	1,267,622	274,024	
2021	3,729,151	2,270,169	18.37%	4.01%	240,706	861,369	1,102,075	21.81%	3.90%	234,165	1,074,478	1,308,643	206,568	
2022	3,597,727	2,625,683	19.57%	3.92%	244,061	973,860	1,217,921	21.70%	3.81%	237,341	1,113,368	1,350,709	132,788	
2023	3,469,577	2,989,037	20.77%	3.83%	247,418	1,094,036	1,341,454	21.59%	3.73%	240,763	1,153,509	1,394,272	52,817	
2024	3,343,442	3,361,269	21.97%	3.74%	250,858	1,222,167	1,473,025	21.48%	3.66%	245,069	1,194,779	1,439,849	(33,176)	
2025	3,218,508	3,743,649	23.17%	3.67%	259,747	1,357,841	1,613,132	21.35%	3.59%	249,936	1,236,479	1,486,415	(226,670)	
2026	3,095,688	4,135,766	24.37%	3.59%	264,620	1,502,558	1,762,305	21.24%	3.54%	255,668	1,279,967	1,535,635	(333,935)	
2027	2,976,817	4,536,108	25.57%	3.52%	264,620	1,656,435	1,921,055	21.13%	3.49%	261,840	1,325,280	1,587,120	(448,256)	
2028	2,861,609	4,945,319	26.77%	3.46%	270,241	1,819,673	2,089,915	21.03%	3.45%	266,891	1,372,458	1,639,261	(570,202)	
2029	2,748,479	5,365,437	27.97%	3.40%	276,167	1,993,295	2,269,462	20.94%	3.41%	272,891	1,422,370	1,699,261	(698,978)	
2030	2,636,015	5,797,930	29.17%	3.34%	281,990	2,178,192	2,460,182	20.88%	3.38%	285,263	1,475,941	1,761,204	(835,120)	
2031	2,523,441	6,243,849	30.37%	3.29%	288,715	2,373,911	2,662,626	20.84%	3.35%	294,107	1,533,399	1,827,506	(976,943)	
2032	2,410,718	6,703,938	31.57%	3.24%	295,677	2,581,820	2,877,497	20.85%	3.33%	303,666	1,596,888	1,900,534	(744,039)	
2033	2,297,300	7,178,932	32.77%	3.19%	302,506	3,117,196	3,424,392	20.82%	3.31%	313,722	1,671,204	2,000,943	(628,033)	
2034	2,182,241	7,670,035	33.97%	3.15%	310,442	3,114,292	3,424,735	20.81%	3.29%	324,560	1,761,204	2,125,764	(512,796)	
2035	2,065,928	8,177,707	35.17%	3.11%	318,531	3,181,531	3,493,062	20.80%	3.28%	335,848	1,865,941	2,252,793	(401,545)	
2036	1,948,113	8,702,679	36.37%	3.07%	327,195	3,258,041	3,585,236	20.79%	3.27%	347,941	1,977,204	2,405,145	(288,570)	
2037	1,827,085	9,246,479	37.57%	3.03%	335,154	3,344,489	3,689,643	20.78%	3.26%	360,532	2,097,204	2,587,406	(174,138)	
2038	1,703,396	9,809,757	38.77%	2.99%	344,489	3,444,000	3,808,489	20.77%	3.24%	373,022	2,230,204	2,800,226	(62,549)	
2039	1,578,269	10,392,660	40.00%	2.95%	355,155	3,555,155	3,930,310	20.76%	3.23%	386,866	2,375,204	2,962,092	(49,545)	
2040	1,452,370	10,995,722	41.23%	2.91%	365,161	3,651,161	4,051,321	20.75%	3.22%	401,502	2,525,204	3,136,724	(38,570)	
2041	1,329,445	11,617,595	42.46%	2.87%	375,647	3,756,447	4,176,892	20.74%	3.21%	416,919	2,685,204	3,320,143	(27,549)	
2042	1,213,354	12,256,040	43.69%	2.83%	387,660	4,310,102	4,307,762	20.73%	3.20%	432,057	2,855,204	3,513,299	(18,857)	
2043	1,102,458	12,912,073	44.92%	2.80%	399,132	4,440,083	4,440,083	20.72%	3.19%	449,272	3,035,204	3,715,471	(14,242)	
2044	992,920	13,588,470	46.15%	2.78%	412,382	4,447,332	4,447,332	20.71%	3.18%	467,218	3,225,204	3,885,414	(11,203)	
2045	885,412	14,284,677	47.38%	2.76%	426,265	4,535,586	4,535,586	20.70%	3.17%	484,624	3,425,204	4,065,138	(432,057)	
2046	783,139	14,997,606	48.61%	2.74%	440,757	4,626,339	4,626,339	20.69%	3.16%	504,251	3,635,204	4,259,381	(18,857)	
2047	680,796	15,729,466	49.84%	2.72%	455,853	4,720,090	4,720,090	20.68%	3.15%	524,899	3,855,204	4,467,624	(14,242)	
2048	573,131	16,484,746	51.07%	2.70%	472,973	4,816,841	4,816,841	20.67%	3.14%	543,899	4,085,204	4,685,167	(11,203)	
2049	465,713	17,261,980	52.30%	2.68%	489,024	4,916,592	4,916,592	20.66%	3.13%	565,493	4,315,204	4,915,167	(8,857)	
2050	373,175	18,050,490	53.53%	2.66%	507,693	5,019,343	5,019,343	20.65%	3.12%	587,952	4,555,204	5,155,167	(5,412)	
2051	299,011	18,848,441	54.76%	2.64%	527,271	5,124,094	5,124,094	20.64%	3.11%	609,662	4,805,204	5,405,167	(2,967)	
2052	235,882	19,664,612	56.00%	2.62%	547,670	5,230,845	5,230,845	20.63%	3.10%	633,938	5,065,204	5,665,167	(30,967)	
2053	178,915	20,503,240	57.23%	2.60%	568,510	5,339,596	5,339,596	20.62%	3.09%	659,847	5,335,204	5,935,167	(60,967)	
2054	133,803	21,362,806	58.46%	2.58%	590,020	5,450,347	5,450,347	20.61%	3.08%	683,609	5,610,204	6,210,167	(90,967)	
2055	101,111	22,243,377	59.69%	2.56%	614,497	5,563,098	5,563,098	20.60%	3.07%	711,235	5,895,204	6,500,167	(120,967)	
2056	76,276	23,150,859	60.92%	2.54%	639,896	5,677,849	5,677,849	20.59%	3.06%	737,947	6,190,204	6,800,167	(150,967)	
2057	56,488	24,089,437	62.15%	2.52%	666,096	5,793,600	5,793,600	20.58%	3.05%	768,223	6,505,204	7,115,167	(180,967)	
2058	41,446	25,060,935	63.38%	2.50%	693,160	5,911,351	5,911,351	20.57%	3.04%	799,353	6,830,204	7,440,167	(210,967)	
2059	30,655	26,067,418	64.61%	2.48%	723,831	6,031,102	6,031,102	20.56%	3.03%	831,757	7,165,204	7,785,167	(240,967)	
2060	22,730	27,111,890	65.84%	2.46%	753,053	6,152,853	6,152,853	20.55%	3.02%	865,481	7,510,204	8,140,167	(270,967)	
					18,796,719	40,855,872	59,652,590			20,244,383	116,679	43,415,348	(14,237,242)	

(1) Effective 1/1/14
(2) In millions.

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All assumptions, including the 6% investment return, are assumed to be met each year in the future.



Exhibit B2

Kansas Public Employee Retirement System
 Comparison of Local Employer Contributions for Retirement Benefits
 Scenario 2: HB 2194 versus HB 2545 Under 6% Investment Return Assumption

FYE	Payroll			HB 2194			HB 2545 (1)			Difference (2)			
	Tier 1/2	Tier 3	Rate-DB	Normal Cost Rate	Normal Cost (2)	UAL Payment (2)	Total Cost (2)	Employer Rate-DB	DB Normal Cost Rate		DB Normal Cost (2)	UAL Payment (2)	Total Cost (2)
2012	1,678,751	0.000	7.34%	5.66%	94,936	28,284	123,220	7.34%	5.66%	94,936	28,284	123,220	0.000
2013	1,726,922	0.000	7.94%	5.66%	97,660	39,457	137,118	7.94%	5.66%	97,660	39,457	137,118	0.000
2014	1,771,741	0.000	8.84%	4.14%	73,574	83,578	157,152	14.11%	4.07%	72,282	178,485	250,767	99,615
2015	1,682,855	151,199	9.84%	3.99%	73,206	107,265	180,471	14.93%	3.91%	71,693	202,113	273,806	99,335
2016	1,601,267	292,153	10.94%	3.86%	73,004	134,136	207,140	15.24%	3.77%	71,379	217,175	288,554	81,414
2017	1,531,885	423,760	12.14%	3.75%	73,306	164,110	237,415	15.30%	3.66%	71,595	227,637	299,232	61,817
2018	1,468,854	551,608	13.34%	3.65%	73,685	195,844	269,530	15.36%	3.56%	71,938	228,415	310,353	40,823
2019	1,411,513	676,427	14.54%	3.55%	74,133	229,454	303,586	15.38%	3.47%	72,398	248,674	321,071	17,485
2020	1,357,016	801,074	15.74%	3.46%	74,668	265,015	339,683	15.40%	3.38%	72,990	259,402	332,392	(7,291)
2021	1,306,765	925,141	16.94%	3.37%	75,305	302,780	378,085	15.44%	3.30%	73,718	270,953	344,671	(3,413)
2022	1,259,029	1,050,142	18.05%	3.22%	76,031	340,834	416,865	15.49%	3.23%	74,599	283,104	357,704	(59,161)
2023	1,211,644	1,178,114	18.35%	3.22%	76,897	361,570	438,468	15.55%	3.17%	75,707	295,852	371,559	(66,908)
2024	1,166,580	1,308,070	18.58%	3.15%	77,910	381,839	459,748	15.60%	3.11%	77,028	309,084	386,112	(73,636)
2025	1,122,814	1,440,897	18.72%	3.08%	79,083	400,964	480,047	15.68%	3.07%	78,579	323,284	401,863	(78,184)
2026	1,079,538	1,577,175	18.89%	3.03%	80,394	421,355	501,749	15.75%	3.02%	80,359	338,200	418,559	(83,190)
2027	1,036,739	1,717,192	19.07%	2.97%	81,834	443,383	525,217	15.86%	2.99%	82,356	354,431	436,787	(88,430)
2028	996,305	1,860,024	19.30%	2.92%	83,429	467,867	551,296	15.97%	2.96%	84,587	371,608	456,196	(95,100)
2029	956,653	2,006,671	19.51%	2.87%	85,174	495,468	580,642	16.13%	2.94%	87,038	390,862	477,901	(102,742)
2030	918,258	2,157,256	19.70%	2.83%	87,071	528,573	615,444	16.32%	2.92%	89,721	412,119	501,840	(113,603)
2031	880,111	2,312,267	20.61%	2.79%	89,091	568,882	657,973	16.60%	2.90%	92,614	437,356	529,970	(128,003)
2032	841,490	2,472,188	21.75%	2.75%	91,226	209,424	300,650	7.64%	2.89%	95,705	157,400	253,105	(47,545)
2033	802,890	2,637,309	22.68%	2.68%	93,499	162,033	255,532	6.29%	2.88%	99,009	117,311	216,320	(39,212)
2034	763,519	2,808,290	23.66%	2.62%	95,902	106,440	202,342	4.86%	2.87%	102,518	71,079	173,597	(28,745)
2035	724,959	2,984,212	24.65%	2.65%	98,443	95,697	194,140	4.46%	2.86%	106,245	59,347	165,592	(28,548)
2036	685,180	3,166,753	25.63%	2.60%	101,124	90,906	192,030	4.20%	2.86%	110,177	51,616	161,793	(30,237)
2037	645,945	3,355,264	26.96%	2.59%	103,959	93,628	197,587	4.10%	2.86%	114,341	49,615	163,956	(33,631)
2038	606,916	3,550,260	28.57%	2.57%	106,976	98,109	205,085	4.03%	2.86%	118,752	48,639	167,391	(37,694)
2039	567,903	3,751,578	29.51%	2.53%	110,135	104,531	214,666	3.99%	2.86%	123,383	48,810	172,193	(42,493)
2040	528,254	3,960,270	30.01%	2.50%	113,502	111,315	224,817	3.95%	2.86%	128,247	48,975	177,172	(47,646)
2041	486,776	4,177,037	30.04%	2.51%	117,016	117,994	235,011	3.91%	2.86%	133,329	48,970	182,299	(52,711)
2042	445,926	4,400,890	30.08%	2.49%	120,746	125,533	246,278	3.86%	2.86%	138,678	48,468	187,146	(59,132)
2043	405,937	4,631,369	31.11%	2.48%	124,707	132,481	257,188	3.82%	2.86%	144,276	48,358	192,634	(64,554)
2044	365,661	4,869,826	31.14%	2.46%	128,883	140,311	269,194	3.78%	2.86%	150,114	47,643	197,757	(71,437)
2045	326,896	5,115,138	31.17%	2.45%	133,303	148,023	281,326	3.73%	2.87%	156,208	46,801	203,010	(78,316)
2046	290,352	5,366,555	31.19%	2.44%	137,994	155,565	293,559	3.69%	2.87%	162,566	46,387	208,952	(84,606)
2047	254,543	5,625,289	31.24%	2.43%	142,922	164,042	306,964	3.65%	2.88%	169,152	45,273	214,426	(92,539)
2048	218,593	5,892,300	31.24%	2.42%	148,121	172,327	320,448	3.61%	2.88%	175,999	44,610	220,601	(99,847)
2049	184,549	6,166,985	31.24%	2.42%	153,650	181,019	334,669	3.58%	2.88%	183,089	44,461	227,550	(107,118)
2050	155,998	6,446,177	31.30%	2.42%	159,526	190,143	349,669	3.55%	2.89%	190,477	43,574	234,051	(115,618)
2051	129,299	6,733,033	31.33%	2.42%	165,737	199,008	364,745	3.52%	2.89%	198,141	43,233	241,374	(123,371)
2052	104,361	7,028,427	31.36%	2.41%	172,254	208,277	380,532	3.50%	2.89%	206,103	43,510	249,613	(130,919)
2053	81,172	7,332,993	31.37%	2.42%	179,170	218,718	397,888	3.48%	2.89%	214,380	43,744	258,124	(139,764)
2054	63,826	7,643,400	31.39%	2.42%	186,481	228,905	415,386	3.46%	2.89%	223,046	43,931	266,977	(148,409)
2055	50,205	7,961,988	31.40%	2.43%	194,208	238,763	432,972	3.45%	2.90%	232,073	44,868	276,941	(156,030)
2056	38,812	8,290,643	31.43%	2.43%	202,294	249,884	452,178	3.44%	2.90%	241,507	45,812	287,319	(164,859)
2057	29,195	8,630,402	31.43%	2.43%	210,779	261,520	472,299	3.44%	2.90%	251,313	46,762	298,075	(174,224)
2058	22,087	8,981,087	31.47%	2.44%	219,690	272,796	492,486	3.44%	2.91%	261,595	48,617	310,212	(182,275)
2059	16,902	9,343,797	31.49%	2.45%	229,035	284,565	513,601	3.44%	2.91%	272,325	49,612	321,937	(191,664)
2060	12,843	9,719,925	31.50%	2.45%	238,816	296,849	535,666	3.44%	2.92%	285,175	49,970	335,145	(200,521)
					5,880,510	11,019,265	16,899,775			6,541,094	7,043,841	13,584,935	(3,314,840)

(1) Effective 1/1/14
 (2) In millions.

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 All assumptions, including the 6% investment return, are assumed to be met each year in the future.



Exhibit A1



Scenario 2: Current Plan vs HB 2545 With 6% Investment Return Assumption
State/School Group

(1) Fiscal Year	(2) Total Payroll	(3) Employer Contribution Rate		(6) Employer Contribution Amount (\$M)			(8) Present Value of Difference
		(4) Current		(5) Current		(7) Difference	
		Plan	HB 2545	Plan	HB 2545		
2012	\$ 4,465.19	8.77%	8.77%	\$ 391.60	\$ 391.60	\$ -	\$ -
2013	4,609.30	9.37%	9.37%	431.89	431.89	-	-
2014	4,742.86	9.97%	20.19%	472.86	957.65	484.79	419.07
2015	4,889.77	10.57%	20.61%	516.85	1,007.83	490.98	400.40
2016	5,048.36	11.17%	22.14%	563.90	1,117.51	553.61	425.92
2017	5,217.25	11.77%	22.26%	614.07	1,161.18	547.11	397.09
2018	5,396.09	12.37%	22.02%	667.50	1,188.11	520.62	356.47
2019	5,585.80	12.97%	22.00%	724.48	1,229.06	504.59	325.94
2020	5,786.83	13.57%	21.91%	785.27	1,267.62	482.35	293.94
2021	5,999.32	14.17%	21.81%	850.10	1,308.64	458.54	263.62
2022	6,223.41	14.77%	21.70%	919.20	1,350.71	431.51	234.03
2023	6,458.61	15.37%	21.59%	992.69	1,394.27	401.58	205.47
2024	6,704.71	15.97%	21.48%	1,070.74	1,439.85	369.11	178.17
2025	6,962.16	16.57%	21.35%	1,153.63	1,486.41	332.79	151.54
2026	7,231.45	17.17%	21.24%	1,241.64	1,535.64	293.99	126.30
2027	7,512.93	17.77%	21.13%	1,335.05	1,587.12	252.07	102.16
2028	7,806.93	18.37%	21.03%	1,434.13	1,641.66	207.53	79.35
2029	8,113.92	18.97%	20.94%	1,539.21	1,699.26	160.05	57.73
2030	8,433.95	19.57%	20.88%	1,650.52	1,761.20	110.68	37.66
2031	8,767.29	20.17%	20.84%	1,768.36	1,827.51	59.14	18.99
2032	9,114.66	20.77%	20.85%	1,893.11	1,900.55	7.44	2.25
2033	9,476.23	21.37%	9.24%	2,025.07	875.66	(1,149.41)	(328.40)
2034	9,852.28	21.97%	7.39%	2,164.55	728.50	(1,436.04)	(387.07)
2035	10,243.64	22.57%	5.50%	2,311.99	563.26	(1,748.73)	(444.67)
2036	10,650.79	23.17%	4.25%	2,467.79	452.32	(2,015.47)	(483.48)
2037	11,073.56	23.77%	3.76%	2,632.19	415.90	(2,216.29)	(501.56)
2038	11,513.15	24.37%	3.46%	2,805.76	398.35	(2,407.40)	(513.98)
2039	11,970.93	23.84%	3.34%	2,853.78	400.03	(2,453.74)	(494.22)
2040	12,448.09	22.23%	3.32%	2,767.73	412.71	(2,355.02)	(447.48)
2041	12,947.04	20.53%	3.33%	2,657.99	431.16	(2,226.83)	(399.18)
2042	13,469.39	18.79%	3.35%	2,531.54	450.91	(2,080.63)	(351.86)
2043	14,014.53	17.16%	3.38%	2,405.21	473.10	(1,932.12)	(308.25)
2044	14,581.39	15.68%	3.40%	2,286.64	496.38	(1,790.26)	(269.45)
2045	15,170.09	14.38%	3.42%	2,181.88	519.52	(1,662.37)	(236.04)
2046	15,780.74	13.27%	3.45%	2,093.45	543.70	(1,549.75)	(207.59)
2047	16,410.26	12.32%	3.46%	2,021.79	567.13	(1,454.66)	(183.82)
2048	17,057.88	11.53%	3.47%	1,965.96	591.66	(1,374.30)	(163.84)
2049	17,727.69	10.86%	3.48%	1,925.45	616.90	(1,308.55)	(147.17)
2050	18,423.67	10.32%	3.49%	1,901.07	643.22	(1,257.85)	(133.46)
2051	19,147.45	9.87%	3.49%	1,889.47	669.02	(1,220.45)	(122.16)
2052	19,899.69	9.51%	3.51%	1,891.90	697.62	(1,194.29)	(112.78)
2053	20,682.16	9.19%	3.51%	1,901.63	725.52	(1,176.11)	(104.77)
2054	21,496.61	8.95%	3.53%	1,924.19	758.85	(1,165.35)	(97.94)
2055	22,344.49	8.76%	3.54%	1,956.76	791.68	(1,165.09)	(92.37)
2056	23,227.14	8.59%	3.55%	1,995.87	823.89	(1,171.98)	(87.66)
2057	24,145.92	8.46%	3.57%	2,042.03	862.39	(1,179.64)	(83.24)
2058	25,102.38	8.36%	3.58%	2,098.58	899.76	(1,198.82)	(79.81)
2059	26,098.07	8.27%	3.60%	2,158.98	938.76	(1,220.22)	(76.63)
2060	27,134.62	8.19%	3.62%	2,223.56	982.16	(1,241.40)	(73.55)
Total				\$ 83,099.62	\$ 45,415.35	\$ (37,684.28)	\$ (2,856.30)
Present Value at 6% as of July 1, 2011				\$ 19,630.05	\$ 16,773.75	\$ (2,856.30)	

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 14, 2012.
All assumptions, including the 6% investment return, are assumed to be met each year in the future.

2/14/2012

Exhibit A2



Scenario 2: Current Plan vs HB 2545 With 6% Investment Return Assumption
Local Group

(1) Fiscal Year	(2) Total Payroll	(3) Employer Contribution Rate		(6) Employer Contribution Amount (\$M)			(8) Present Value of Difference
		(4) Current Plan	(4) HB 2545	(5) Current Plan	(6) HB 2545	(7) Difference	
2012	\$ 1,678.75	7.34%	7.34%	\$ 123.22	\$ 123.22	\$ -	\$ -
2013	1,726.92	7.94%	7.94%	137.12	137.12	-	-
2014	1,777.74	8.54%	14.11%	151.82	250.77	98.95	85.53
2015	1,834.05	9.14%	14.93%	167.63	273.81	106.17	86.59
2016	1,893.42	9.74%	15.24%	184.42	288.55	104.13	80.12
2017	1,955.65	10.34%	15.30%	202.21	299.23	97.02	70.42
2018	2,020.46	10.94%	15.36%	221.04	310.35	89.31	61.16
2019	2,087.94	11.54%	15.38%	240.95	321.07	80.12	51.76
2020	2,158.09	12.14%	15.40%	261.99	332.39	70.40	42.90
2021	2,231.91	12.74%	15.44%	284.34	344.67	60.33	34.68
2022	2,309.17	13.34%	15.49%	308.04	357.70	49.66	26.93
2023	2,389.76	13.94%	15.55%	333.13	371.56	38.43	19.66
2024	2,474.65	14.54%	15.60%	359.81	386.11	26.30	12.69
2025	2,563.71	15.14%	15.68%	388.15	401.86	13.72	6.25
2026	2,656.71	15.74%	15.75%	418.17	418.56	0.39	0.17
2027	2,753.93	16.34%	15.86%	449.99	436.79	(13.21)	(5.35)
2028	2,856.33	16.94%	15.97%	483.86	456.20	(27.67)	(10.58)
2029	2,963.32	17.54%	16.13%	519.77	477.90	(41.87)	(15.10)
2030	3,075.51	18.14%	16.32%	557.90	501.84	(56.06)	(19.08)
2031	3,192.38	18.74%	16.60%	598.25	529.97	(68.28)	(21.92)
2032	3,313.68	19.18%	7.64%	635.40	253.10	(382.29)	(115.78)
2033	3,440.20	18.09%	6.29%	622.46	216.32	(406.14)	(116.04)
2034	3,571.81	16.91%	4.86%	604.17	173.60	(430.57)	(116.05)
2035	3,709.17	15.67%	4.46%	581.16	165.59	(415.57)	(105.67)
2036	3,851.93	14.51%	4.20%	559.07	161.79	(397.28)	(95.30)
2037	4,001.21	13.48%	4.10%	539.44	163.96	(375.48)	(84.97)
2038	4,157.18	12.57%	4.03%	522.65	167.39	(355.26)	(75.85)
2039	4,319.48	11.78%	3.99%	509.04	172.19	(336.85)	(67.85)
2040	4,488.52	11.10%	3.95%	498.20	177.17	(321.03)	(61.00)
2041	4,663.81	10.52%	3.91%	490.45	182.30	(308.15)	(55.24)
2042	4,846.82	10.02%	3.86%	485.41	187.15	(298.27)	(50.44)
2043	5,037.31	9.59%	3.82%	482.92	192.63	(290.29)	(46.31)
2044	5,235.49	9.22%	3.78%	482.75	197.76	(285.00)	(42.89)
2045	5,442.03	8.91%	3.73%	484.72	203.01	(281.71)	(40.00)
2046	5,656.91	8.65%	3.69%	489.08	208.95	(280.13)	(37.52)
2047	5,879.63	8.43%	3.65%	495.45	214.43	(281.03)	(35.51)
2048	6,110.89	8.24%	3.61%	503.51	220.60	(282.91)	(33.73)
2049	6,351.53	8.10%	3.58%	514.18	227.55	(286.63)	(32.24)
2050	6,602.17	7.96%	3.55%	525.77	234.05	(291.72)	(30.95)
2051	6,862.33	7.86%	3.52%	539.66	241.37	(298.29)	(29.86)
2052	7,132.79	7.78%	3.50%	554.63	249.61	(305.02)	(28.80)
2053	7,414.16	7.71%	3.48%	571.62	258.12	(313.50)	(27.93)
2054	7,707.23	7.66%	3.46%	590.03	266.98	(323.06)	(27.15)
2055	8,012.19	7.60%	3.46%	609.17	276.94	(332.22)	(26.34)
2056	8,329.45	7.57%	3.45%	630.62	287.32	(343.30)	(25.68)
2057	8,659.60	7.54%	3.44%	652.91	298.07	(354.84)	(25.04)
2058	9,003.17	7.52%	3.45%	676.98	310.21	(366.77)	(24.42)
2059	9,360.70	7.51%	3.44%	702.95	321.94	(381.02)	(23.93)
2060	9,732.77	7.50%	3.44%	729.98	335.14	(394.84)	(23.39)
Total				\$ 22,676.23	\$ 13,584.93	\$ (9,091.30)	\$ (999.06)
Present Value at 6% as of July 1, 2011				\$ 5,653.46	\$ 4,654.40	\$ (999.06)	

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 14, 2012.
All assumptions, including the 6% investment return, are assumed to be met each year in the future.

2/14/2012

Exhibit B1

Kansas Public Employee Retirement System
Comparison of State/School Group Employer Contributions for Retirement Benefits
Scenario 2: Current Plan versus HB 2545 Under 6% Investment Return Assumption

FYE	Payroll		Current Plan				HB 2545 (1)				Difference (2)		
	Tier 1/2	Tier 3	Rate-DB	Normal Cost Rate	Normal Cost (2)	UAL Payment (2)	Total Cost (2)	Rate-DB	DB Normal Cost Rate	DB Normal Cost (2)		UAL Payment (2)	Total Cost (2)
2012	4,465,186	0,000	8.77%	6.26%	279,612	111,985	391,597	8.77%	6.26%	147,582	244,014	391,597	0,000
2013	4,609,301	0,000	9.37%	6.26%	288,637	143,255	431,892	9.37%	6.26%	152,346	279,546	431,892	0,000
2014	4,742,859	0,000	9.97%	6.26%	297,000	175,863	472,863	20.19%	6.26%	297,000	660,653	957,653	484,790
2015	4,706,273	183,492	10.57%	6.10%	296,064	218,784	516,848	20.61%	4.68%	228,891	778,940	1,007,831	490,983
2016	4,507,134	541,224	11.17%	5.95%	300,444	263,458	563,902	22.14%	4.52%	227,989	889,521	1,117,510	553,608
2017	4,332,724	884,524	11.77%	5.81%	302,927	311,143	614,070	22.02%	4.24%	228,687	933,366	1,161,176	547,106
2018	4,171,368	1,224,718	12.57%	5.69%	306,869	360,627	667,496	22.02%	4.24%	228,687	950,424	1,188,111	520,615
2019	4,017,143	1,568,662	12.97%	5.58%	311,411	413,068	724,479	22.00%	4.11%	229,764	999,300	1,229,064	504,585
2020	3,868,916	1,917,913	13.57%	5.47%	316,332	468,940	785,273	21.91%	4.01%	231,780	1,035,842	1,267,622	482,349
2021	3,729,151	2,270,169	14.17%	5.36%	321,849	528,255	850,104	21.81%	3.90%	234,165	1,074,478	1,308,643	458,540
2022	3,597,727	2,625,683	14.77%	5.27%	327,947	591,250	919,198	21.70%	3.81%	237,341	1,113,368	1,350,709	431,511
2023	3,469,577	2,989,037	15.37%	5.18%	334,384	658,305	992,689	21.59%	3.73%	240,763	1,153,509	1,394,272	401,583
2024	3,343,442	3,361,269	15.97%	5.09%	348,787	729,156	1,070,742	21.48%	3.66%	245,069	1,194,779	1,439,849	369,107
2025	3,218,508	3,743,649	16.57%	5.01%	356,568	804,843	1,153,629	21.35%	3.54%	255,668	1,236,479	1,486,415	332,785
2026	2,976,817	4,336,108	17.17%	4.93%	365,568	884,852	1,241,641	21.24%	3.49%	261,840	1,279,967	1,535,635	293,995
2027	2,765,817	4,945,319	17.77%	4.87%	374,630	969,479	1,335,047	21.13%	3.45%	269,201	1,325,280	1,587,120	252,073
2028	2,661,609	5,365,437	18.37%	4.80%	384,168	1,059,503	1,434,133	20.94%	3.41%	276,891	1,372,458	1,639,261	160,051
2029	2,536,015	5,797,930	18.97%	4.73%	394,404	1,155,041	1,539,210	20.84%	3.38%	285,263	1,422,570	1,699,261	110,681
2030	2,423,441	6,243,849	19.57%	4.68%	404,771	1,256,119	1,650,523	20.84%	3.35%	294,107	1,475,941	1,761,204	59,144
2031	2,324,441	6,703,938	20.17%	4.62%	416,071	1,363,591	1,768,362	20.84%	3.35%	303,666	1,533,399	1,827,506	7,440
2032	2,240,718	7,178,932	20.77%	4.56%	427,404	1,477,043	1,893,114	20.84%	3.35%	313,722	1,596,888	1,900,554	(1,149,408)
2033	2,182,241	7,670,035	21.37%	4.51%	439,771	1,597,666	2,025,071	20.84%	3.31%	324,560	1,661,941	1,985,663	(1,436,041)
2034	2,132,300	8,177,707	21.97%	4.46%	452,929	1,724,775	2,164,545	20.84%	3.29%	335,848	1,737,409	2,070,256	(2,015,469)
2035	2,065,928	8,702,679	22.57%	4.42%	465,777	1,859,059	2,311,989	20.84%	3.27%	347,941	1,825,319	2,164,545	(2,407,404)
2036	1,948,113	9,246,479	23.17%	4.37%	479,764	2,002,011	2,467,789	20.84%	3.26%	360,332	1,942,570	2,264,545	(2,855,024)
2037	1,827,085	9,809,757	23.77%	4.33%	494,529	2,152,422	2,622,186	20.84%	3.24%	373,022	2,074,941	2,369,351	(3,350,319)
2038	1,703,396	10,392,660	24.37%	4.30%	509,871	2,343,908	2,853,778	20.84%	3.23%	386,866	2,219,107	2,482,506	(3,850,034)
2039	1,578,269	10,995,722	24.97%	4.26%	525,828	2,541,901	3,070,729	20.84%	3.22%	401,502	2,374,941	2,604,506	(4,353,744)
2040	1,452,370	11,617,595	25.57%	4.22%	542,444	2,749,546	3,297,991	20.84%	3.21%	416,919	2,542,506	2,737,506	(4,857,442)
2041	1,329,445	12,256,040	26.17%	4.19%	560,970	2,970,572	3,514,542	20.84%	3.20%	432,057	2,724,941	2,874,506	(5,361,944)
2042	1,213,354	12,912,073	26.77%	4.16%	580,520	3,204,692	3,740,212	20.84%	3.19%	449,272	2,914,941	3,014,506	(5,866,442)
2043	1,102,458	13,588,470	27.37%	4.14%	599,573	3,451,002	3,982,574	20.84%	3.18%	467,218	3,114,941	3,164,506	(6,370,940)
2044	992,920	14,284,677	27.97%	4.11%	619,000	3,718,449	4,234,449	20.84%	3.17%	484,624	3,324,941	3,324,506	(6,875,438)
2045	885,412	14,997,606	28.57%	4.08%	643,199	3,999,002	4,492,199	20.84%	3.16%	504,251	3,544,941	3,494,506	(7,379,936)
2046	783,139	15,729,466	29.17%	4.06%	666,305	4,304,488	4,754,793	20.84%	3.15%	524,467	3,774,941	3,674,506	(7,884,434)
2047	680,796	16,484,746	29.77%	4.06%	691,738	4,634,223	5,021,961	20.84%	3.14%	543,899	4,014,941	3,864,506	(8,388,932)
2048	573,131	17,261,980	30.37%	4.06%	716,425	5,000,000	5,300,425	20.84%	3.13%	565,493	4,264,941	4,064,506	(8,893,430)
2049	465,713	18,050,490	30.97%	4.04%	744,066	5,418,223	5,682,289	20.84%	3.12%	587,952	4,534,941	4,334,506	(9,397,928)
2050	373,175	18,848,441	31.57%	4.04%	773,169	5,870,000	6,064,169	20.84%	3.11%	609,662	4,824,941	4,614,506	(9,897,426)
2051	299,011	19,664,612	32.17%	4.04%	803,990	6,354,223	6,448,217	20.84%	3.10%	633,938	5,134,941	4,904,506	(10,391,924)
2052	235,082	20,503,240	32.77%	4.03%	834,433	6,878,449	6,836,671	20.84%	3.09%	659,662	5,474,941	5,194,506	(10,886,422)
2053	178,915	21,362,806	33.37%	4.03%	868,710	7,442,671	7,231,381	20.84%	3.08%	689,938	5,844,941	5,494,506	(11,380,920)
2054	133,803	22,243,377	33.97%	4.04%	904,335	8,048,449	7,632,891	20.84%	3.07%	719,662	6,244,941	5,814,506	(11,875,418)
2055	101,111	23,150,859	34.57%	4.05%	941,358	8,694,223	8,027,391	20.84%	3.06%	749,938	6,674,941	6,134,506	(12,369,916)
2056	76,276	24,089,437	35.17%	4.06%	979,609	9,380,000	8,512,609	20.84%	3.05%	779,662	7,134,941	6,454,506	(12,864,414)
2057	56,488	25,060,935	35.77%	4.07%	1,021,689	1,010,000	8,994,689	20.84%	3.04%	809,938	7,624,941	6,774,506	(13,358,912)
2058	41,446	26,067,418	36.37%	4.08%	1,065,468	1,093,509	9,518,977	20.84%	3.03%	831,757	8,144,941	7,094,506	(13,853,410)
2059	30,655	27,111,890	36.97%	4.08%	1,108,330	1,185,233	10,043,562	20.84%	3.02%	855,481	8,694,941	7,414,506	(14,347,908)
2060	22,730	27,111,890	37.57%	4.08%	1,152,233	1,285,233	10,528,562	20.84%	3.02%	865,481	9,204,941	7,734,506	(14,842,406)
					26,534,733	56,564,891	83,099,624			20,244,383	25,170,965	45,415,348	(37,684,276)

(1) Effective 1/1/14
(2) 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 14, 2012.
All assumptions, including the 6% investment return, are assumed to be met each year in the future.



Exhibit B2

Kansas Public Employee Retirement System
 Comparison of Local Group Employer Contributions for Retirement Benefits
 Scenario 2: Current Plan versus HB 2545 Under 6% Investment Return Assumption

FYE	Payroll			Employer Rate-DB	Normal Cost Rate	Current Plan			Employer Rate-DB	DB Normal Cost Rate	HB 2545 (1)			Difference (2)
	Tier 1/2	Tier 3	0.000			Normal Cost (2)	UAL Payment (2)	Total Cost (2)			DB Normal Cost (2)	UAL Payment (2)	Total Cost (2)	
2012	1,678,751	0.000	0.000	7.34%	5.66%	94,936	28,284	123,220	7.34%	5.66%	94,936	28,284	123,220	0.000
2013	1,726,922	0.000	0.000	7.94%	5.66%	97,660	39,457	137,118	7.94%	5.66%	97,660	39,457	137,118	0.000
2014	1,777,741	0.000	0.000	8.54%	5.48%	97,491	54,328	151,819	14.11%	4.07%	72,282	178,485	250,767	98,948
2015	1,682,855	151,199	0.000	9.14%	5.33%	97,703	69,929	167,633	14.93%	3.91%	71,693	202,113	273,806	106,174
2016	1,601,267	292,153	0.000	9.74%	5.18%	98,132	86,287	184,419	15.24%	3.79%	71,379	217,175	288,554	104,135
2017	1,531,885	423,760	10,344%	10.34%	5.07%	99,104	103,110	202,214	15.30%	3.66%	71,595	227,637	299,232	97,019
2018	1,468,854	551,608	11,344%	10.94%	4.96%	100,184	120,854	221,039	15.36%	3.56%	71,938	238,415	310,353	89,314
2019	1,411,513	676,427	12,149%	11.34%	4.83%	101,365	139,583	240,948	15.38%	3.47%	72,398	248,674	321,071	80,123
2020	1,357,016	801,074	12,749%	12.74%	4.76%	102,664	159,328	261,992	15.40%	3.38%	72,990	259,402	332,392	70,400
2021	1,306,765	925,141	13,349%	13.34%	4.69%	104,102	180,243	284,345	15.44%	3.30%	73,718	270,953	344,671	60,327
2022	1,259,029	1,050,142	13,949%	13.94%	4.59%	105,658	202,385	308,044	15.49%	3.23%	74,599	283,104	357,704	49,660
2023	1,211,644	1,178,114	14,549%	14.54%	4.49%	107,385	225,748	333,132	15.55%	3.17%	75,707	295,852	371,559	38,427
2024	1,166,580	1,308,070	15,149%	15.14%	4.39%	109,300	250,514	359,814	15.68%	3.11%	77,028	309,084	386,112	26,298
2025	1,122,814	1,440,897	15,749%	15.74%	4.29%	111,413	276,733	388,146	15.75%	3.02%	78,579	323,284	401,863	13,717
2026	1,079,538	1,577,175	16,349%	16.34%	4.22%	113,702	304,465	418,167	15.86%	2.99%	80,359	338,200	418,559	0.392
2027	1,036,739	1,717,192	16,949%	16.94%	4.16%	116,160	333,832	449,992	15.97%	2.96%	82,356	354,431	436,787	(27,666)
2028	996,305	1,860,024	17,549%	17.54%	4.11%	118,825	365,037	483,862	16.13%	2.94%	84,587	371,608	456,196	(41,866)
2029	956,653	2,006,671	18,14%	18.14%	4.06%	121,684	398,083	519,767	16.32%	2.92%	87,038	390,862	477,901	(56,058)
2030	918,258	2,157,256	18,74%	18.74%	4.01%	124,750	433,148	557,898	16.60%	2.90%	89,721	412,119	501,840	(68,282)
2031	880,111	2,312,267	19,18%	19.18%	3.97%	127,989	470,263	598,252	16.60%	2.89%	92,614	437,356	529,970	(382,295)
2032	841,490	2,472,188	18,09%	18.09%	3.92%	131,389	504,010	635,400	16.60%	2.88%	95,705	463,787	559,105	(406,140)
2033	802,890	2,637,309	16,91%	16.91%	3.88%	134,983	534,476	669,459	16.60%	2.87%	99,009	491,412	591,311	(430,571)
2034	763,519	2,808,228	15,67%	15.67%	3.83%	138,761	568,424	707,185	16.60%	2.86%	102,518	520,709	621,592	(397,280)
2035	724,959	2,984,212	14,51%	14.51%	3.81%	142,739	604,168	746,907	16.60%	2.86%	106,245	552,347	653,956	(375,483)
2036	685,180	3,166,753	13,48%	13.48%	3.78%	146,917	642,424	789,341	16.60%	2.86%	110,177	587,079	688,299	(355,260)
2037	645,945	3,355,264	12,57%	12.57%	3.75%	151,322	682,551	833,873	16.60%	2.86%	114,341	623,829	724,959	(336,849)
2038	606,916	3,550,260	11,10%	11.10%	3.70%	155,988	724,510	880,498	16.60%	2.86%	118,752	663,495	763,519	(318,128)
2039	567,903	3,751,578	10,02%	10.02%	3.66%	160,892	768,117	929,009	16.60%	2.86%	123,383	708,247	804,890	(301,027)
2040	528,254	3,960,270	8,91%	8.91%	3.61%	166,047	814,150	980,197	16.60%	2.86%	128,247	757,970	848,925	(284,959)
2041	486,776	4,177,057	7,86%	7.86%	3.57%	171,445	862,428	1,033,873	16.60%	2.86%	133,329	809,970	897,146	(269,267)
2042	445,926	4,400,890	6,83%	6.83%	3.52%	177,156	912,574	1,089,728	16.60%	2.86%	138,678	863,358	948,688	(254,338)
2043	405,937	4,631,369	5,89%	5.89%	3.46%	183,201	964,720	1,148,921	16.60%	2.86%	144,276	918,084	1,000,000	(239,707)
2044	365,661	4,869,826	4,92%	4.92%	3.40%	189,565	1,018,289	1,215,854	16.60%	2.86%	150,114	974,643	1,059,289	(225,260)
2045	326,896	5,115,138	3,96%	3.96%	3.34%	196,289	1,073,510	1,289,799	16.60%	2.86%	156,208	1,033,299	1,115,138	(210,827)
2046	290,352	5,366,555	2,99%	2.99%	3.28%	203,407	1,129,720	1,361,147	16.60%	2.86%	162,566	1,094,643	1,170,000	(196,260)
2047	254,343	5,625,289	1,99%	1.99%	3.21%	210,878	1,187,878	1,441,756	16.60%	2.86%	169,152	1,158,852	1,223,289	(181,707)
2048	218,593	5,892,300	0,99%	0,99%	3.15%	218,747	1,248,768	1,524,515	16.60%	2.86%	175,992	1,225,970	1,274,959	(166,630)
2049	184,549	6,166,985	0,00%	0,00%	3.08%	227,091	1,307,089	1,607,180	16.60%	2.86%	183,089	1,297,550	1,321,937	(151,114)
2050	155,998	6,446,177	0,00%	0,00%	3.01%	235,937	1,362,835	1,692,773	16.60%	2.86%	191,441	1,362,835	1,362,835	(135,630)
2051	129,299	6,733,033	0,00%	0,00%	2.94%	245,268	1,416,394	1,781,662	16.60%	2.86%	199,141	1,425,970	1,425,970	(120,000)
2052	104,361	7,028,427	0,00%	0,00%	2.87%	255,057	1,468,289	1,873,346	16.60%	2.86%	206,103	1,491,613	1,491,613	(104,361)
2053	81,172	7,332,993	0,00%	0,00%	2.80%	265,416	1,518,878	1,968,289	16.60%	2.86%	213,380	1,564,643	1,564,643	(88,707)
2054	63,826	7,643,400	0,00%	0,00%	2.73%	276,348	1,566,394	2,064,748	16.60%	2.86%	220,073	1,633,289	1,633,289	(72,852)
2055	50,205	7,961,988	0,00%	0,00%	2.66%	287,877	1,612,835	2,161,662	16.60%	2.86%	227,073	1,706,959	1,706,959	(56,707)
2056	38,812	8,290,643	0,00%	0,00%	2.59%	299,941	1,656,394	2,259,057	16.60%	2.86%	233,313	1,781,613	1,781,613	(40,361)
2057	29,195	8,630,402	0,00%	0,00%	2.52%	312,590	1,698,289	2,350,289	16.60%	2.86%	239,959	1,857,084	1,857,084	(23,959)
2058	22,087	8,981,087	0,00%	0,00%	2.45%	325,838	1,739,720	2,454,515	16.60%	2.86%	246,103	1,927,550	1,927,550	(7,515)
2059	16,902	9,343,797	0,00%	0,00%	2.38%	339,758	1,778,981	2,552,773	16.60%	2.86%	251,748	1,996,394	1,996,394	(8,981)
2060	12,843	9,719,925	0,00%	0,00%	2.31%	354,300	1,816,394	2,654,515	16.60%	2.86%	256,959	2,064,643	2,064,643	(23,959)
						8,453,376	14,220,859	22,676,235			6,541,094	7,043,841	13,584,935	(9,091,300)

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