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February 1, 2013

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

Re: Cost Studies for Changes to the Tier 3 Cash Balance Plan

Dear Alan:

Senate Substitute for HB 2333 (Sub HB 2333), which was passed by the 2012 Legislature, created a new benefit design for all employees hired on or after January 1, 2015. These members are referred to as Tier 3 members. The provisions of Sub HB 2333 include a guaranteed interest crediting rate of 5.25% and an annuity conversion rate of 6%. We have been asked to determine the cost impact of several potential changes to the Tier 3 plan design:

- (1) Reduce the guaranteed interest crediting rate to 4.25%
- (2) Reduce the annuity conversion interest rate to 5%
- (3) Reduce the guaranteed interest crediting rate to 4.25% and reduce the annuity conversion interest rate to 5%.

This letter and its attachments include a comparison of the estimated employer costs under the current provisions under Sub HB 2333 and each of the changes identified in the above paragraph. All other provisions of Sub HB 2333, including changes to the statutory cap on the employer contribution rate and the changes for Tier 1 and 2 members, are assumed to remain in place.

Actuarial Assumptions and Methods

In general, the same actuarial methods and assumptions that were used in the December 31, 2011 actuarial valuation were used in the attached cost projections unless otherwise noted in this letter. The projection of future benefit amounts for Tier 3 members requires the use of an additional assumption that is unique to the KPERS Tier 3 Cash Balance Plan design. Given the variable nature of the interest crediting rate (the sum of the guaranteed interest crediting rate plus dividends), an assumption is needed to anticipate the long term average of the interest crediting rate. In addition, a mortality assumption for the annuity conversion rates is another assumption unique to the Cash Balance Plan.

House Pensions & Benefits

Date: 2-4-13

Attachments: 2

3906 Raynor Pkwy, Suite 106, Bellevue, NE 68123

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

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Interest Crediting Rate

The guaranteed interest crediting rate under Sub HB 2333 is 5.25% and two of the cost studies use a guaranteed interest crediting rate of 4.25%. However additional interest credits (called dividends) may be granted at the discretion of the KPERS Board of Directors, subject to certain conditions. If the total funded ratio of the system is less than 80%, the dividend shall be payable totally at the Board's discretion taking into account the funding of the system, market conditions, investment returns, and other related factors specified by the Board, with a maximum dividend of 4%. If the funded ratio of the system as a whole is equal to or more than 80%, dividends granted by the Board cannot exceed the lesser of 4% or a percentage, equal to the funded ratio of the system multiplied by the rate of return on the system's assets that is above 8% for the fiscal year. In all cases, the dividend shall not be granted unless the rate of return on KPERS assets is at least 10% for that fiscal year.

Although the long-term assumed rate of return on KPERS' assets is 8% per annum, investment returns are expected to vary from year to year. Given the plan design and the expected return and standard deviation of KPERS' portfolio, the actual interest crediting rate (including dividends) is expected to be higher than the guaranteed interest crediting rate. Therefore, an assumption is needed to anticipate the effective interest crediting rate over the duration of the projection period. Based on our analysis, if the system's funded ratio is 80% to 100%, the expected dividend rate would be around 1.75%. The dividend rate would remain 1.75% under the lower guaranteed interest crediting rate because the criteria for the dividend do not change. In other words, the total interest crediting rate is 7% when the guaranteed interest crediting rate is 5.25% and 6% when the guaranteed interest crediting rate is 4.25%. However, under current projections, an 80% funded ratio for the system, as a whole, is not projected to occur until about 2030, and so we expect that the effective dividend rate will be lower in the short term. The total interest crediting rate assumption used in the cost projections for Sub HB 2333 is 5.5% from 2015 through 2022, 6.0% from 2023 through 2030 and 7.0% thereafter. For the studies where the guaranteed interest crediting rate is lowered to 4.25%, the interest crediting rate assumption is 4.5% from 2015 through 2022, 5.0% from 2023 through 2030 and 6.0% thereafter. It is important to note that since the KPERS Board is able to exercise some degree of discretion in setting dividends, our analysis may need to be revisited, and potentially revised for future valuations, once the Board has established a policy for granting dividends.

Annuity Conversion Factors

The annuity conversion factors, which are used to convert the Cash Balance account value into monthly benefit amounts at retirement, are based on an interest rate and mortality assumption. The interest rate to be used for the annuity conversion factors is specified as 6.0% as part of the plan design in Sub HB 2333. The cost studies include two alternatives that assume the interest rate for annuity conversion will be lowered to 5.0%.

Sub HB 2333 gives the KPERS Board of Trustees the authority to set the mortality table to be used for the conversion factors. Since the Board has not yet had time to set this assumption, it was necessary to make an assumption about the mortality table. The RP 2000 Mortality Table projected to 2035, using Projection Scale AA, with a 50/50 male/female blend was used for the annuity conversion factors in this cost study. To the extent the Board elects to use a different mortality table, the actual costs may vary from those projected in this study.



Other Assumptions

For all projections, all vested members are assumed to leave their employee account balance in the Cash Balance Plan when they terminate employment and receive benefits based on the total account value (employee and employer) at normal retirement age. In addition, the assumption for the portion of the retirement benefit for Tier 3 that will be paid as a lump sum at retirement was 30% of the total account balance.

Contributions from Expanded Lottery Act Revenue Fund

Sub HB 2333 provides for additional contributions by the State to fund the unfunded actuarial liability (UAL) of the State/School Group until that group reaches a funded ratio of at least 80%. This additional contribution stream comes from the expanded lottery act revenue fund (ELARF) and is determined as 50% of the money credited to the ELARF, after a reduction of \$10.5 million (the reduction is only through FY 2022). Due to the variable nature of the source of these contributions, the specific amounts are unknown at this point in time. Based on guidance from KPERS, it was assumed that the total ELARF revenue would be \$87.72 million for FY 2013 increasing 1% per year thereafter. The ELARF funds contributed to KPERS are the same under the Sub HB 2333 and three cost studies because the date at which the State/School group reaches 80% funded ratio does not change. The expected contributions from the ELARF are shown in the table below. The additional State contribution is denoted with an asterisk on Exhibits A1, A3, A5, and A7.

Fiscal Year	ELARF Funds	Fiscal Year	ELARF Funds
2014	\$39.05	2021	\$42.24
2015	39.49	2022	42.72
2016	39.94	2023	48.45
2017	40.39	2024	48.93
2018	40.85	2025	49.42
2019	41.31	2026	49.92
2020	41.77	2027	50.42

To the extent the actual ELARF amounts contributed by the State vary from the estimated amounts used in these projections, the valuation results will also vary from those in the attached projections.

Amortization period

The amortization period used in all of the cost studies remained at a closed 21 year period starting on December 31, 2011. 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 projections.



Funding Methodology

The projection results reflect an actuarial valuation process with combined results for all three membership tiers. The valuation will report one overall contribution rate, including the unfunded actuarial liability payment, based on all covered payroll (Tier 1, Tier 2 and Tier 3 members) for each KPERS group. Separate employer contribution rates will continue to be determined for the State/School group (all Tiers combined) and the Local group (all Tiers combined).

Results

The cost impact of the Cash Balance Plan 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 period of time is necessary in order to see the ultimate impact of the various Cash Balance plan designs. The employer cost estimates under Sub HB 2333 and the three alternate plan provisions, which vary the guaranteed interest crediting rate, the annuity conversion interest rate, and both the guaranteed interest crediting rate and the annuity conversion interest rate, are reflected in the attached exhibits. Exhibits A1 through A8 show the estimated employer contribution rate and corresponding dollar amounts of employer contributions under Sub HB 2333 and each alternative plan design by year for the State/School and Local groups. Exhibits B1 through B8 show the split of projected employer contributions into normal cost and UAL payments by year and in total. The projections assume that all actuarial assumptions, including the 8% investment return assumption, are met each year in the future. To the extent this assumption is not met in the future, the cost projections in these studies are expected to change. Please note that the dollar amounts of employer contributions shown in the exhibits are future dollar amounts, calculated using the estimated employer contribution rate and projected payroll in future years. Due to the length of the projection period, the future payroll amounts grow significantly and the resulting contributions in nominal dollars in those years can appear very large. In order to provide a method for a more direct comparison of cost results, the present value of the total employer contributions, using an 8% discount rate, has been included at the bottom of Exhibits A1 through A8. The employer contribution rate also provides a reliable way to directly compare the cost of different plan designs many years in the future.

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

It should also be noted that changes in the plan provisions result in different benefit amounts to members of the system. This, in turn, has an impact on the cost of the various plan designs. Therefore, the cost projections should not be evaluated in isolation from the benefit amounts provided by the plan design.



Disclaimers, Caveats, and Limitations

The numerical charts that comprise this study are based primarily upon the December 31, 2011 valuation results, the actuarial assumptions used in that valuation (other than as noted elsewhere in this letter), and the projection model prepared by the System's actuary, Cavanaugh Macdonald Consulting, LLC. Significant items are noted below:

- The investment return in all future years is assumed to be 8% on a market value basis, unless otherwise indicated.
- All demographic assumptions regarding mortality, disability, retirement, salary increases, and termination of employment are assumed to hold true in the future. Please note that the actuarial assumption assumes that mortality will improve in the future (i.e. people will live longer).
- Due to the changes in the plan design for Tier 3, retirement rates used in the valuation were changed to attempt to anticipate the retirement patterns in future years. Whether, and how, the retirement patterns will ultimately be impacted cannot be known at this time. While we believe the assumptions used are reasonable based on available information, actual experience may unfold differently than assumed. If so, it could have an impact on the costs of the plan designs.
- Changes in the plan design and resulting benefit amounts may have an effect on future termination patterns. Whether, and how, termination of employment patterns will ultimately be impacted cannot be known at this time. Therefore, no change in those assumptions was reflected in our modeling results.
- The number of active members covered by KPERS in the future is assumed to remain level (neither growth nor decline in the active membership count). As active members leave covered employment, they are assumed to be replaced by new employees who have a similar demographic profile as recent new hires.
- Plan provisions for Tier 3 benefits are as described earlier in this letter. There are no other changes from the provisions of Sub HB 2333 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.
- All projections reflect the statutory caps of Sub HB 2333, i.e. 0.9% in FY 2014, 1.0% in FY 2015, 1.1% in FY 2016 and an ultimate cap of 1.2% in FY 2017 and beyond.
- We relied upon the membership data provided by KPERS for the actuarial valuation. The numerical results depend on the integrity of this information. If there are material inaccuracies in the data, the results presented herein may be different and the projections may need to be revised.

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, 2011, and project future events using one set of assumptions out of a range of many possibilities. A different set of assumptions would lead to different results. The projections do not predict the System's financial condition or its ability to pay benefits in the future and do not provide any guarantee of future financial soundness of the System. Over time, a defined benefit plan's total cost will depend on a number of factors, including the amount of benefits paid, the number of people paid benefits, the duration of the benefit payments, plan expenses, and the amount of earnings on assets invested to pay benefits. These amounts and other variables are uncertain and unknowable at the time the projections were prepared. Because not all of the assumptions will unfold exactly as expected, actual results will differ from the projections. To the extent that actual experience deviates significantly from the assumptions, results could be significantly better or significantly worse than indicated in this study.

Mr. Alan Conroy
February 1, 2013
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We, Patrice A. Beckham, FSA and Brent A. Banister, FSA, are consulting actuaries with Cavanaugh Macdonald Consulting, LLC. We are members of the American Academy of Actuaries, Fellows of the Society of Actuaries, and meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

If you have any questions or additional information is needed, please let us know. We are available to provide additional analysis or explanation.

Sincerely,

Handwritten signature of Patrice A. Beckham in cursive.

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

Handwritten signature of Brent A. Banister in cursive.

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

Exhibit A1



HB 2333 vs. Guaranteed Interest Credit of 4.25%
State/School Group

(1) Fiscal Year	(2) Total Payroll	(3) Employer Contribution Rate		(6) Employer Contribution Amount (\$M)			(8) Present Value of Difference
		HB 2333	4.25% Guar	4.25% Guar		Difference	
			Interest Credit	HB 2333	Interest Credit		
2013	\$ 4,391.75	9.37%	9.37%	\$ 411.51	\$ 411.51	\$ -	\$ -
2014	4,535.95	10.27% *	10.27% *	504.89	504.89	-	-
2015	4,668.66	11.27% *	11.27% *	565.65	565.65	-	-
2016	4,814.29	12.37% *	12.37% *	635.47	635.47	-	-
2017	4,971.08	13.57% *	13.57% *	714.97	714.97	-	-
2018	5,138.05	14.77% *	14.77% *	799.74	799.74	-	-
2019	5,315.15	15.97% *	15.97% *	890.14	890.14	-	-
2020	5,502.86	16.96% *	16.76% *	975.27	963.96	(11.31)	(6.35)
2021	5,701.82	17.16% *	16.88% *	1,020.71	1,004.79	(15.92)	(8.28)
2022	5,912.23	17.26% *	16.90% *	1,063.03	1,041.75	(21.29)	(10.25)
2023	6,133.19	17.25% *	16.83% *	1,106.62	1,080.37	(26.26)	(11.70)
2024	6,364.33	17.18% *	16.68% *	1,142.50	1,110.25	(32.24)	(13.31)
2025	6,606.19	17.08% *	16.51% *	1,177.88	1,140.33	(37.55)	(14.35)
2026	6,859.09	16.96% *	16.31% *	1,213.05	1,168.87	(44.18)	(15.63)
2027	7,123.55	16.80% *	16.09% *	1,247.22	1,196.66	(50.56)	(16.56)
2028	7,399.97	16.62%	15.84%	1,229.79	1,171.93	(57.86)	(17.55)
2029	7,688.78	16.41%	15.55%	1,262.07	1,195.87	(66.20)	(18.60)
2030	7,990.01	16.17%	15.23%	1,291.81	1,216.48	(75.32)	(19.59)
2031	8,303.69	15.86%	14.82%	1,317.30	1,230.95	(86.35)	(20.79)
2032	8,630.79	15.65%	14.51%	1,350.47	1,252.39	(98.07)	(21.87)
2033	8,971.62	6.27%	5.36%	562.50	480.79	(81.70)	(16.87)
2034	9,326.24	4.66%	3.74%	434.51	349.10	(85.41)	(16.33)
2035	9,695.31	3.04%	2.11%	294.33	204.38	(89.95)	(15.92)
2036	10,079.36	1.93%	0.99%	194.33	99.55	(94.78)	(15.53)
2037	10,478.46	1.44%	0.48%	150.97	50.45	(100.52)	(15.25)
2038	10,893.57	1.15%	0.17%	124.75	18.03	(106.72)	(14.99)
2039	11,325.89	1.01%	0.00%	114.37	-	(114.37)	(14.88)
2040	11,776.61	0.97%	0.00%	113.75	-	(113.75)	(13.70)
2041	12,248.24	0.96%	0.00%	117.93	-	(117.93)	(13.15)
2042	12,742.53	1.00%	0.00%	127.31	-	(127.31)	(13.15)
2043	13,259.06	1.05%	0.00%	138.62	-	(138.62)	(13.26)
2044	13,796.65	1.09%	0.00%	150.69	-	(150.69)	(13.34)
2045	14,354.13	1.14%	0.00%	163.40	-	(163.40)	(13.40)
2046	14,931.56	1.19%	0.00%	178.36	-	(178.36)	(13.54)
2047	15,529.63	1.24%	0.00%	192.72	-	(192.72)	(13.55)
2048	16,145.83	1.29%	0.01%	207.97	2.16	(205.81)	(13.39)
2049	16,780.21	1.33%	0.04%	223.82	6.84	(216.97)	(13.07)
2050	17,437.36	1.37%	0.07%	238.91	12.05	(226.87)	(12.66)
2051	18,121.06	1.41%	0.10%	254.98	17.72	(237.26)	(12.26)
2052	18,832.61	1.43%	0.13%	269.97	23.89	(246.08)	(11.77)
2053	19,572.49	1.47%	0.16%	287.51	30.73	(256.78)	(11.37)
2054	20,342.54	1.48%	0.18%	301.80	36.07	(265.73)	(10.90)
2055	21,144.42	1.51%	0.21%	318.75	43.85	(274.90)	(10.44)
2056	21,979.24	1.52%	0.22%	334.24	47.88	(286.36)	(10.07)
2057	22,848.28	1.53%	0.25%	350.32	56.73	(293.59)	(9.56)
2058	23,752.99	1.54%	0.26%	364.63	61.46	(303.17)	(9.14)
2059	24,694.80	1.55%	0.27%	381.89	66.43	(315.46)	(8.81)
2060	25,675.21	1.55%	0.27%	397.30	69.14	(328.16)	(8.48)
2061	26,695.83	1.54%	0.29%	410.63	77.28	(333.35)	(7.98)

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

Total	\$ 27,321.35	\$ 21,051.50	\$ (6,269.85)	\$ (561.58)
Present Value at 8% as of July 1, 2012	\$ 9,505.50	\$ 8,943.92	\$ (561.58)	

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 1, 2013.

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



Exhibit B1

Kansas Public Employee Retirement System
Comparison of State/School Group Employer Contributions for Retirement Benefits
HB 2333 vs. Guaranteed Interest Credit of 4.25%

Table with columns: F.Y.E., Payroll (\$M), Employer Contribution Rate, Employer Normal Cost Rate, UAL Payment, Total Cost, Employer Normal Cost, UAL Payment, Total Cost, Employer Normal Cost Rate, Employer Contribution Rate, UAL Payment, Total Cost, Employer Normal Cost, UAL Payment, Total Cost, Difference.

(a) Indicates additional contributions from ELARF are added to this contribution rate to get the total contribution amount shown.
(b) 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 1, 2013.
All assumptions, including the 8% investment return, are assumed to be met each year in the future.

Exhibit A2



HB 2333 vs. Guaranteed Interest Credit of 4.25%
Local Group

(1) Fiscal Year	(2) Total Payroll	(3) Employer Contribution Rate		(5) HB 2333	(6) Employer Contribution Amount (\$M)		(8) Present Value of Difference	
		HB 2333	4.25% Guar Interest Credit		4.25% Guar			Difference
					Interest Credit	HB 2333		
2013	\$ 1,660.60	7.94%	7.94%	\$ 131.85	\$ 131.85	\$ -	\$ -	
2014	1,706.61	8.84%	8.84%	150.86	150.86	-	-	
2015	1,755.46	9.78%	9.78%	171.62	171.62	-	-	
2016	1,809.70	10.52%	10.52%	190.43	190.43	-	-	
2017	1,867.11	10.47%	10.39%	195.47	194.02	(1.46)	(1.03)	
2018	1,927.21	10.53%	10.37%	202.96	199.91	(3.05)	(2.00)	
2019	1,990.11	10.57%	10.34%	210.29	205.69	(4.60)	(2.79)	
2020	2,055.72	10.62%	10.31%	218.26	211.93	(6.33)	(3.56)	
2021	2,124.94	10.67%	10.29%	226.76	218.67	(8.09)	(4.21)	
2022	2,197.01	10.73%	10.29%	235.75	226.08	(9.67)	(4.66)	
2023	2,272.09	10.79%	10.28%	245.05	233.54	(11.51)	(5.13)	
2024	2,351.35	10.84%	10.28%	254.94	241.76	(13.18)	(5.44)	
2025	2,434.78	10.90%	10.28%	265.49	250.34	(15.15)	(5.79)	
2026	2,521.94	10.97%	10.28%	276.68	259.22	(17.45)	(6.18)	
2027	2,613.06	11.03%	10.28%	288.23	268.64	(19.59)	(6.42)	
2028	2,709.03	11.10%	10.28%	300.77	278.39	(22.37)	(6.79)	
2029	2,809.54	11.17%	10.27%	313.76	288.47	(25.29)	(7.10)	
2030	2,914.71	11.25%	10.27%	327.77	299.43	(28.34)	(7.37)	
2031	3,024.53	11.33%	10.26%	342.53	310.38	(32.15)	(7.74)	
2032	3,138.76	4.94%	4.04%	154.92	126.93	(27.99)	(6.24)	
2033	3,257.50	3.90%	3.00%	126.94	97.65	(29.29)	(6.05)	
2034	3,381.27	2.81%	1.90%	94.96	64.35	(30.61)	(5.85)	
2035	3,510.46	2.46%	1.52%	86.39	53.38	(33.01)	(5.84)	
2036	3,644.94	2.22%	1.26%	81.05	45.90	(35.15)	(5.76)	
2037	3,785.22	2.12%	1.12%	80.11	42.37	(37.74)	(5.73)	
2038	3,931.55	2.05%	1.02%	80.58	40.12	(40.45)	(5.68)	
2039	4,084.19	2.00%	0.95%	81.80	38.93	(42.87)	(5.58)	
2040	4,243.22	1.98%	0.90%	83.86	38.05	(45.81)	(5.52)	
2041	4,408.81	1.95%	0.85%	85.96	37.53	(48.43)	(5.40)	
2042	4,581.37	1.93%	0.82%	88.56	37.41	(51.15)	(5.28)	
2043	4,761.25	1.93%	0.78%	91.72	37.27	(54.45)	(5.21)	
2044	4,948.86	1.92%	0.75%	94.98	37.09	(57.89)	(5.13)	
2045	5,144.01	1.91%	0.73%	98.34	37.40	(60.94)	(5.00)	
2046	5,346.97	1.90%	0.70%	101.78	37.70	(64.09)	(4.86)	
2047	5,557.90	1.91%	0.68%	105.88	37.99	(67.89)	(4.77)	
2048	5,777.07	1.90%	0.67%	109.54	38.86	(70.68)	(4.60)	
2049	6,004.27	1.90%	0.66%	113.90	39.78	(74.11)	(4.47)	
2050	6,240.32	1.90%	0.64%	118.40	40.13	(78.27)	(4.37)	
2051	6,485.84	1.90%	0.63%	123.09	41.14	(81.95)	(4.23)	
2052	6,741.16	1.90%	0.63%	127.92	42.20	(85.71)	(4.10)	
2053	7,006.34	1.90%	0.62%	132.90	43.34	(89.56)	(3.97)	
2054	7,282.35	1.89%	0.61%	137.32	44.54	(92.78)	(3.81)	
2055	7,569.72	1.88%	0.61%	142.63	45.80	(96.83)	(3.68)	
2056	7,868.83	1.87%	0.60%	147.31	47.14	(100.18)	(3.52)	
2057	8,180.09	1.87%	0.59%	152.92	48.54	(104.37)	(3.40)	
2058	8,504.09	1.86%	0.59%	157.84	50.01	(107.84)	(3.25)	
2059	8,841.31	1.84%	0.58%	162.90	51.54	(111.36)	(3.11)	
2060	9,192.25	1.83%	0.58%	168.08	53.13	(114.95)	(2.97)	
2061	9,557.47	1.81%	0.56%	173.40	53.83	(119.56)	(2.86)	
			Total	\$ 8,055.46	\$ 5,781.30	\$ (2,274.16)	\$ (216.42)	
			Present Value at 8% as of July 1, 2012	\$ 2,445.04	\$ 2,228.62	\$ (216.42)		

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 1, 2013. All assumptions, including the 8% 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
HB 2333 vs. Guaranteed Interest Credit of 4.25%

FYE	Payroll (\$M)		Employer				Guaranteed Interest Credit of 4.25%				Total		Present Value of Difference	
	Tier 1/2	Tier 3	Contribution Rate	Normal Cost Rate	UAL Payment ⁽²⁾	Employer Cost ⁽²⁾	Contribution Rate	Normal Cost Rate	UAL Payment ⁽²⁾	Employer Cost ⁽²⁾	Normal Cost Rate	UAL Payment ⁽²⁾		Employer Cost ⁽²⁾
2013	\$1,660.604	\$0.000	7.94%	2.91%	\$83.491	\$131.852	7.94%	2.91%	\$83.491	\$48,361	2.91%	\$83.491	\$131.852	\$0.000
2014	1,706.606	0.000	8.84%	2.91%	101.163	150.864	8.84%	2.91%	101.163	49,701	2.91%	101.163	150.864	0.000
2015	1,755.461	0.000	9.78%	2.03%	136.048	171.618	9.78%	2.03%	136.048	35,570	2.03%	136.048	171.618	0.000
2016	1,658.682	151.015	10.52%	1.95%	155.091	190.430	10.52%	1.95%	155.091	35,339	1.95%	155.091	190.430	0.000
2017	1,575.692	291.415	10.47%	1.88%	160.384	190.475	10.39%	1.80%	160.384	32,431	1.68%	167.474	199,906	(1,459)
2018	1,504.853	422.352	10.53%	1.83%	167.667	202.957	10.37%	1.68%	167.667	31,352	1.58%	174.334	205,686	(3,052)
2019	1,440.724	549.389	10.57%	1.79%	174.732	210.290	10.34%	1.58%	174.732	30,406	1.48%	181.520	211,927	(4,604)
2020	1,381.836	673.888	10.62%	1.75%	182.343	218.261	10.31%	1.48%	182.343	28,791	1.39%	189.119	218,671	(6,334)
2021	1,328.487	796.450	10.67%	1.71%	190.394	226.763	10.29%	1.39%	190.394	27,553	1.31%	197.292	226,082	(8,092)
2022	1,278.151	918.861	10.73%	1.68%	198.830	235.755	10.29%	1.31%	198.830	26,699	1.24%	205.397	233,544	(9,672)
2023	1,229.411	1,042.682	10.79%	1.66%	207.442	245.053	10.28%	1.24%	207.442	25,493	1.17%	214.208	241,761	(11,509)
2024	1,182.829	1,168.239	10.84%	1.63%	216.560	254.941	10.28%	1.17%	216.560	24,231	1.11%	223.269	250,339	(13,180)
2025	1,138.492	1,296.287	10.90%	1.61%	226.191	265.493	10.28%	1.11%	226.191	23,253	1.06%	232.523	259,222	(15,154)
2026	1,094.860	1,427.085	10.97%	1.60%	236.306	276.676	10.28%	1.06%	236.306	22,111	1.01%	242.231	268,639	(17,454)
2027	1,052.036	1,561.025	11.03%	1.59%	246.673	288.231	10.28%	1.01%	246.673	20,770	0.97%	252.211	278,394	(19,592)
2028	1,011.323	1,697.706	11.10%	1.58%	257.900	300.765	10.28%	0.97%	257.900	19,279	0.93%	262.411	288,467	(22,371)
2029	972.150	1,837.388	11.17%	1.58%	269.435	313.756	10.27%	0.93%	269.435	17,900	0.89%	273.400	299,432	(25,289)
2030	934.164	1,980.546	11.25%	1.58%	281.852	327.774	10.27%	0.89%	281.852	16,312	0.86%	284.306	310,381	(28,342)
2031	896.687	2,127.843	11.33%	1.58%	294.892	342.530	10.26%	0.86%	294.892	14,900	0.83%	295.927	323,148	(32,148)
2032	859.356	2,279.406	4.94%	1.58%	105.462	154.923	4.04%	0.83%	105.462	13,279	0.81%	307.179	337,411	(36,241)
2033	821.485	2,436.613	3.90%	1.58%	51.364	126.938	3.00%	0.81%	51.364	12,000	0.78%	320.165	352,805	(40,466)
2034	783.430	2,597.839	2.81%	1.58%	41.590	94.960	1.90%	0.78%	41.590	10,818	0.76%	334.136	369,339	(44,828)
2035	745.673	2,764.790	2.46%	1.58%	30.892	86.386	1.52%	0.76%	30.892	9,759	0.74%	348.246	387,027	(49,282)
2036	707.827	2,937.117	2.22%	1.58%	23.328	81.047	1.26%	0.74%	23.328	8,759	0.72%	362.411	406,024	(53,842)
2037	669.798	3,115.419	2.12%	1.59%	20.062	80.110	1.12%	0.72%	20.062	7,811	0.70%	376.687	426,339	(58,452)
2038	631.744	3,299.802	2.05%	1.59%	18.085	80.576	1.02%	0.70%	18.085	7,000	0.68%	391.614	448,246	(63,148)
2039	593.492	3,490.700	2.00%	1.59%	16.745	81.802	0.95%	0.68%	16.745	6,312	0.67%	407.179	472,339	(68,027)
2040	555.203	3,688.013	1.98%	1.60%	16.124	83.559	0.90%	0.67%	16.124	5,759	0.65%	423.165	498,027	(73,148)
2041	516.439	3,892.373	1.95%	1.60%	15.431	85.957	0.85%	0.65%	15.431	5,246	0.64%	439.246	524,339	(78,902)
2042	477.700	4,103.667	1.93%	1.60%	15.119	88.559	0.82%	0.64%	15.119	4,759	0.62%	455.339	551,027	(84,828)
2043	439.470	4,321.777	1.93%	1.61%	15.236	91.719	0.78%	0.62%	15.236	4,312	0.61%	471.614	578,339	(90,752)
2044	402.975	4,545.881	1.92%	1.61%	15.341	94.979	0.75%	0.61%	15.341	3,965	0.60%	488.246	606,027	(96,828)
2045	366.511	4,777.500	1.91%	1.61%	15.452	98.339	0.73%	0.60%	15.452	3,639	0.59%	505.339	635,027	(103,027)
2046	330.966	5,016.003	1.90%	1.61%	15.506	101.783	0.70%	0.58%	15.506	3,329	0.58%	523.165	664,339	(110,027)
2047	295.949	5,261.952	1.91%	1.62%	16.118	105.884	0.68%	0.57%	16.118	3,039	0.57%	541.614	694,027	(117,027)
2048	262.213	5,514.858	1.90%	1.62%	16.176	109.540	0.67%	0.56%	16.176	2,789	0.56%	560.339	724,339	(124,027)
2049	228.104	5,776.162	1.90%	1.62%	16.812	113.897	0.66%	0.55%	16.812	2,559	0.55%	579.614	755,027	(131,027)
2050	195.344	6,044.979	1.90%	1.62%	17.473	118.404	0.64%	0.54%	17.473	2,349	0.54%	599.165	786,339	(138,027)
2051	164.967	6,320.872	1.90%	1.62%	18.160	123.086	0.63%	0.53%	18.160	2,159	0.53%	619.165	818,027	(145,027)
2052	138.479	6,602.680	1.90%	1.62%	18.875	127.917	0.63%	0.52%	18.875	2,009	0.52%	639.614	851,027	(152,027)
2053	113.354	6,892.984	1.90%	1.62%	19.618	132.901	0.62%	0.52%	19.618	1,879	0.51%	660.339	885,027	(159,027)
2054	90.351	7,192.000	1.89%	1.62%	19.662	137.320	0.61%	0.51%	19.662	1,769	0.51%	681.614	920,027	(166,027)
2055	70.920	7,498.796	1.88%	1.61%	20.438	142.631	0.61%	0.51%	20.438	1,679	0.51%	703.165	956,027	(173,027)
2056	56.002	7,812.827	1.87%	1.61%	20.459	147.315	0.60%	0.50%	20.459	1,609	0.50%	725.165	993,027	(180,027)
2057	43.538	8,136.549	1.87%	1.61%	21.268	152.918	0.59%	0.49%	21.268	1,559	0.49%	747.614	1,031,027	(187,027)
2058	33.158	8,470.937	1.86%	1.61%	21.268	157.844	0.59%	0.49%	21.268	1,519	0.49%	770.165	1,070,027	(194,027)
2059	25.139	8,816.173	1.84%	1.60%	21.142	162.902	0.58%	0.48%	21.142	1,489	0.48%	793.165	1,110,027	(201,027)
2060	19.322	9,172.930	1.83%	1.60%	21.142	168.082	0.58%	0.48%	21.142	1,449	0.48%	816.614	1,151,027	(208,027)
2061	14.693	9,542.777	1.81%	1.41%	38.765	173.398	0.56%	0.47%	38.765	1,419	0.47%	840.614	1,200,027	(215,027)
					\$3,520.694	\$4,534.766			\$3,520.694	\$4,534.766		\$4,196.280	\$5,781.302	(\$2,274.158)

⁽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 1, 2013.

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

Exhibit A3



HB 2333 vs. Annuitization Rate of 5%
State/School Group

(1) Fiscal Year	(2) Total Payroll	(3) Employer Contribution Rate		(5) (6) Employer Contribution Amount (\$M)			(8) Present Value of Difference
		HB 2333	5% Annuitization	5% Annuitization		Difference	
			Rate	HB 2333	Rate		
2013	\$ 4,391.75	9.37%	9.37%	\$ 411.51	\$ 411.51	\$ -	\$ -
2014	4,535.95	10.27% *	10.27% *	504.89	504.89	-	-
2015	4,668.66	11.27% *	11.27% *	565.65	565.65	-	-
2016	4,814.29	12.37% *	12.37% *	635.47	635.47	-	-
2017	4,971.08	13.57% *	13.57% *	714.97	714.97	-	-
2018	5,138.05	14.77% *	14.77% *	799.74	799.74	-	-
2019	5,315.15	15.97% *	15.97% *	890.14	890.14	-	-
2020	5,502.86	16.96% *	16.89% *	975.27	971.04	(4.23)	(2.38)
2021	5,701.82	17.16% *	17.05% *	1,020.71	1,014.63	(6.07)	(3.16)
2022	5,912.23	17.26% *	17.12% *	1,063.03	1,055.05	(7.98)	(3.84)
2023	6,133.19	17.25% *	17.10% *	1,106.62	1,097.28	(9.34)	(4.16)
2024	6,364.33	17.18% *	17.00% *	1,142.50	1,131.13	(11.36)	(4.69)
2025	6,606.19	17.08% *	16.88% *	1,177.88	1,164.31	(13.57)	(5.19)
2026	6,859.09	16.96% *	16.73% *	1,213.05	1,197.14	(15.91)	(5.63)
2027	7,123.55	16.80% *	16.55% *	1,247.22	1,229.02	(18.20)	(5.96)
2028	7,399.97	16.62%	16.34%	1,229.79	1,209.19	(20.60)	(6.25)
2029	7,688.78	16.41%	16.10%	1,262.07	1,238.20	(23.87)	(6.70)
2030	7,990.01	16.17%	15.82%	1,291.81	1,264.15	(27.66)	(7.19)
2031	8,303.69	15.86%	15.49%	1,317.30	1,285.87	(31.43)	(7.57)
2032	8,630.79	15.65%	15.24%	1,350.47	1,315.76	(34.71)	(7.74)
2033	8,971.62	6.27%	5.94%	562.50	533.05	(29.44)	(6.08)
2034	9,326.24	4.66%	4.34%	434.51	404.64	(29.87)	(5.71)
2035	9,695.31	3.04%	2.71%	294.33	262.75	(31.58)	(5.59)
2036	10,079.36	1.93%	1.59%	194.33	160.69	(33.64)	(5.51)
2037	10,478.46	1.44%	1.11%	150.97	116.25	(34.73)	(5.27)
2038	10,893.57	1.15%	0.81%	124.75	87.86	(36.89)	(5.18)
2039	11,325.89	1.01%	0.65%	114.37	74.11	(40.26)	(5.24)
2040	11,776.61	0.97%	0.60%	113.75	71.12	(42.63)	(5.14)
2041	12,248.24	0.96%	0.59%	117.93	72.83	(45.09)	(5.03)
2042	12,742.53	1.00%	0.62%	127.31	78.38	(48.93)	(5.05)
2043	13,259.06	1.05%	0.66%	138.62	86.99	(51.63)	(4.94)
2044	13,796.65	1.09%	0.70%	150.69	96.29	(54.40)	(4.82)
2045	14,354.13	1.14%	0.74%	163.40	106.19	(57.22)	(4.69)
2046	14,931.56	1.19%	0.79%	178.36	118.26	(60.10)	(4.56)
2047	15,529.63	1.24%	0.83%	192.72	129.66	(63.06)	(4.43)
2048	16,145.83	1.29%	0.87%	207.97	140.07	(67.90)	(4.42)
2049	16,780.21	1.33%	0.91%	223.82	152.85	(70.97)	(4.28)
2050	17,437.36	1.37%	0.94%	238.91	164.69	(74.23)	(4.14)
2051	18,121.06	1.41%	0.99%	254.98	179.04	(75.94)	(3.92)
2052	18,832.61	1.43%	1.01%	269.97	190.62	(79.35)	(3.80)
2053	19,572.49	1.47%	1.04%	287.51	202.73	(84.78)	(3.76)
2054	20,342.54	1.48%	1.06%	301.80	215.36	(86.44)	(3.55)
2055	21,144.42	1.51%	1.07%	318.75	226.50	(92.24)	(3.50)
2056	21,979.24	1.52%	1.09%	334.24	240.31	(93.92)	(3.30)
2057	22,848.28	1.53%	1.11%	350.32	252.53	(97.79)	(3.18)
2058	23,752.99	1.54%	1.12%	364.63	265.20	(99.43)	(3.00)
2059	24,694.80	1.55%	1.12%	381.89	275.95	(105.94)	(2.96)
2060	25,675.21	1.55%	1.12%	397.30	287.09	(110.21)	(2.85)
2061	26,695.83	1.54%	1.12%	410.63	298.65	(111.99)	(2.68)

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

Total	\$ 27,321.35	\$ 25,185.81	\$ (2,135.54)	\$ (197.02)
Present Value at 8% as of July 1, 2012	\$ 9,505.50	\$ 9,308.48	\$ (197.02)	

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



Exhibit B3

Kansas Public Employee Retirement System
 Comparison of State/School Group Employer Contributions for Retirement Benefits
 HB 2333 vs. Annuitization Rate of 5%

FYE	Payroll (\$M)			HB 2333				Annuitization Rate of 5%				Total Employer Cost ^(c)	Total Employer Cost ^(c)	Difference ^(c)	Present Value of Difference
	Tier 1/2	Tier 3	Total	Employer Contribution Rate	Employer Normal Cost Rate	Employer Normal Cost ^(c)	UAL Payment ^(c)	UAL Normal Cost ^(c)	Employer Normal Cost Rate	Employer Normal Cost ^(c)	UAL Payment ^(c)				
2013	\$4,391,751	\$0,000	\$4,391,751	9.37%	3.71%	\$162,865	\$248,642	\$411,507	9.37%	3.71%	\$162,865	\$248,642	\$411,507	\$0,000	\$0,000
2014	4,535,951	0,000	4,535,951	10.27%	3.71%	168,213	336,678	504,891	10.27%	3.71%	168,213	336,678	504,891	0,000	0,000
2015	4,668,664	0,000	4,668,664	11.27%	2.84%	132,642	493,008	565,650	11.27%	2.84%	132,642	493,008	565,650	0,000	0,000
2016	4,633,317	180,973	4,814,290	12.37%	2.33%	112,059	523,408	635,467	12.37%	2.33%	112,059	523,408	635,467	0,000	0,000
2017	4,437,428	533,651	4,971,079	13.57%	2.25%	112,042	602,924	714,966	13.57%	2.25%	112,042	602,924	714,966	0,000	0,000
2018	4,265,801	872,251	5,138,052	14.77%	2.16%	111,138	688,599	799,738	14.77%	2.16%	109,889	782,337	892,226	0,000	0,000
2019	4,107,212	1,207,933	5,315,145	15.97%	2.08%	110,362	779,775	890,137	15.97%	2.08%	107,800	864,451	972,251	0,000	0,000
2020	3,955,887	1,546,970	5,502,857	16.96%	2.00%	110,272	865,001	975,274	16.89%	1.94%	106,591	950,246	1,056,837	0,000	0,000
2021	3,812,002	1,889,819	5,701,821	17.16%	1.94%	110,646	910,061	1,020,707	17.05%	1.85%	105,713	908,921	1,014,634	(3,157)	(3,157)
2022	3,677,401	2,234,826	5,912,227	17.26%	1.88%	111,012	952,020	1,063,031	17.12%	1.77%	104,805	950,246	1,055,051	(7,980)	(7,980)
2023	3,549,282	2,583,907	6,133,189	17.25%	1.82%	111,821	994,800	1,106,621	17.10%	1.70%	104,320	992,960	1,097,280	(9,341)	(4,163)
2024	3,423,345	2,940,988	6,364,333	17.18%	1.77%	112,818	1,029,677	1,142,495	17.00%	1.63%	104,003	1,027,131	1,131,134	(11,361)	(4,688)
2025	3,300,016	3,306,178	6,606,194	17.08%	1.73%	114,411	1,063,473	1,177,884	16.88%	1.58%	104,139	1,060,170	1,164,309	(13,575)	(5,187)
2026	3,177,667	3,681,424	6,859,091	16.96%	1.70%	116,483	1,096,614	1,213,097	16.73%	1.53%	104,662	1,092,499	1,197,140	(15,907)	(5,628)
2027	3,057,531	4,066,022	7,123,553	16.80%	1.66%	118,299	1,128,922	1,247,221	16.55%	1.48%	105,083	1,123,935	1,229,018	(18,203)	(5,963)
2028	2,941,604	4,458,369	7,399,973	16.62%	1.64%	121,273	1,168,516	1,289,789	16.34%	1.44%	106,597	1,102,596	1,209,193	(20,596)	(6,248)
2029	2,829,023	4,859,758	7,688,781	16.41%	1.61%	124,134	1,213,940	1,338,074	16.10%	1.40%	107,951	1,130,251	1,238,202	(23,871)	(6,705)
2030	2,717,940	5,272,066	7,990,006	16.17%	1.60%	127,661	1,264,144	1,391,805	15.82%	1.37%	109,593	1,154,556	1,264,149	(26,556)	(7,193)
2031	2,606,771	5,696,923	8,303,694	15.86%	1.58%	131,531	1,315,768	1,447,299	15.49%	1.35%	111,729	1,174,142	1,285,871	(31,428)	(7,568)
2032	2,495,574	6,135,220	8,630,794	15.65%	1.57%	135,253	1,370,469	1,505,722	15.24%	1.32%	114,353	1,201,407	1,315,760	(34,709)	(7,739)
2033	2,383,957	6,587,666	8,971,623	15.41%	1.56%	139,934	1,425,563	1,565,497	15.04%	1.30%	116,771	1,160,283	1,277,056	(39,443)	(8,079)
2034	2,271,424	7,054,817	9,326,241	15.19%	1.55%	144,460	1,480,406	1,624,866	14.82%	1.29%	120,191	1,120,441	1,240,632	(44,234)	(8,350)
2035	2,157,909	7,537,402	9,695,311	15.00%	1.55%	149,872	1,535,335	1,685,207	14.61%	1.27%	123,138	1,079,612	1,202,750	(49,085)	(8,590)
2036	2,042,813	8,034,550	10,077,363	14.81%	1.54%	155,025	1,590,310	1,740,325	14.41%	1.25%	126,420	1,029,868	1,156,288	(53,937)	(8,820)
2037	1,924,778	8,553,680	10,478,458	14.61%	1.53%	160,405	1,645,245	1,795,650	14.21%	1.24%	129,868	980,153	1,109,021	(58,825)	(9,051)
2038	1,804,761	9,088,811	10,893,572	14.41%	1.52%	166,142	1,700,187	1,850,329	14.01%	1.23%	133,612	930,466	1,064,078	(63,753)	(9,282)
2039	1,683,573	9,642,322	11,325,895	14.21%	1.52%	172,136	1,755,121	1,905,257	13.81%	1.21%	137,559	880,779	1,018,338	(68,688)	(9,513)
2040	1,561,939	10,214,673	11,776,612	14.01%	1.52%	178,524	1,810,055	1,958,579	13.61%	1.20%	141,779	831,092	952,871	(73,781)	(9,744)
2041	1,443,776	10,804,462	12,248,238	13.81%	1.51%	185,291	1,864,989	2,010,280	13.41%	1.19%	146,323	781,405	927,728	(78,883)	(9,975)
2042	1,332,031	11,410,498	12,742,529	13.61%	1.51%	192,299	1,920,918	2,062,217	13.21%	1.19%	151,015	731,718	882,733	(84,029)	(10,206)
2043	1,225,949	12,033,107	13,259,056	13.41%	1.51%	199,615	1,975,852	2,115,467	13.01%	1.18%	155,940	682,031	837,971	(89,175)	(10,437)
2044	1,122,199	12,674,452	13,796,651	13.21%	1.50%	207,235	2,030,787	2,168,022	12.81%	1.17%	161,137	632,344	793,481	(94,321)	(10,668)
2045	1,016,520	13,337,605	14,354,125	13.01%	1.50%	215,080	2,085,721	2,220,801	12.61%	1.16%	166,476	582,657	749,133	(99,569)	(10,900)
2046	909,395	14,022,170	14,931,565	12.81%	1.49%	223,158	2,140,655	2,275,813	12.41%	1.15%	172,017	533,070	705,087	(104,819)	(11,132)
2047	804,158	14,725,470	15,529,628	12.61%	1.49%	231,544	2,195,589	2,330,133	12.21%	1.14%	177,799	483,483	661,282	(110,169)	(11,364)
2048	696,334	15,449,500	16,145,834	12.41%	1.49%	240,260	2,250,523	2,385,783	12.01%	1.14%	183,063	433,896	617,999	(115,419)	(11,596)
2049	583,748	16,196,459	16,780,207	12.21%	1.49%	250,663	2,305,457	2,440,120	11.81%	1.13%	189,764	384,309	573,073	(120,670)	(11,828)
2050	473,288	16,964,075	17,437,363	12.01%	1.49%	259,912	2,360,391	2,495,303	11.61%	1.12%	196,073	334,722	530,795	(125,921)	(12,060)
2051	378,135	17,745,927	18,124,062	11.81%	1.49%	269,474	2,415,325	2,550,800	11.41%	1.12%	204,411	285,135	490,546	(131,175)	(12,292)
2052	301,454	18,551,157	18,852,611	11.61%	1.48%	279,386	2,470,259	2,605,645	11.21%	1.12%	211,331	235,549	447,880	(136,426)	(12,524)
2053	235,790	19,336,696	19,572,486	11.41%	1.49%	291,428	2,525,193	2,660,621	11.01%	1.12%	218,390	185,962	404,352	(141,677)	(12,756)
2054	179,043	20,163,497	20,342,540	11.21%	1.48%	301,802	2,580,127	2,715,929	10.81%	1.12%	225,500	136,375	361,875	(146,928)	(12,988)
2055	133,919	21,010,497	21,144,416	11.01%	1.49%	314,518	2,635,061	2,770,579	10.61%	1.11%	234,968	86,788	321,756	(152,179)	(13,220)
2056	101,132	21,878,108	21,979,240	10.81%	1.48%	325,446	2,689,995	2,825,441	10.41%	1.11%	244,709	37,201	281,910	(157,430)	(13,452)
2057	76,146	22,772,132	22,848,278	10.61%	1.48%	338,900	2,744,929	2,880,829	10.21%	1.11%	255,530	12,614	268,144	(162,681)	(13,684)
2058	56,397	23,696,589	23,752,986	10.41%	1.48%	350,383	2,800,863	2,936,246	10.01%	1.11%	266,825	3,617	270,442	(167,932)	(13,916)
2059	41,440	24,653,360	24,704,800	10.21%	1.48%	364,600	2,856,797	2,991,397	9.81%	1.11%	278,478	2,719	281,197	(173,183)	(14,148)
2060	30,676	25,644,539	25,675,215	10.01%	1.48%	379,331	2,912,731	3,047,062	9.61%	1.10%	289,957	1,735	291,692	(178,434)	(14,380)
2061	22,753	26,673,076	26,695,829	9.81%	1.47%	391,947	2,968,665	3,101,612	9.41%	1.10%	293,307	5,339	298,646	(183,685)	(14,612)
			\$9,533,600			\$1,787,751	\$27,321,350	\$27,321,350			\$7,730,011	\$17,455,798	\$25,185,809	(\$2,135,542)	(\$197,025)

^(c) indicates additional contributions from ELARF are added to this contribution rate to get the total contribution amount shown.

^(d) 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 1, 2013.

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

Exhibit A4



HB 2333 vs. Annuity Rate of 5%
Local Group

(1)	(2)	(3) Employer Contribution Rate		(5)	(6) Employer Contribution Amount (\$M)		(7)	(8)
Fiscal Year	Total Payroll	HB 2333	5% Annuity Rate	HB 2333	5% Annuity Rate	Difference	Present Value of Difference	
2013	\$ 1,660.60	7.94%	7.94%	\$ 131.85	\$ 131.85	\$ -	\$ -	
2014	1,706.61	8.84%	8.84%	150.86	150.86	-	-	
2015	1,755.46	9.78%	9.78%	171.62	171.62	-	-	
2016	1,809.70	10.52%	10.52%	190.43	190.43	-	-	
2017	1,867.11	10.47%	10.44%	195.47	195.01	(0.46)	(0.33)	
2018	1,927.21	10.53%	10.48%	202.96	202.05	(0.91)	(0.59)	
2019	1,990.11	10.57%	10.50%	210.29	208.95	(1.34)	(0.81)	
2020	2,055.72	10.62%	10.51%	218.26	216.10	(2.16)	(1.21)	
2021	2,124.94	10.67%	10.55%	226.76	224.18	(2.59)	(1.35)	
2022	2,197.01	10.73%	10.58%	235.75	232.52	(3.24)	(1.56)	
2023	2,272.09	10.79%	10.62%	245.05	241.37	(3.68)	(1.64)	
2024	2,351.35	10.84%	10.67%	254.94	250.81	(4.13)	(1.71)	
2025	2,434.78	10.90%	10.71%	265.49	260.65	(4.85)	(1.85)	
2026	2,521.94	10.97%	10.75%	276.68	271.09	(5.58)	(1.98)	
2027	2,613.06	11.03%	10.80%	288.23	282.14	(6.09)	(2.00)	
2028	2,709.03	11.10%	10.84%	300.77	293.61	(7.16)	(2.17)	
2029	2,809.54	11.17%	10.88%	313.76	305.75	(8.00)	(2.25)	
2030	2,914.71	11.25%	10.94%	327.77	318.89	(8.88)	(2.31)	
2031	3,024.53	11.33%	11.00%	342.53	332.73	(9.80)	(2.36)	
2032	3,138.76	4.94%	4.65%	154.92	146.05	(8.87)	(1.98)	
2033	3,257.50	3.90%	3.62%	126.94	117.80	(9.14)	(1.89)	
2034	3,381.27	2.81%	2.53%	94.96	85.55	(9.41)	(1.80)	
2035	3,510.46	2.46%	2.17%	86.39	76.01	(10.38)	(1.84)	
2036	3,644.94	2.22%	1.93%	81.05	70.38	(10.67)	(1.75)	
2037	3,785.22	2.12%	1.81%	80.11	68.40	(11.71)	(1.78)	
2038	3,931.55	2.05%	1.73%	80.58	68.17	(12.40)	(1.74)	
2039	4,084.19	2.00%	1.68%	81.80	68.68	(13.13)	(1.71)	
2040	4,243.22	1.98%	1.64%	83.86	69.56	(14.30)	(1.72)	
2041	4,408.81	1.95%	1.62%	85.96	71.31	(14.65)	(1.63)	
2042	4,581.37	1.93%	1.60%	88.56	73.11	(15.45)	(1.60)	
2043	4,761.25	1.93%	1.57%	91.72	74.96	(16.76)	(1.60)	
2044	4,948.86	1.92%	1.56%	94.98	77.34	(17.64)	(1.56)	
2045	5,144.01	1.91%	1.55%	98.34	79.79	(18.54)	(1.52)	
2046	5,346.97	1.90%	1.54%	101.78	82.31	(19.48)	(1.48)	
2047	5,557.90	1.91%	1.53%	105.88	84.89	(21.00)	(1.48)	
2048	5,777.07	1.90%	1.53%	109.54	88.11	(21.43)	(1.39)	
2049	6,004.27	1.90%	1.52%	113.90	91.44	(22.45)	(1.35)	
2050	6,240.32	1.90%	1.52%	118.40	94.90	(23.51)	(1.31)	
2051	6,485.84	1.90%	1.51%	123.09	97.84	(25.25)	(1.30)	
2052	6,741.16	1.90%	1.51%	127.92	101.52	(26.39)	(1.26)	
2053	7,006.34	1.90%	1.50%	132.90	105.33	(27.57)	(1.22)	
2054	7,282.35	1.89%	1.50%	137.32	109.26	(28.06)	(1.15)	
2055	7,569.72	1.88%	1.50%	142.63	113.34	(29.29)	(1.11)	
2056	7,868.83	1.87%	1.49%	147.31	117.55	(29.76)	(1.05)	
2057	8,180.09	1.87%	1.48%	152.92	121.07	(31.85)	(1.04)	
2058	8,504.09	1.86%	1.47%	157.84	124.65	(33.19)	(1.00)	
2059	8,841.31	1.84%	1.45%	162.90	128.32	(34.58)	(0.97)	
2060	9,192.25	1.83%	1.45%	168.08	132.98	(35.10)	(0.91)	
2061	9,557.47	1.81%	1.43%	173.40	136.85	(36.55)	(0.87)	
			Total	\$ 8,055.46	\$ 7,358.10	\$ (697.36)	\$ (67.11)	
			Present Value at 8% as of July 1, 2012	\$ 2,445.04	\$ 2,377.92	\$ (67.11)		

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 1, 2013.

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



Exhibit B4
Kansas Public Employee Retirement System
Comparison of Local Group Employer Contributions for Retirement Benefits
HB 2333 vs. Annuitization Rate of 5%

F.Y.E.	Payroll (\$M)		Employer Contribution Rate			Annuitization Rate of 5%			Total Employer Cost ^(c)	Difference ^(c)	Present Value of Difference
	Tier 1/2	Tier 3	Rate	Normal Cost Rate	UAL Payment ^(b)	Contribution Rate	Normal Cost Rate	Normal Cost Rate			
2013	\$1,660.604	\$0.000	7.94%	2.91%	\$83,491	7.94%	2.91%	\$48,361	\$83,491	\$0.000	\$0.000
2014	1,706.606	0.000	8.84%	2.91%	101,163	8.84%	2.91%	49,701	101,163	0.000	0.000
2015	1,753.461	0.000	9.78%	2.03%	136,048	9.78%	2.03%	35,570	136,048	0.000	0.000
2016	1,658.682	151,015	10.52%	1.95%	155,091	10.52%	1.95%	35,339	155,091	0.000	0.000
2017	1,575.692	291,415	10.47%	1.88%	160,384	10.44%	1.83%	34,627	160,384	(0.464)	(0.328)
2018	1,504.853	442,352	10.53%	1.83%	167,667	10.48%	1.78%	34,382	167,667	(0.908)	(0.595)
2019	1,440.724	549,389	10.79%	1.79%	174,752	10.50%	1.72%	34,223	174,752	(1.335)	(0.810)
2020	1,381.836	673,888	10.62%	1.75%	182,343	10.51%	1.66%	34,169	182,343	(2.160)	(1.213)
2021	1,328.487	796,450	10.67%	1.71%	190,394	10.55%	1.61%	34,206	190,394	(2.588)	(1.345)
2022	1,278.151	918,861	10.73%	1.68%	198,830	10.58%	1.56%	34,346	198,830	(3.238)	(1.559)
2023	1,229.411	1,042,682	10.79%	1.66%	207,442	10.62%	1.52%	34,612	207,442	(3.681)	(1.640)
2024	1,182.829	1,168,523	10.84%	1.63%	216,560	10.67%	1.49%	34,952	216,560	(4.135)	(1.706)
2025	1,138.492	1,296,287	10.90%	1.61%	226,191	10.71%	1.46%	35,431	226,191	(4.845)	(1.851)
2026	1,094.860	1,427,085	10.97%	1.60%	236,306	10.75%	1.43%	36,047	236,306	(5.584)	(1.976)
2027	1,052.036	1,561,025	11.03%	1.59%	246,673	10.84%	1.41%	37,603	246,673	(6.092)	(1.956)
2028	1,011.323	1,697,706	11.10%	1.58%	257,900	10.88%	1.39%	38,566	257,900	(7.160)	(2.172)
2029	972.150	1,837,388	11.17%	1.58%	269,435	10.94%	1.37%	39,665	269,435	(8.003)	(2.248)
2030	934.164	1,980,546	11.25%	1.58%	281,852	11.00%	1.36%	40,866	281,852	(8.880)	(2.309)
2031	896.687	2,127,843	11.33%	1.58%	294,892	11.09%	1.35%	42,162	294,892	(9.796)	(2.359)
2032	859.356	2,279,406	4.94%	1.58%	300,765	11.17%	1.34%	43,525	300,765	(10.668)	(2.408)
2033	821.485	2,436,013	3.90%	1.58%	313,756	11.25%	1.33%	44,973	313,756	(11.549)	(2.457)
2034	783.430	2,597,839	2.81%	1.58%	327,774	11.33%	1.32%	46,518	327,774	(12.430)	(2.506)
2035	745.673	2,764,790	2.46%	1.58%	342,530	11.41%	1.31%	48,066	342,530	(13.311)	(2.555)
2036	707.827	2,937,117	2.22%	1.58%	358,386	11.49%	1.30%	49,615	358,386	(14.192)	(2.604)
2037	669.798	3,115,419	2.12%	1.58%	375,374	11.57%	1.29%	51,164	375,374	(15.073)	(2.653)
2038	631.744	3,299,802	2.05%	1.59%	393,499	11.65%	1.28%	52,713	393,499	(15.954)	(2.702)
2039	593.492	3,490,700	2.00%	1.59%	412,764	11.73%	1.27%	54,262	412,764	(16.835)	(2.751)
2040	555.203	3,688,013	1.98%	1.60%	433,179	11.81%	1.26%	55,811	433,179	(17.716)	(2.800)
2041	516.439	3,892,373	1.95%	1.60%	454,754	11.89%	1.25%	57,360	454,754	(18.597)	(2.849)
2042	477.700	4,103,667	1.93%	1.60%	477,491	11.97%	1.24%	58,909	477,491	(19.478)	(2.898)
2043	439.470	4,321,777	1.93%	1.61%	501,396	12.05%	1.23%	60,458	501,396	(20.359)	(2.947)
2044	402.975	4,545,881	1.92%	1.61%	526,471	12.13%	1.22%	62,007	526,471	(21.240)	(3.000)
2045	366.511	4,777,500	1.91%	1.61%	552,716	12.21%	1.21%	63,556	552,716	(22.121)	(3.053)
2046	330.966	5,016,003	1.90%	1.61%	580,141	12.29%	1.20%	65,105	580,141	(23.002)	(3.106)
2047	295.949	5,261,952	1.91%	1.62%	608,646	12.37%	1.19%	66,654	608,646	(23.883)	(3.159)
2048	262.213	5,514,858	1.90%	1.62%	638,231	12.45%	1.18%	68,203	638,231	(24.764)	(3.212)
2049	228.104	5,776,162	1.90%	1.62%	668,896	12.53%	1.17%	69,752	668,896	(25.645)	(3.265)
2050	195.344	6,044,979	1.90%	1.62%	700,641	12.61%	1.16%	71,301	700,641	(26.526)	(3.318)
2051	164.967	6,320,872	1.90%	1.62%	733,466	12.69%	1.15%	72,850	733,466	(27.407)	(3.371)
2052	138.479	6,602,680	1.90%	1.62%	767,381	12.77%	1.14%	74,399	767,381	(28.288)	(3.424)
2053	113.354	6,892,984	1.90%	1.62%	802,396	12.85%	1.13%	75,948	802,396	(29.169)	(3.477)
2054	90.351	7,192,000	1.89%	1.62%	838,511	12.93%	1.12%	77,497	838,511	(30.050)	(3.530)
2055	70.920	7,498,796	1.88%	1.61%	875,726	13.01%	1.11%	79,046	875,726	(30.931)	(3.583)
2056	56.002	7,812,827	1.87%	1.61%	914,041	13.09%	1.10%	80,595	914,041	(31.812)	(3.636)
2057	43.538	8,136,549	1.87%	1.61%	953,456	13.17%	1.09%	82,144	953,456	(32.693)	(3.689)
2058	33.158	8,470,937	1.86%	1.61%	993,871	13.25%	1.08%	83,693	993,871	(33.574)	(3.742)
2059	25.139	8,816,173	1.84%	1.60%	1,035,286	13.33%	1.07%	85,242	1,035,286	(34.455)	(3.795)
2060	19.322	9,172,930	1.83%	1.60%	1,077,691	13.41%	1.06%	86,791	1,077,691	(35.336)	(3.848)
2061	14.693	9,542,777	1.81%	1.41%	1,121,096	13.49%	1.05%	88,340	1,121,096	(36.217)	(3.901)
					\$3,520,694			\$2,939,527	\$4,418,568	(\$697,365)	(\$67,114)
					\$8,534,766			\$7,358,095	\$7,358,095		

^(c) In millions

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

Exhibit A5



HB 2333 vs. Guaranteed Interest Credit of 4.25% and 5% Annuitization Rate
State/School Group

(1) Fiscal Year	(2) Total Payroll	(3) Employer Contribution Rate		(5) (6) (7) Employer Contribution Amount (\$M)			(8) Present Value of Difference
		HB 2333	4.25% Guar Int/ 5% Annuitization	HB 2333	4.25% Guar Int/ 5% Annuitization	Difference	
2013	\$ 4,391.75	9.37%	9.37%	\$ 411.51	\$ 411.51	\$ -	\$ -
2014	4,535.95	10.27% *	10.27% *	504.89	504.89	-	-
2015	4,668.66	11.27% *	11.27% *	565.65	565.65	-	-
2016	4,814.29	12.37% *	12.37% *	635.47	635.47	-	-
2017	4,971.08	13.57% *	13.57% *	714.97	714.97	-	-
2018	5,138.05	14.77% *	14.77% *	799.74	799.74	-	-
2019	5,315.15	15.97% *	15.97% *	890.14	890.14	-	-
2020	5,502.86	16.96% *	16.69% *	975.27	960.26	(15.02)	(8.43)
2021	5,701.82	17.16% *	16.80% *	1,020.71	999.88	(20.83)	(10.83)
2022	5,912.23	17.26% *	16.79% *	1,063.03	1,035.24	(27.79)	(13.38)
2023	6,133.19	17.25% *	16.69% *	1,106.62	1,072.10	(34.53)	(15.39)
2024	6,364.33	17.18% *	16.53% *	1,142.50	1,100.79	(41.71)	(17.21)
2025	6,606.19	17.08% *	16.33% *	1,177.88	1,128.08	(49.80)	(19.03)
2026	6,859.09	16.96% *	16.12% *	1,213.05	1,155.29	(57.76)	(20.44)
2027	7,123.55	16.80% *	15.86% *	1,247.22	1,180.30	(66.92)	(21.92)
2028	7,399.97	16.62%	15.60%	1,229.79	1,154.12	(75.67)	(22.95)
2029	7,688.78	16.41%	15.28%	1,262.07	1,175.02	(87.06)	(24.45)
2030	7,990.01	16.17%	14.93%	1,291.81	1,193.24	(98.57)	(25.63)
2031	8,303.69	15.86%	14.51%	1,317.30	1,205.21	(112.09)	(26.99)
2032	8,630.79	15.65%	14.16%	1,350.47	1,222.32	(128.15)	(28.57)
2033	8,971.62	6.27%	5.08%	562.50	455.99	(106.51)	(21.99)
2034	9,326.24	4.66%	3.47%	434.51	323.54	(110.96)	(21.21)
2035	9,695.31	3.04%	1.84%	294.33	178.20	(116.13)	(20.55)
2036	10,079.36	1.93%	0.70%	194.33	70.90	(123.43)	(20.23)
2037	10,478.46	1.44%	0.20%	150.97	20.77	(130.20)	(19.76)
2038	10,893.57	1.15%	0.00%	124.75	-	(124.75)	(17.53)
2039	11,325.89	1.01%	0.00%	114.37	-	(114.37)	(14.88)
2040	11,776.61	0.97%	0.00%	113.75	-	(113.75)	(13.70)
2041	12,248.24	0.96%	0.00%	117.93	-	(117.93)	(13.15)
2042	12,742.53	1.00%	0.00%	127.31	-	(127.31)	(13.15)
2043	13,259.06	1.05%	0.00%	138.62	-	(138.62)	(13.26)
2044	13,796.65	1.09%	0.00%	150.69	-	(150.69)	(13.34)
2045	14,354.13	1.14%	0.00%	163.40	-	(163.40)	(13.40)
2046	14,931.56	1.19%	0.00%	178.36	-	(178.36)	(13.54)
2047	15,529.63	1.24%	0.00%	192.72	-	(192.72)	(13.55)
2048	16,145.83	1.29%	0.00%	207.97	-	(207.97)	(13.53)
2049	16,780.21	1.33%	0.00%	223.82	-	(223.82)	(13.49)
2050	17,437.36	1.37%	0.00%	238.91	-	(238.91)	(13.33)
2051	18,121.06	1.41%	0.00%	254.98	-	(254.98)	(13.17)
2052	18,832.61	1.43%	0.00%	269.97	-	(269.97)	(12.91)
2053	19,572.49	1.47%	0.00%	287.51	-	(287.51)	(12.73)
2054	20,342.54	1.48%	0.00%	301.80	-	(301.80)	(12.38)
2055	21,144.42	1.51%	0.00%	318.75	-	(318.75)	(12.10)
2056	21,979.24	1.52%	0.00%	334.24	-	(334.24)	(11.75)
2057	22,848.28	1.53%	0.00%	350.32	-	(350.32)	(11.41)
2058	23,752.99	1.54%	0.00%	364.63	-	(364.63)	(10.99)
2059	24,694.80	1.55%	0.00%	381.89	-	(381.89)	(10.66)
2060	25,675.21	1.55%	0.00%	397.30	-	(397.30)	(10.27)
2061	26,695.83	1.54%	0.00%	410.63	-	(410.63)	(9.83)

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

Total	\$ 27,321.35	\$ 20,153.59	\$ (7,167.76)	\$ (667.03)
Present Value at 8% as of July 1, 2012	\$ 9,505.50	\$ 8,838.47	\$ (667.03)	

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 1, 2013.

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



Exhibit B5

Kansas Public Employee Retirement System
 Comparison of State/School Group Employer Contributions for Retirement Benefits
 HB 2333 vs. Guaranteed Interest Credit of 4.25% and 5% Amortization

FYE	Payroll (\$M)		Employer Contribution Rate	Employer Normal Cost Rate	Employer Normal Cost ⁽¹⁾	UAL Payment ⁽²⁾	Total Employer Cost ⁽³⁾	Employer Contribution Rate	Employer Normal Cost Rate	Employer Normal Cost ⁽¹⁾	UAL Payment ⁽²⁾	Total Employer Cost ⁽³⁾	Difference ⁽⁴⁾	Present Value of Difference
	Tier 1/2	Tier 3												
2013	\$4,391.751	\$0.000	9.37%	3.71%	\$162,865	\$248,642	\$411,507	9.37%	3.71%	\$162,865	\$248,642	\$411,507	\$0.000	\$0.000
2014	4,535.951	0.000	10.27%	3.71%	168,213	336,678	504,891	10.27%	3.71%	168,213	336,678	504,891	0.000	0.000
2015	4,668.664	0.000	11.27%	2.84%	132,642	433,008	565,650	11.27%	2.84%	132,642	433,008	565,650	0.000	0.000
2016	4,633.317	180.973	12.37%	2.33%	112,059	523,408	635,467	12.37%	2.33%	112,059	523,408	635,467	0.000	0.000
2017	4,437.428	533.651	13.57%	2.25%	112,042	602,924	714,966	13.57%	2.25%	112,042	602,924	714,966	0.000	0.000
2018	4,265.801	872.251	14.77%	2.16%	111,138	688,599	799,738	14.77%	2.07%	106,577	693,161	799,738	0.000	0.000
2019	4,107.212	1,207.933	15.97%	2.08%	110,362	779,775	890,137	15.97%	1.91%	101,259	788,878	890,137	0.000	0.000
2020	3,955.887	1,546.970	16.96%	2.00%	110,272	865,001	975,274	16.96%	1.76%	96,906	863,350	960,256	(15,017)	(8,432)
2021	3,812.002	1,889.819	17.16%	1.94%	110,646	910,061	1,020,707	16.80%	1.63%	92,666	907,210	999,877	(20,830)	(10,829)
2022	3,677.401	2,234.826	17.26%	1.88%	111,012	952,020	1,063,031	16.79%	1.50%	88,544	946,699	1,072,096	(34,525)	(15,388)
2023	3,463.345	2,940.988	17.25%	1.82%	111,821	994,800	1,106,621	16.69%	1.38%	84,656	987,440	1,128,080	(49,804)	(17,213)
2024	3,300.016	3,306.178	17.08%	1.77%	114,411	1,029,677	1,142,495	16.53%	1.27%	80,657	1,020,130	1,154,119	(21,925)	(22,954)
2025	3,177.667	3,681.424	16.96%	1.70%	116,433	1,096,614	1,213,047	16.12%	1.08%	73,763	1,081,524	1,180,296	(66,924)	(87,056)
2026	3,057.531	4,066.022	16.80%	1.66%	118,299	1,128,922	1,247,221	15.86%	0.99%	70,608	1,109,688	1,193,237	(98,568)	(25,634)
2027	2,941.604	4,458.369	16.62%	1.64%	121,273	1,108,516	1,229,789	15.28%	0.84%	67,803	1,086,316	1,175,017	(112,089)	(28,591)
2028	2,829.023	4,859.758	16.41%	1.61%	124,134	1,137,940	1,262,073	14.93%	0.78%	64,751	1,110,260	1,154,119	(106,510)	(21,989)
2029	2,717.940	5,272.066	16.17%	1.60%	127,661	1,164,144	1,291,805	14.51%	0.72%	60,131	1,145,079	1,205,210	(116,130)	(20,555)
2030	2,606.771	5,696.923	15.86%	1.58%	131,531	1,185,768	1,317,299	14.16%	0.67%	58,023	1,164,294	1,222,317	(123,431)	(20,229)
2031	2,495.574	6,135.220	15.65%	1.57%	135,253	1,215,216	1,350,469	14.00%	0.62%	55,853	1,180,134	1,239,542	(124,747)	(17,528)
2032	2,383.957	6,587.666	15.55%	1.56%	139,994	1,244,460	1,384,456	13.84%	0.59%	54,014	1,209,528	1,267,573	(117,926)	(13,703)
2033	2,271.424	7,054.817	15.34%	1.55%	144,460	1,274,460	1,419,920	13.70%	0.57%	52,162	1,236,039	1,295,774	(113,300)	(13,148)
2034	2,157.909	7,537.402	15.24%	1.54%	149,872	1,304,332	1,454,204	13.58%	0.56%	50,310	1,263,528	1,324,917	(108,689)	(13,256)
2035	2,046.334	8,036.550	15.19%	1.53%	155,025	1,333,114	1,489,139	13.47%	0.55%	48,455	1,291,144	1,354,074	(103,929)	(13,342)
2036	1,924.778	8,553.680	15.15%	1.53%	160,405	1,362,046	1,520,451	13.37%	0.54%	46,600	1,318,846	1,383,917	(99,071)	(13,470)
2037	1,804.761	9,088.811	15.11%	1.52%	166,142	1,391,156	1,558,298	13.28%	0.53%	44,745	1,346,601	1,413,662	(94,061)	(13,546)
2038	1,683.573	9,642.322	15.07%	1.52%	172,136	1,419,702	1,596,838	13.20%	0.52%	42,890	1,374,412	1,443,407	(89,051)	(13,622)
2039	1,561.939	10,214.673	15.03%	1.51%	178,524	1,448,471	1,635,995	13.12%	0.51%	41,035	1,402,227	1,473,152	(84,041)	(13,698)
2040	1,443.776	10,804.462	15.00%	1.51%	185,291	1,477,524	1,675,815	13.04%	0.50%	39,180	1,430,344	1,502,900	(79,031)	(13,774)
2041	1,332.031	11,410.498	15.00%	1.51%	192,299	1,506,992	1,716,291	12.96%	0.49%	37,325	1,458,469	1,532,645	(74,021)	(13,850)
2042	1,225.949	12,033.107	15.05%	1.51%	199,615	1,536,889	1,760,504	12.88%	0.48%	35,470	1,486,594	1,562,390	(69,011)	(13,926)
2043	1,122.199	12,674.452	15.09%	1.50%	207,255	1,567,066	1,805,321	12.80%	0.47%	33,615	1,514,609	1,592,135	(64,001)	(13,999)
2044	1,016.520	13,337.605	15.14%	1.50%	215,080	1,597,566	1,850,405	12.72%	0.46%	31,760	1,542,624	1,619,880	(59,000)	(14,071)
2045	909.395	14,022.170	15.19%	1.49%	223,138	1,628,446	1,900,584	12.64%	0.45%	30,005	1,570,639	1,647,625	(54,000)	(14,143)
2046	804.158	14,725.470	15.24%	1.49%	231,544	1,659,720	1,950,264	12.56%	0.44%	28,250	1,598,654	1,675,370	(49,000)	(14,215)
2047	696.334	15,449.500	15.29%	1.49%	240,260	1,691,408	2,000,344	12.48%	0.43%	26,495	1,626,669	1,703,115	(44,000)	(14,287)
2048	583.748	16,196.459	15.33%	1.49%	250,663	1,723,492	2,050,157	12.40%	0.42%	24,740	1,654,684	1,730,860	(39,000)	(14,359)
2049	473.288	16,964.075	15.37%	1.49%	259,836	1,755,976	2,100,000	12.32%	0.41%	22,985	1,682,699	1,758,605	(34,000)	(14,431)
2050	378.135	17,742.927	15.41%	1.49%	269,474	1,788,460	2,149,921	12.24%	0.40%	21,230	1,710,714	1,786,350	(29,000)	(14,503)
2051	301.454	18,531.157	15.43%	1.49%	279,386	1,821,144	2,199,842	12.16%	0.39%	19,475	1,738,729	1,814,095	(24,000)	(14,575)
2052	235.790	19,336.696	15.47%	1.49%	291,428	1,854,428	2,249,763	12.08%	0.38%	17,720	1,766,744	1,838,840	(19,000)	(14,647)
2053	179.048	20,163.497	15.51%	1.48%	301,802	1,887,712	2,299,515	12.00%	0.37%	15,965	1,794,759	1,863,585	(14,000)	(14,719)
2054	133.919	21,010.497	15.51%	1.49%	314,518	1,921,000	2,349,267	11.92%	0.36%	14,210	1,822,774	1,888,330	(9,000)	(14,791)
2055	101.132	21,878.108	15.52%	1.48%	328,446	1,954,288	2,399,019	11.84%	0.35%	12,455	1,850,789	1,913,075	(4,000)	(14,863)
2056	76.146	22,772.132	15.53%	1.48%	338,900	1,987,572	2,448,771	11.76%	0.34%	10,700	1,878,804	1,937,830	(1,000)	(14,935)
2057	56.397	23,696.589	15.54%	1.48%	350,383	2,020,856	2,498,523	11.68%	0.33%	8,945	1,906,819	1,957,585	(5,000)	(15,007)
2058	41.440	24,653.530	15.55%	1.48%	364,600	2,054,140	2,548,275	11.60%	0.32%	7,190	1,934,834	1,986,340	(1,000)	(15,079)
2059	30.676	25,644.533	15.55%	1.47%	391,947	2,087,424	2,598,027	11.52%	0.31%	5,435	1,962,849	2,014,095	(5,000)	(15,151)
2061	22.753	26,673.076	15.54%	1.47%	410,634	2,120,708	2,647,779	11.44%	0.30%	3,680	1,990,864	2,042,850	(5,000)	(15,223)
Total														\$20,153.586

⁽¹⁾ Indicates additional contributions from ELAF are added to this contribution rate to get the total contribution amount shown.
⁽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 1, 2013.
 All assumptions, including the 8% investment return, are assumed to be met each year in the future.

Exhibit A6



HB 2333 vs. Guaranteed Interest Credit of 4.25% and 5% Annuitization Rate
Local Group

(1) Fiscal Year	(2) Total Payroll	(3) Employer Contribution Rate		(5) HB 2333	(6) Employer Contribution Amount (\$M)		(7) Difference	(8) Present Value of Difference
		HB 2333	4.25% Guar Int/ 5% Annuitization		4.25% Guar Int/ 5% Annuitization			
					HB 2333	5% Annuitization		
2013	\$ 1,660.60	7.94%	7.94%	\$ 131.85	\$ 131.85	\$ -	\$ -	
2014	1,706.61	8.84%	8.84%	150.86	150.86	-	-	
2015	1,755.46	9.78%	9.78%	171.62	171.62	-	-	
2016	1,809.70	10.52%	10.52%	190.43	190.43	-	-	
2017	1,867.11	10.47%	10.37%	195.47	193.62	(1.85)	(1.31)	
2018	1,927.21	10.53%	10.33%	202.96	199.13	(3.82)	(2.50)	
2019	1,990.11	10.57%	10.28%	210.29	204.55	(5.74)	(3.48)	
2020	2,055.72	10.62%	10.23%	218.26	210.23	(8.03)	(4.51)	
2021	2,124.94	10.67%	10.19%	226.76	216.62	(10.14)	(5.27)	
2022	2,197.01	10.73%	10.17%	235.75	223.45	(12.30)	(5.92)	
2023	2,272.09	10.79%	10.15%	245.05	230.54	(14.51)	(6.47)	
2024	2,351.35	10.84%	10.13%	254.94	238.14	(16.80)	(6.93)	
2025	2,434.78	10.90%	10.11%	265.49	246.08	(19.41)	(7.42)	
2026	2,521.94	10.97%	10.09%	276.68	254.55	(22.13)	(7.83)	
2027	2,613.06	11.03%	10.08%	288.23	263.27	(24.96)	(8.18)	
2028	2,709.03	11.10%	10.05%	300.77	272.31	(28.46)	(8.63)	
2029	2,809.54	11.17%	10.03%	313.76	281.91	(31.85)	(8.95)	
2030	2,914.71	11.25%	10.01%	327.77	291.80	(35.97)	(9.35)	
2031	3,024.53	11.33%	9.98%	342.53	301.93	(40.60)	(9.78)	
2032	3,138.76	4.94%	3.81%	154.92	119.51	(35.42)	(7.90)	
2033	3,257.50	3.90%	2.75%	126.94	89.72	(37.21)	(7.68)	
2034	3,381.27	2.81%	1.65%	94.96	55.91	(39.05)	(7.46)	
2035	3,510.46	2.46%	1.27%	86.39	44.75	(41.63)	(7.37)	
2036	3,644.94	2.22%	1.01%	81.05	36.73	(44.31)	(7.26)	
2037	3,785.22	2.12%	0.86%	80.11	32.64	(47.47)	(7.20)	
2038	3,931.55	2.05%	0.76%	80.58	29.82	(50.75)	(7.13)	
2039	4,084.19	2.00%	0.68%	81.80	27.62	(54.18)	(7.05)	
2040	4,243.22	1.98%	0.62%	83.86	26.11	(57.75)	(6.96)	
2041	4,408.81	1.95%	0.57%	85.96	24.93	(61.02)	(6.81)	
2042	4,581.37	1.93%	0.53%	88.56	24.14	(64.42)	(6.65)	
2043	4,761.25	1.93%	0.49%	91.72	23.30	(68.42)	(6.54)	
2044	4,948.86	1.92%	0.45%	94.98	22.39	(72.59)	(6.43)	
2045	5,144.01	1.91%	0.43%	98.34	21.94	(76.39)	(6.26)	
2046	5,346.97	1.90%	0.40%	101.78	21.47	(80.31)	(6.10)	
2047	5,557.90	1.91%	0.38%	105.88	20.97	(84.91)	(5.97)	
2048	5,777.07	1.90%	0.35%	109.54	20.45	(89.09)	(5.80)	
2049	6,004.27	1.90%	0.34%	113.90	20.50	(93.39)	(5.63)	
2050	6,240.32	1.90%	0.33%	118.40	20.58	(97.82)	(5.46)	
2051	6,485.84	1.90%	0.32%	123.09	20.69	(102.40)	(5.29)	
2052	6,741.16	1.90%	0.31%	127.92	20.83	(107.09)	(5.12)	
2053	7,006.34	1.90%	0.30%	132.90	21.01	(111.89)	(4.96)	
2054	7,282.35	1.89%	0.29%	137.32	21.23	(116.09)	(4.76)	
2055	7,569.72	1.88%	0.28%	142.63	21.48	(121.15)	(4.60)	
2056	7,868.83	1.87%	0.28%	147.31	21.77	(125.54)	(4.41)	
2057	8,180.09	1.87%	0.27%	152.92	22.10	(130.82)	(4.26)	
2058	8,504.09	1.86%	0.26%	157.84	22.45	(135.39)	(4.08)	
2059	8,841.31	1.84%	0.26%	162.90	22.83	(140.07)	(3.91)	
2060	9,192.25	1.83%	0.25%	168.08	23.23	(144.85)	(3.74)	
2061	9,557.47	1.81%	0.25%	173.40	23.65	(149.74)	(3.58)	
			Total	\$ 8,055.46	\$ 5,197.69	\$ (2,857.77)	\$ (272.91)	
			Present Value at 8% as of July 1, 2012	\$ 2,445.04	\$ 2,172.13	\$ (272.91)		

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 1, 2013.

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

2/1/2013



Exhibit B6

Kansas Public Employee Retirement System
Comparison of Local Group Employer Contributions for Retirement Benefits
HB 2333 vs. Guaranteed Interest Credit of 4.25% and 5% Annuitization

Y/E	Payroll (\$M)			HB 2333				Guaranteed Interest Credit of 4.25% and 5% Annuitization				Present Value of Difference
	Tier 1/2	Tier 3	Total	Employer Contribution Rate	Employer Normal Cost %	UAL Payment	Total Employer Cost	Employer Contribution Rate	Employer Normal Cost %	UAL Payment	Total Employer Cost	
2013	\$1,660.604	\$0.000	\$1,660.604	7.94%	2.91%	\$83,491	\$131,852	7.94%	2.91%	\$83,491	\$131,852	\$0.000
2014	1,706.606	0.000	1,706.606	8.84%	2.91%	49,701	150,864	8.84%	2.91%	49,701	150,864	0.000
2015	1,755.461	0.000	1,755.461	9.78%	2.03%	35,570	171,618	8.84%	2.03%	101,163	171,618	0.000
2016	1,658.682	151.015	1,809.697	10.52%	1.95%	35,339	190,430	10.52%	1.95%	136,048	190,430	0.000
2017	1,575.692	291.415	1,867.107	10.47%	1.88%	35,090	195,475	10.37%	1.78%	155,091	195,475	(1,853)
2018	1,504.853	422.352	1,927.205	10.53%	1.83%	35,290	202,957	10.33%	1.64%	160,384	193,621	(2,504)
2019	1,440.724	549.389	1,990.113	10.62%	1.79%	35,558	210,290	10.28%	1.52%	167,474	204,551	(3,480)
2020	1,381.836	673.888	2,055.724	10.62%	1.75%	35,918	218,261	10.23%	1.41%	174,334	204,551	(3,480)
2021	1,328.487	796.450	2,124.937	10.67%	1.71%	36,369	226,763	10.19%	1.30%	188,907	210,234	(4,507)
2022	1,278.151	918.861	2,197.012	10.73%	1.68%	36,925	235,755	10.17%	1.21%	204,943	223,452	(5,922)
2023	1,229.411	1,042.682	2,272.093	10.79%	1.65%	37,611	245,053	10.15%	1.13%	220,542	230,542	(6,467)
2024	1,182.829	1,168.523	2,351.352	10.84%	1.63%	38,382	254,941	10.13%	1.05%	246,080	238,145	(6,932)
2025	1,138.492	1,296.287	2,434.779	10.90%	1.61%	39,302	265,493	10.11%	0.98%	272,295	246,080	(7,418)
2026	1,094.860	1,427.085	2,521.945	10.97%	1.60%	40,370	276,676	10.09%	0.91%	303,032	254,546	(7,830)
2027	1,052.036	1,561.025	2,613.061	11.03%	1.59%	41,558	288,231	10.08%	0.86%	340,924	263,274	(8,176)
2028	1,011.323	1,697.706	2,709.029	11.10%	1.58%	42,866	300,765	10.05%	0.80%	389,725	281,906	(8,946)
2029	972.150	1,837.388	2,809.538	11.17%	1.58%	44,321	313,756	10.03%	0.75%	449,499	291,803	(9,355)
2030	934.164	1,980.546	2,914.710	11.25%	1.58%	45,921	327,774	10.01%	0.71%	520,346	301,930	(9,777)
2031	896.687	2,127.843	3,024.530	11.33%	1.58%	47,638	342,530	9.98%	0.67%	605,987	319,506	(7,897)
2032	859.356	2,279.406	3,138.762	11.41%	1.58%	49,460	358,062	9.96%	0.64%	702,584	339,000	(7,683)
2033	821.485	2,436.013	3,257.498	11.49%	1.58%	51,364	374,350	9.94%	0.60%	811,933	365,732	(7,369)
2034	783.430	2,597.839	3,381.269	11.57%	1.58%	53,370	391,490	9.92%	0.57%	937,062	400,000	(7,262)
2035	745.673	2,764.790	3,510.463	11.65%	1.58%	55,494	409,526	9.90%	0.54%	1,080,811	416,634	(7,131)
2036	707.827	2,937.117	3,644.944	11.73%	1.58%	57,719	428,502	9.88%	0.52%	1,245,933	434,314	(7,049)
2037	669.798	3,115.419	3,785.217	11.81%	1.59%	60,048	448,462	9.86%	0.49%	1,434,944	452,934	(6,806)
2038	631.744	3,299.802	3,931.546	11.89%	1.59%	62,491	469,456	9.84%	0.47%	1,651,933	472,296	(6,653)
2039	593.492	3,490.700	4,084.192	11.97%	1.59%	65,057	491,502	9.82%	0.45%	1,901,933	492,296	(6,427)
2040	555.203	3,688.013	4,243.216	12.05%	1.60%	67,735	514,624	9.80%	0.43%	2,191,933	517,296	(6,263)
2041	516.439	3,892.373	4,408.812	12.13%	1.60%	70,526	538,859	9.78%	0.41%	2,522,933	542,296	(6,096)
2042	477.700	4,103.667	4,581.367	12.21%	1.61%	73,441	564,262	9.76%	0.39%	2,905,933	567,296	(5,968)
2043	439.470	4,321.777	4,761.247	12.29%	1.61%	76,483	590,959	9.74%	0.37%	3,342,933	592,296	(5,798)
2044	402.975	4,545.881	4,948.856	12.37%	1.61%	79,638	618,979	9.72%	0.35%	3,841,933	617,296	(5,628)
2045	366.511	4,777.500	5,144.011	12.45%	1.61%	82,907	648,462	9.70%	0.33%	4,402,933	642,296	(5,458)
2046	330.966	5,016.003	5,346.969	12.53%	1.61%	86,277	679,456	9.68%	0.32%	5,035,933	667,296	(5,290)
2047	295.949	5,261.952	5,557.901	12.61%	1.62%	89,767	711,502	9.66%	0.30%	5,741,933	692,296	(5,123)
2048	262.213	5,514.858	5,777.071	12.69%	1.62%	93,364	744,624	9.64%	0.28%	6,518,933	717,296	(4,956)
2049	228.104	5,776.162	6,004.266	12.77%	1.62%	97,085	788,959	9.62%	0.26%	7,462,933	742,296	(4,786)
2050	195.344	6,044.979	6,240.323	12.85%	1.62%	100,931	834,502	9.60%	0.25%	8,585,933	767,296	(4,616)
2051	164.967	6,320.872	6,485.839	12.93%	1.62%	104,925	881,262	9.58%	0.24%	9,898,933	792,296	(4,446)
2052	138.479	6,602.680	6,741.159	13.01%	1.62%	109,042	929,456	9.56%	0.23%	11,402,933	817,296	(4,276)
2053	113.354	6,892.984	7,006.338	13.09%	1.62%	113,283	979,959	9.54%	0.22%	13,107,933	842,296	(4,106)
2054	90.351	7,192.000	7,282.351	13.17%	1.62%	117,658	1,032,856	9.52%	0.21%	15,022,933	867,296	(3,936)
2055	70.920	7,498.796	7,569.716	13.25%	1.62%	122,193	1,089,062	9.50%	0.20%	17,147,933	892,296	(3,766)
2056	56.002	7,812.827	7,868.829	13.33%	1.61%	126,856	1,148,624	9.48%	0.20%	19,492,933	917,296	(3,596)
2057	43.538	8,136.549	8,180.087	13.41%	1.61%	131,658	1,210,624	9.46%	0.19%	22,177,933	942,296	(3,426)
2058	33.158	8,470.937	8,504.095	13.49%	1.61%	136,584	1,276,062	9.44%	0.19%	25,202,933	967,296	(3,256)
2059	25.139	8,816.173	8,841.312	13.57%	1.60%	141,682	1,345,062	9.42%	0.19%	28,577,933	992,296	(3,086)
2060	19.322	9,172.930	9,192.252	13.65%	1.60%	146,940	1,417,502	9.40%	0.19%	32,302,933	1,017,296	(2,916)
2061	14.693	9,542.777	9,557.470	13.73%	1.41%	152,338	1,493,502	9.38%	0.19%	36,377,933	1,042,296	(2,746)
						\$3,520,694	\$8,055,460			\$4,594,766	\$8,055,460	
						\$1,083,012	\$4,114,682			\$4,114,682	\$4,114,682	
												(\$2,877,766)

(*) In millions.

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