



**Cavanaugh Macdonald**  
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March 19, 2012

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

**Re: Cost Projections under HB 2194, HB 2545, and Cash Balance Plan Discussed by House Committee on Pensions and Benefits (March 7, 2012)**

Dear Alan:

As you requested, we have performed a cost study to compare the estimated employer cost projections under HB 2194, HB 2545, and the Cash Balance Plan discussed by the House Committee on Pensions and Benefits on March 7, 2012. The cost estimates for HB 2194 and HB 2545 shown in the exhibits are the same as those provided in our letter dated January 23, 2012. The basic plan provisions for the cash balance plan design, on which our cost projections are based, are set out below. For purposes of the cost projections for the cash balance plan, the effective date of the new plan design is January 1, 2014. All employees hired on or after that date become members of KPERS Tier 3 with the exception of Correctional Officers who will continue to be covered under Tier 2. Current members of KPERS on January 1, 2014 remain members of Tier 1 or 2.

**Cash Balance Plan Design**

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

- The employer credit to the cash balance account is a service based credit beginning at 1% and grading up to 4% after the member attains four years of service.
- The guaranteed interest credit is 5% per year with interest credited quarterly. Additional interest credits may be granted at the discretion of the KPERS Board of Directors subject to certain conditions. The additional interest credit cannot exceed the lesser of 2% or 50% of the rate of return on the system's assets that is above 8%. The additional interest credit shall not be granted unless the rate of return on KPERS assets is at least 10% for that fiscal year.
- Employee contribution rate is 6% of pay.
- 100% vesting after seven (7) years of service.
- Normal retirement date is earlier of age 60 with 30 years of service or age 65 with 5 years of service
- Early retirement is age 55 with 10 years of service

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

### **Statutory Contribution Cap**

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

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

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

### **Senate Substitute for HB 2194**

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



### Actuarial Assumptions and Methods

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

The March 7, 2012 Cash Balance Plan design sets the interest crediting rate is set at a guaranteed minimum of 5%, but also provides that additional interest credits may be granted at the discretion of the KPERS Board of Directors subject to certain conditions. The additional interest credit cannot exceed the lesser of 2% or 50% of the rate of return on the system's assets that is above 8%. The additional interest credit shall not be granted unless the rate of return on KPERS assets is at least 10% for that fiscal year. Given the expected distribution of returns over long periods of time, the actual interest crediting rate is expected to be higher than the 5% guaranteed rate. Therefore, an assumption is needed to anticipate the long term effective interest crediting rate. Due to time constraints related to the modeling of costs, there was insufficient time to perform a comprehensive analysis to determine the expected total interest crediting rate, including the additional interest credits that may be granted by the Board. Based on very limited analysis, an assumption of 6.5% was used for purposes of this cost study. Based on the information available at this time, the 6.5% assumption appears to be a conservative estimate given the conditions for the additional interest credit. If this Cash Balance plan design moves forward, extensive modeling of the expected rates of return on the KPERS portfolio and the resulting total interest crediting rate should be completed so the actuarial assumption can be further refined. Any change in this assumption will impact the cost projections attached to this letter.

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

HB 2545 and the proposed Cash Balance Plan are both defined benefit plans so we assumed that the new tier would be combined with the existing KPERS Tiers 1 and 2 in one system with one trust. As such, the future benefit payments for Tier 3 members are projected in the actuarial valuation along with those for Tier 1 and 2 members and one overall employer contribution rate is developed, which includes the UAL payment, to be paid on all covered payroll (Tier 1, Tier 2 and Tier 3 members). From an actuarial perspective, the valuation process is unchanged other than reflecting the new benefit structure for Tier 3 members.

The amortization period used in the cost projections remained at a closed 22 year period starting on December 31, 2010. In order to mitigate the impact of the time lag between the valuation date and the fiscal year in which the contribution rate is effective, the amortization period was set to an open ten year period in 2030 for all cost projections.



## **Results**

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

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

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

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

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

- Investment return in all future years is assumed to be 8% on a market value basis, unless otherwise indicated.
- All demographic assumptions regarding mortality, disability, retirement, salary increases, and termination of employment are assumed to hold true in the future. Please note that the actuarial assumption assumes that mortality will improve in the future (i.e. people will live longer).
- Changes in the retirement plan eligibility and benefit amounts may have an effect on future termination and retirement patterns. While we have attempted to reflect the change in retirement eligibility under HB 2545, how changes in the benefit structure may ultimately impact employment patterns under both HB 2545 and the proposed Cash Balance Plan cannot be known at this time and, therefore, no changes have been modeled.
- The number of active members covered by KPERs in the future is assumed to remain level (neither growth nor decline in the active membership count). As active members leave employment, they are assumed to be replaced by new employees who have a similar demographic profile as recent new hires.



- Plan provisions for Tiers 1 and 2 are modified in accordance with Senate Substitute for HB 2194, for all three projections. Tier 3 benefits are provided under either HB 2545 or the proposed Cash Balance Plan as described earlier in this letter. There are no other benefit changes reflected in future years.
- The projections for the proposed Cash Balance Plan reflect the assumed total interest credits (guaranteed plus discretionary) of 6.5% each year. If the actual interest credits granted are more than 6.5%, it will generally increase the cost of the plan. If actual interest credits granted are less than 6.5% each year, the cost of the plan will be lower, all other factors being equal.
- The funding methods including the entry age normal cost method, the asset smoothing method, and the amortization method and period remain unchanged other than as noted elsewhere in this letter.
- The state and local employers will contribute as scheduled under HB 2194 (with consideration to changes in the statutory caps in that legislation) and with no statutory cap under HB 2545. The projections for the Cash Balance Plan reflect the same statutory cap as HB 2194.
- We relied upon the membership data provided by KPERS for the actuarial valuation. The numerical results depend on the integrity of this information. If there are material inaccuracies in this data, the results presented herein may be different and the projections may need to be revised.

Models are designed to identify anticipated trends and to compare various scenarios rather than predicting some future state of events. The projections are based on the System's estimated financial status on December 31, 2010, and project future events using one set of assumptions out of a range of many possibilities. A different set of assumptions would lead to different results. The projections do not predict the System's financial condition or its ability to pay benefits in the future and do not provide any guarantee of future financial soundness of the System. Over time, a defined benefit plan's total cost will depend on a number of factors, including the amount of benefits paid, the number of people paid benefits, the duration of the benefit payments, plan expenses, and the amount of earnings on assets invested to pay benefits. These amounts and other variables are uncertain and unknowable at the time the projections were made. Because not all of the assumptions will unfold exactly as expected, actual results will differ from the projections. To the extent that actual experience deviates significantly from the assumptions, results could be significantly better or significantly worse than indicated in this study.

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

Sincerely,

Handwritten signature of Patrice Beckham 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**  
**KPERS Contribution Rate Projections under HB 2194, HB 2545, and House Cash Balance Plan (March 7<sup>th</sup>)**  
**State/School Group**

Fiscal Year	Total Payroll (\$M)	HB 2194 vs HB 2545		HB 2194 vs House Cash Balance		HB 2545 vs House Cash Balance	
		Employer Contribution Rate	House Cash Balance	Employer Contribution Rate	House Cash Balance	Employer Contribution Rate	House Cash Balance
2012	\$ 4,465.19	8.77%	8.77%	8.77%	8.77%	8.77%	8.77%
2013	4,609.30	9.37%	9.37%	9.37%	9.37%	9.37%	9.37%
2014	4,742.86	10.27%	10.27%	10.27%	10.27%	10.27%	10.27%
2015	4,889.77	11.27%	11.27%	11.27%	11.27%	11.27%	11.27%
2016	5,048.36	12.37%	12.37%	12.37%	12.37%	12.37%	12.37%
2017	5,217.25	13.57%	13.57%	13.57%	13.57%	13.57%	13.57%
2018	5,396.09	14.67%	14.67%	14.67%	14.67%	14.67%	14.67%
2019	5,585.80	14.74%	14.74%	14.74%	14.74%	14.74%	14.74%
2020	5,786.83	14.80%	14.80%	14.80%	14.80%	14.80%	14.80%
2021	5,999.32	14.85%	14.85%	14.85%	14.85%	14.85%	14.85%
2022	6,223.41	14.84%	14.84%	14.84%	14.84%	14.84%	14.84%
2023	6,458.61	14.81%	14.81%	14.81%	14.81%	14.81%	14.81%
2024	6,704.71	14.76%	14.76%	14.76%	14.76%	14.76%	14.76%
2025	6,962.16	14.70%	14.70%	14.70%	14.70%	14.70%	14.70%
2026	7,231.45	14.62%	14.62%	14.62%	14.62%	14.62%	14.62%
2027	7,512.93	14.54%	14.54%	14.54%	14.54%	14.54%	14.54%
2028	7,806.93	14.45%	14.45%	14.45%	14.45%	14.45%	14.45%
2029	8,113.92	14.34%	14.34%	14.34%	14.34%	14.34%	14.34%
2030	8,433.95	14.21%	14.21%	14.21%	14.21%	14.21%	14.21%
2031	8,767.29	14.08%	14.08%	14.08%	14.08%	14.08%	14.08%
2032	9,114.66	13.90%	13.90%	13.90%	13.90%	13.90%	13.90%
2033	9,476.23	5.43%	5.43%	5.43%	5.43%	5.43%	5.43%
2034	9,852.28	3.95%	3.95%	3.95%	3.95%	3.95%	3.95%
2035	10,243.64	2.42%	2.42%	2.42%	2.42%	2.42%	2.42%
2036	10,650.79	1.38%	1.38%	1.38%	1.38%	1.38%	1.38%
2037	11,073.56	0.90%	0.90%	0.90%	0.90%	0.90%	0.90%
2038	11,513.15	0.58%	0.58%	0.58%	0.58%	0.58%	0.58%
2039	11,970.93	0.41%	0.41%	0.41%	0.41%	0.41%	0.41%
2040	12,448.09	0.33%	0.33%	0.33%	0.33%	0.33%	0.33%
2041	12,947.04	0.29%	0.29%	0.29%	0.29%	0.29%	0.29%
2042	13,469.39	0.29%	0.29%	0.29%	0.29%	0.29%	0.29%
2043	14,014.53	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
2044	14,581.39	0.31%	0.31%	0.31%	0.31%	0.31%	0.31%
2045	15,170.09	0.34%	0.34%	0.34%	0.34%	0.34%	0.34%
2046	15,780.74	0.37%	0.37%	0.37%	0.37%	0.37%	0.37%
2047	16,410.26	0.40%	0.40%	0.40%	0.40%	0.40%	0.40%
2048	17,057.88	0.42%	0.42%	0.42%	0.42%	0.42%	0.42%
2049	17,727.69	0.46%	0.46%	0.46%	0.46%	0.46%	0.46%
2050	18,423.67	0.48%	0.48%	0.48%	0.48%	0.48%	0.48%
2051	19,147.45	0.52%	0.52%	0.52%	0.52%	0.52%	0.52%
2052	19,899.69	0.54%	0.54%	0.54%	0.54%	0.54%	0.54%
2053	20,682.16	0.56%	0.56%	0.56%	0.56%	0.56%	0.56%
2054	21,496.61	0.59%	0.59%	0.59%	0.59%	0.59%	0.59%
2055	22,344.49	0.61%	0.61%	0.61%	0.61%	0.61%	0.61%
2056	23,227.14	0.63%	0.63%	0.63%	0.63%	0.63%	0.63%
2057	24,145.92	0.65%	0.65%	0.65%	0.65%	0.65%	0.65%
2058	25,102.38	0.68%	0.68%	0.68%	0.68%	0.68%	0.68%
2059	26,098.07	0.69%	0.69%	0.69%	0.69%	0.69%	0.69%
2060	27,134.62	0.71%	0.71%	0.71%	0.71%	0.71%	0.71%

This exhibit is an attachment to a letter that contains important information and explanations regarding the numbers shown. Therefore, the exhibit should only be considered with the accompanying letter from Cavanaugh Macdonald dated March 19, 2012.  
 All assumptions, including the 8% investment return, are assumed to be met each year in the future.



**Exhibit A2**  
**KPERS Contribution Rate Projections under HB 2194, HB 2545, and House Cash Balance Plan (March 7<sup>th</sup>)**  
 Local Group

Fiscal Year	Total Payroll (\$MM)	HB 2194 vs HB 2545		HB 2194 vs House Cash Balance		HB 2545 vs House Cash Balance	
		Employer Contribution Rate	House Cash Balance	Employer Contribution Rate	House Cash Balance	Employer Contribution Rate	House Cash Balance
2012	1,678.75	7.34%	7.34%	7.34%	7.34%	7.34%	7.34%
2013	1,726.92	7.94%	7.94%	7.94%	7.94%	7.94%	7.94%
2014	1,777.74	8.65%	8.65%	8.65%	8.65%	8.91%	8.65%
2015	1,834.05	9.12%	9.12%	9.12%	9.12%	9.47%	9.12%
2016	1,893.42	9.00%	9.00%	9.00%	9.00%	9.45%	9.00%
2017	1,955.65	9.00%	9.00%	9.00%	8.93%	9.53%	8.93%
2018	2,020.46	9.00%	9.00%	9.00%	8.87%	9.60%	8.87%
2019	2,087.94	8.99%	8.99%	8.99%	8.79%	9.67%	8.79%
2020	2,158.09	8.98%	8.98%	8.98%	8.71%	9.72%	8.71%
2021	2,231.91	8.98%	8.98%	8.98%	8.65%	9.80%	8.65%
2022	2,309.17	8.98%	8.98%	8.98%	8.60%	9.87%	8.60%
2023	2,389.76	8.98%	8.98%	8.98%	8.55%	9.93%	8.55%
2024	2,474.65	8.97%	8.97%	8.97%	8.49%	9.99%	8.49%
2025	2,563.71	8.98%	8.98%	8.98%	8.43%	10.04%	8.43%
2026	2,656.71	8.97%	8.97%	8.97%	8.38%	10.10%	8.38%
2027	2,753.93	8.97%	8.97%	8.97%	8.32%	10.14%	8.32%
2028	2,856.33	8.96%	8.96%	8.96%	8.25%	10.16%	8.25%
2029	2,963.32	8.94%	8.94%	8.94%	8.19%	10.19%	8.19%
2030	3,075.51	8.93%	8.93%	8.93%	8.12%	10.20%	8.12%
2031	3,192.38	8.91%	8.91%	8.91%	8.03%	10.18%	8.03%
2032	3,313.68	3.65%	3.65%	3.65%	2.93%	10.18%	8.03%
2033	3,440.20	2.75%	2.75%	2.75%	2.03%	5.05%	2.93%
2034	3,571.81	1.82%	1.82%	1.82%	1.10%	4.20%	2.03%
2035	3,709.17	1.49%	1.49%	1.49%	0.76%	3.32%	1.10%
2036	3,851.93	1.27%	1.27%	1.27%	0.53%	3.04%	0.76%
2037	4,001.21	1.14%	1.14%	1.14%	0.38%	2.85%	0.53%
2038	4,157.18	1.06%	1.06%	1.06%	0.29%	2.77%	0.38%
2039	4,319.48	0.99%	0.99%	0.99%	0.21%	2.71%	0.29%
2040	4,488.52	0.94%	0.94%	0.94%	0.14%	2.68%	0.21%
2041	4,663.81	0.90%	0.90%	0.90%	0.09%	2.67%	0.14%
2042	4,846.82	0.86%	0.86%	0.86%	0.05%	2.66%	0.09%
2043	5,037.31	0.83%	0.83%	0.83%	0.01%	2.65%	0.05%
2044	5,235.49	0.81%	0.81%	0.81%	0.00%	2.65%	0.01%
2045	5,442.03	0.79%	0.79%	0.79%	0.00%	2.65%	0.00%
2046	5,656.91	0.77%	0.77%	0.79%	0.00%	2.66%	0.00%
2047	5,879.63	0.76%	0.76%	0.77%	0.00%	2.67%	0.00%
2048	6,110.89	0.74%	0.74%	0.76%	0.00%	2.68%	0.00%
2049	6,351.53	0.74%	0.74%	0.74%	0.00%	2.70%	0.00%
2050	6,602.17	0.73%	0.73%	0.73%	0.00%	2.70%	0.00%
2051	6,862.33	0.73%	0.73%	0.73%	0.00%	2.72%	0.00%
2052	7,132.79	0.74%	0.74%	0.74%	0.00%	2.74%	0.00%
2053	7,414.16	0.73%	0.73%	0.74%	0.00%	2.75%	0.00%
2054	7,707.23	0.73%	0.73%	0.73%	0.00%	2.77%	0.00%
2055	8,012.19	0.74%	0.74%	0.73%	0.00%	2.77%	0.00%
2056	8,329.45	0.74%	0.74%	0.74%	0.00%	2.79%	0.00%
2057	8,659.60	0.76%	0.76%	0.74%	0.00%	2.81%	0.00%
2058	9,003.17	0.76%	0.76%	0.76%	0.00%	2.81%	0.00%
2059	9,360.70	0.76%	0.76%	0.76%	0.00%	2.83%	0.00%
2060	9,732.77	0.76%	0.76%	0.76%	0.00%	2.84%	0.00%
						2.85%	0.00%

This exhibit is an attachment to a letter that contains important information and explanations regarding the numbers shown. Therefore, the exhibit should only be considered with the accompanying letter from Cavanaugh Macdonald dated March 19, 2012.  
 All assumptions, including the 8% investment return, are assumed to be met each year in the future.



**Exhibit B1**  
**KPERS Cost Projections under HB 2194, HB 2545, and House Cash Balance Plan (March 7<sup>th</sup>)**  
 State/School Group

Fiscal Year	HB 2194 vs HB 2545			HB 2194 vs House Cash Balance			HB 2545 vs House Cash Balance			
	Total Payroll (\$M)	Employer Contribution Amount (\$M)	Present Value of Difference	HB 2194	HB 2545	Difference	House Cash Balance	House Cash Balance	Difference	Present Value of Difference
2012	4,465.19	\$ 391.60	\$ -	\$ 391.60	\$ 391.60	\$ -	\$ 391.60	\$ 391.60	\$ -	\$ -
2013	4,609.30	431.89	-	431.89	431.89	-	431.89	431.89	-	-
2014	4,742.86	487.09	150.37	487.09	487.09	-	487.09	487.09	-	(124.05)
2015	4,889.77	551.08	87.56	551.08	551.08	-	551.08	551.08	-	(114.63)
2016	5,048.36	624.48	123.70	624.48	624.48	-	624.48	624.48	-	(87.49)
2017	5,217.25	707.98	63.54	707.98	707.98	-	707.98	707.98	-	(123.70)
2018	5,396.09	780.44	9.90	780.44	776.57	(3.87)	776.57	776.57	-	(63.54)
2019	5,585.80	819.50	4.06	819.50	811.31	(8.19)	811.31	811.31	-	(8.35)
2020	5,786.83	856.63	(0.49)	856.63	844.20	(12.42)	844.20	844.20	-	(6.88)
2021	5,999.32	890.84	(0.64)	890.84	873.49	(17.36)	873.49	873.49	-	(12.26)
2022	6,223.41	923.50	3.00	923.50	901.70	(21.80)	901.70	901.70	-	(11.93)
2023	6,458.61	956.42	6.95	956.42	928.51	(27.90)	928.51	928.51	-	(8.05)
2024	6,704.71	989.41	11.78	989.41	956.80	(32.61)	956.80	956.80	-	(24.80)
2025	6,962.16	1,023.12	16.56	1,023.12	983.95	(39.17)	983.95	983.95	-	(16.96)
2026	7,231.45	1,057.31	22.23	1,057.31	1,011.59	(45.72)	1,011.59	1,011.59	-	(19.72)
2027	7,512.93	1,092.03	27.87	1,092.03	1,039.85	(52.18)	1,039.85	1,039.85	-	(67.95)
2028	7,806.93	1,127.87	34.10	1,127.87	1,067.79	(60.07)	1,067.79	1,067.79	-	(80.05)
2029	8,113.92	1,163.67	39.81	1,163.67	1,096.14	(67.53)	1,096.14	1,096.14	-	(94.17)
2030	8,433.95	1,198.79	46.51	1,198.79	1,123.71	(75.08)	1,123.71	1,123.71	-	(107.35)
2031	8,767.29	1,234.26	51.66	1,234.26	1,149.38	(84.88)	1,149.38	1,149.38	-	(121.59)
2032	9,114.66	1,266.68	57.60	1,266.68	1,171.21	(95.48)	1,171.21	1,171.21	-	(136.54)
2033	9,476.23	1,299.85	63.52	1,299.85	1,189.11	(110.74)	1,189.11	1,189.11	-	(153.08)
2034	9,852.28	1,332.85	69.47	1,332.85	1,207.38	(125.47)	1,207.38	1,207.38	-	(170.02)
2035	10,243.64	1,365.85	75.42	1,365.85	1,226.11	(139.74)	1,226.11	1,226.11	-	(187.50)
2036	10,650.79	1,400.00	81.36	1,400.00	1,245.30	(154.70)	1,245.30	1,245.30	-	(205.54)
2037	11,073.56	1,435.32	87.29	1,435.32	1,265.03	(170.29)	1,265.03	1,265.03	-	(224.18)
2038	11,513.15	1,471.81	93.21	1,471.81	1,285.30	(186.51)	1,285.30	1,285.30	-	(243.42)
2039	11,970.93	1,509.40	99.12	1,509.40	1,306.14	(203.26)	1,306.14	1,306.14	-	(263.26)
2040	12,448.09	1,548.19	105.01	1,548.19	1,327.61	(220.58)	1,327.61	1,327.61	-	(283.70)
2041	12,947.04	1,588.18	110.89	1,588.18	1,350.20	(237.98)	1,350.20	1,350.20	-	(304.74)
2042	13,469.39	1,629.37	116.76	1,629.37	1,373.91	(255.46)	1,373.91	1,373.91	-	(326.38)
2043	14,014.53	1,671.86	122.63	1,671.86	1,400.00	(271.86)	1,400.00	1,400.00	-	(349.11)
2044	14,581.39	1,716.75	128.49	1,716.75	1,428.11	(288.64)	1,428.11	1,428.11	-	(373.00)
2045	15,170.09	1,764.14	134.34	1,764.14	1,457.77	(306.37)	1,457.77	1,457.77	-	(398.11)
2046	15,780.74	1,814.03	140.18	1,814.03	1,489.00	(325.03)	1,489.00	1,489.00	-	(424.54)
2047	16,410.26	1,865.52	146.01	1,865.52	1,522.00	(344.52)	1,522.00	1,522.00	-	(452.36)
2048	17,057.88	1,918.71	151.83	1,918.71	1,556.88	(364.83)	1,556.88	1,556.88	-	(481.66)
2049	17,722.69	1,973.60	157.64	1,973.60	1,603.00	(380.60)	1,603.00	1,603.00	-	(512.59)
2050	18,404.67	2,030.29	163.44	2,030.29	1,650.44	(399.85)	1,650.44	1,650.44	-	(544.74)
2051	19,104.45	2,088.78	169.23	2,088.78	1,700.00	(418.78)	1,700.00	1,700.00	-	(578.20)
2052	19,820.69	2,149.07	175.01	2,149.07	1,750.88	(437.19)	1,750.88	1,750.88	-	(613.29)
2053	20,554.16	2,210.26	180.78	2,210.26	1,803.00	(455.26)	1,803.00	1,803.00	-	(650.02)
2054	21,303.49	2,273.35	186.54	2,273.35	1,856.44	(473.91)	1,856.44	1,856.44	-	(688.41)
2055	22,068.12	2,338.44	192.29	2,338.44	1,911.33	(493.11)	1,911.33	1,911.33	-	(728.46)
2056	22,847.74	2,405.53	198.01	2,405.53	1,967.77	(513.76)	1,967.77	1,967.77	-	(770.68)
2057	23,642.12	2,474.72	203.72	2,474.72	2,025.88	(535.84)	2,025.88	2,025.88	-	(815.59)
2058	24,451.92	2,546.01	209.41	2,546.01	2,085.66	(559.35)	2,085.66	2,085.66	-	(863.20)
2059	25,277.38	2,619.40	215.08	2,619.40	2,147.11	(584.29)	2,147.11	2,147.11	-	(913.63)
2060	26,118.62	2,694.89	220.72	2,694.89	2,211.33	(610.56)	2,211.33	2,211.33	-	(966.88)
Total	\$ 22,140.94	\$ 3,039.06	\$ 1,065.89	\$ 3,039.06	\$ 3,039.06	\$ -	\$ 3,039.06	\$ 3,039.06	\$ -	\$ -
Present Value at 8% as of July 1, 2011	\$ 8,317.52	\$ 9,383.42	\$ 1,065.89	\$ 9,383.42	\$ 9,383.42	\$ -	\$ 9,383.42	\$ 9,383.42	\$ -	\$ -

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 March 19, 2012. All assumptions, including the 8% investment return, are assumed to be met each year in the future.





**Exhibit B2**  
**KPERS Cost Projections under HB 2194, HB 2545, and House Cash Balance Plan (March 7<sup>th</sup>)**  
 Local Group

Fiscal Year	Total Payroll (\$M)	HB 2194 vs HB 2545			HB 2194 vs House Cash Balance			HB 2545 vs House Cash Balance		
		Employer Contribution Amount (\$M)	Difference	Present Value of Difference	Employer Contribution Amount (\$M)	Difference	Present Value of Difference	Employer Contribution Amount (\$M)	Difference	Present Value of Difference
2012	1,678.75	123.22	\$ -	\$ -	123.22	\$ -	\$ -	123.22	\$ -	\$ -
2013	1,726.92	137.12	-	3.75	137.12	-	-	137.12	-	-
2014	1,777.74	158.39	4.55	3.75	153.84	153.84	(4.55)	158.39	153.84	(4.55)
2015	1,834.05	167.26	6.45	4.92	167.26	167.26	-	173.71	167.26	(6.45)
2016	1,893.42	170.45	8.44	5.97	170.45	170.45	-	178.89	170.45	(8.44)
2017	1,955.65	176.01	10.32	6.76	176.01	174.63	(1.38)	186.32	174.63	(11.69)
2018	2,020.46	181.84	12.08	7.33	181.84	179.17	(2.67)	193.92	179.17	(14.75)
2019	2,087.94	187.74	14.15	7.95	187.74	183.43	(4.31)	201.89	183.43	(18.46)
2020	2,158.09	193.71	16.12	8.38	193.71	187.98	(5.73)	209.84	187.98	(21.86)
2021	2,231.91	200.50	18.20	8.76	200.50	193.12	(7.38)	218.70	193.12	(25.58)
2022	2,309.17	207.43	20.43	9.11	207.43	198.59	(8.84)	227.86	198.59	(29.27)
2023	2,389.76	214.53	22.79	9.40	214.53	204.22	(10.32)	237.32	204.22	(33.10)
2024	2,474.65	222.08	25.02	9.56	222.08	210.01	(12.07)	247.11	210.01	(37.10)
2025	2,563.71	230.12	27.39	9.69	230.12	216.22	(13.89)	257.51	216.22	(41.29)
2026	2,656.71	238.33	29.89	9.79	238.33	222.58	(15.76)	268.22	222.58	(45.65)
2027	2,753.93	247.00	32.24	9.78	247.00	229.05	(17.95)	279.24	229.05	(50.19)
2028	2,856.33	255.91	34.43	9.67	255.91	235.68	(20.23)	290.34	235.68	(54.66)
2029	2,963.32	265.02	37.00	9.62	265.02	242.72	(22.30)	302.01	242.72	(59.30)
2030	3,075.51	274.64	39.05	9.40	274.64	249.61	(25.03)	313.69	249.61	(64.08)
2031	3,192.38	284.39	40.52	9.03	284.39	256.20	(28.20)	324.92	256.20	(68.72)
2032	3,313.68	290.93	46.30	8.56	290.93	262.95	(27.98)	334.92	262.95	(71.97)
2033	3,440.20	294.68	49.67	8.00	294.68	270.05	(24.63)	344.92	270.05	(74.87)
2034	3,571.81	298.89	53.54	7.48	298.89	277.51	(21.38)	354.92	277.51	(77.41)
2035	3,709.17	303.61	57.24	6.98	303.61	285.39	(18.22)	364.92	285.39	(79.53)
2036	3,851.93	308.83	60.69	6.51	308.83	293.70	(15.13)	374.92	293.70	(81.22)
2037	4,001.21	314.58	65.07	6.08	314.58	302.42	(12.16)	384.92	302.42	(82.50)
2038	4,157.18	320.84	69.42	5.70	320.84	311.61	(9.23)	394.92	311.61	(83.31)
2039	4,319.48	327.59	73.10	5.35	327.59	321.27	(6.32)	404.92	321.27	(83.65)
2040	4,488.52	334.82	77.52	5.04	334.82	330.43	(4.39)	414.92	330.43	(84.49)
2041	4,663.81	342.05	82.08	4.76	342.05	339.19	(2.86)	424.92	339.19	(85.73)
2042	4,846.82	349.28	86.78	4.50	349.28	348.50	(0.78)	434.92	348.50	(86.42)
2043	5,037.31	356.51	91.60	4.26	356.51	357.83	1.32	444.92	357.83	(87.09)
2044	5,235.49	363.74	96.52	4.04	363.74	367.20	3.46	454.92	367.20	(87.72)
2045	5,442.03	371.97	102.08	3.84	371.97	376.61	4.64	464.92	376.61	(88.31)
2046	5,656.91	380.20	107.76	3.65	380.20	386.07	5.87	474.92	386.07	(88.95)
2047	5,879.63	388.43	112.96	3.48	388.43	395.58	7.15	484.92	395.58	(89.64)
2048	6,110.89	396.66	119.44	3.33	396.66	405.14	8.48	494.92	405.14	(90.22)
2049	6,351.53	404.89	126.40	3.19	404.89	414.75	9.86	504.92	414.75	(90.83)
2050	6,602.17	413.12	133.87	3.06	413.12	424.41	11.29	514.92	424.41	(91.49)
2051	6,862.33	421.35	141.84	2.94	421.35	434.12	12.77	524.92	434.12	(92.20)
2052	7,132.79	429.58	150.37	2.83	429.58	443.88	14.30	534.92	443.88	(92.96)
2053	7,414.16	437.81	159.55	2.73	437.81	453.69	15.88	544.92	453.69	(93.77)
2054	7,707.23	446.04	169.32	2.64	446.04	463.55	17.51	554.92	463.55	(94.63)
2055	8,012.19	454.27	179.69	2.56	454.27	473.46	19.19	564.92	473.46	(95.54)
2056	8,329.45	462.50	190.66	2.49	462.50	483.42	20.92	574.92	483.42	(96.50)
2057	8,659.60	470.73	202.22	2.43	470.73	493.43	22.70	584.92	493.43	(97.51)
2058	9,003.17	478.96	214.45	2.38	478.96	503.49	24.53	594.92	503.49	(98.57)
2059	9,360.70	487.19	227.27	2.34	487.19	513.60	26.41	604.92	513.60	(99.68)
2060	9,732.77	495.42	240.61	2.31	495.42	523.76	28.34	614.92	523.76	(100.84)
Total	\$ 5,744.57	\$ 9,437.77	\$ 3,693.20	\$ 364.86	\$ 5,744.57	\$ 4,239.64	\$ (1,504.94)	\$ 9,437.77	\$ 4,239.64	\$ (5,198.14)
Present Value at 8% as of July 1, 2011	\$ 2,061.12	\$ 2,425.98	\$ 364.86	\$ -	\$ 2,061.12	\$ 1,905.39	\$ (155.73)	\$ 2,425.98	\$ 1,905.39	\$ (520.59)

This exhibit is an attachment to a letter that contains important information and explanations regarding the numbers shown. Therefore, the exhibit should only be considered with the accompanying letter from Cavanaugh MacDonald dated March 19, 2012. All assumptions, including the 8% investment return, are assumed to be met each year in the future.



Exhibit C1

Kansas Public Employee Retirement System  
 Comparison of State/School Group Employer Contributions for Retirement Benefits  
 HB 2194 versus House March 7th Plan

EYE	Payroll (\$M)			House March 7th Plan <sup>(1)</sup>				Total Cost <sup>(2)</sup>	UAL Payment <sup>(2)</sup>	DB Normal Cost <sup>(2)</sup>	DB Normal Cost Rate	Employer Rate-DB	DB Normal Cost Rate	DB Normal Cost <sup>(2)</sup>	UAL Payment <sup>(2)</sup>	Total Cost <sup>(2)</sup>	Difference <sup>(2)</sup>	Present Value of Difference
	Tier 1/2	Tier 3	Normal Cost <sup>(2)</sup>	UAL Payment <sup>(2)</sup>	DB Normal Cost <sup>(2)</sup>	DB Normal Cost Rate	Employer Rate-DB											
2012	4,465.186	0.000	147,582	244,014	391,597	8.77%	3.31%	8.77%	3.31%	147,582	244,014	391,597	0.000	0.000	0.000	0.000	0.000	
2013	4,609.301	0.000	152,346	279,546	431,892	9.37%	3.31%	9.37%	3.31%	152,346	279,546	431,892	0.000	0.000	0.000	0.000	0.000	
2014	4,742.859	0.000	156,760	330,332	487,092	10.27%	3.31%	10.27%	3.31%	156,760	330,332	487,092	0.000	0.000	0.000	0.000	0.000	
2015	4,706.273	183.492	112,949	438,128	551,077	11.27%	2.33%	11.27%	2.33%	112,949	438,128	551,077	0.000	0.000	0.000	0.000	0.000	
2016	4,507.134	541.224	111,974	512,508	624,482	12.37%	2.23%	12.37%	2.23%	111,974	512,508	624,482	0.000	0.000	0.000	0.000	0.000	
2017	4,332.724	884.524	110,810	597,171	707,981	13.57%	2.12%	13.57%	2.12%	110,810	597,171	707,981	0.000	0.000	0.000	0.000	0.000	
2018	4,171.368	1,224.718	110,248	670,194	780,442	14.67%	2.04%	14.67%	1.97%	106,380	670,194	776,574	(3,868)	(2,345)	(8,194)	(6,461)	(6,461)	
2019	4,017.143	1,568.662	109,544	709,956	819,500	14.80%	1.88%	14.80%	1.82%	101,908	709,956	811,306	(8,194)	(6,461)	(12,424)	(8,354)	(8,354)	
2020	3,868.916	1,917.913	108,967	747,658	856,625	14.85%	1.81%	14.85%	1.56%	93,577	747,658	842,202	(17,356)	(17,356)	(21,802)	(9,717)	(11,516)	
2021	3,729.151	2,270.169	108,533	782,311	890,844	14.84%	1.74%	14.84%	1.44%	89,542	782,311	873,489	(21,802)	(21,802)	(27,905)	(12,462)	(13,859)	
2022	3,597.727	2,625.683	108,232	815,267	923,499	14.76%	1.67%	14.76%	1.21%	81,160	815,267	896,796	(13,859)	(13,859)	(18,075)	(16,873)	(17,562)	
2023	3,469.577	2,989.037	107,739	848,662	956,416	14.70%	1.61%	14.70%	1.01%	76,784	848,662	924,410	(18,075)	(18,075)	(23,905)	(18,075)	(18,075)	
2024	3,343.442	3,361.269	107,601	881,669	989,409	14.54%	1.55%	14.54%	0.92%	69,184	881,669	950,854	(18,075)	(18,075)	(24,613)	(18,075)	(18,075)	
2025	3,218.508	3,743.649	107,825	915,524	1,023,124	14.45%	1.49%	14.45%	0.84%	65,383	915,524	983,953	(18,075)	(18,075)	(25,511)	(18,075)	(18,075)	
2026	3,095.688	4,135.766	107,840	949,490	1,057,315	14.34%	1.44%	14.34%	0.76%	61,611	949,490	1,019,593	(18,075)	(18,075)	(26,410)	(18,075)	(18,075)	
2027	2,976.817	4,536.108	108,283	984,193	1,092,033	14.21%	1.39%	14.21%	0.69%	58,501	984,193	1,039,854	(18,075)	(18,075)	(27,309)	(18,075)	(18,075)	
2028	2,861.609	4,945.319	108,856	1,019,585	1,127,868	13.90%	1.34%	13.90%	0.63%	55,227	1,019,585	1,067,793	(18,075)	(18,075)	(28,208)	(18,075)	(18,075)	
2029	2,748.479	5,365.437	109,127	1,054,809	1,163,666	13.90%	1.29%	13.90%	0.57%	51,929	1,054,809	1,096,135	(18,075)	(18,075)	(29,107)	(18,075)	(18,075)	
2030	2,636.015	5,797.930	110,296	1,089,666	1,198,793	13.90%	1.22%	13.90%	0.51%	48,673	1,089,666	1,123,709	(18,075)	(18,075)	(30,006)	(18,075)	(18,075)	
2031	2,523.441	6,243.849	110,946	1,123,967	1,234,263	13.90%	1.18%	13.90%	0.46%	45,530	1,123,967	1,149,384	(18,075)	(18,075)	(30,905)	(18,075)	(18,075)	
2032	2,410.718	6,703.938	111,686	1,155,758	1,266,684	13.90%	1.15%	13.90%	0.41%	42,224	1,155,758	1,171,209	(18,075)	(18,075)	(31,804)	(18,075)	(18,075)	
2033	2,297.300	7,178.932	111,663	1,187,807	1,298,411	13.90%	1.11%	13.90%	0.37%	39,796	1,187,807	1,196,237	(18,075)	(18,075)	(32,703)	(18,075)	(18,075)	
2034	2,182.241	7,670.035	111,419	1,219,119	1,329,811	13.90%	1.08%	13.90%	0.33%	37,474	1,219,119	1,203,332	(18,075)	(18,075)	(33,602)	(18,075)	(18,075)	
2035	2,065.928	8,177.707	111,119	1,249,559	1,359,811	13.90%	1.05%	13.90%	0.29%	35,152	1,249,559	1,230,332	(18,075)	(18,075)	(34,501)	(18,075)	(18,075)	
2036	1,948.113	8,702.679	110,807	1,278,807	1,388,811	13.90%	1.02%	13.90%	0.26%	32,830	1,278,807	1,211,332	(18,075)	(18,075)	(35,400)	(18,075)	(18,075)	
2037	1,827.085	9,246.479	110,600	1,307,600	1,417,600	13.90%	1.00%	13.90%	0.22%	30,508	1,307,600	1,192,332	(18,075)	(18,075)	(36,300)	(18,075)	(18,075)	
2038	1,703.396	9,809.757	110,393	1,336,393	1,446,393	13.90%	0.97%	13.90%	0.19%	28,186	1,336,393	1,173,332	(18,075)	(18,075)	(37,200)	(18,075)	(18,075)	
2039	1,578.269	10,392.660	110,186	1,365,186	1,475,186	13.90%	0.95%	13.90%	0.16%	25,864	1,365,186	1,154,332	(18,075)	(18,075)	(38,100)	(18,075)	(18,075)	
2040	1,452.370	10,995.722	110,000	1,394,000	1,504,000	13.90%	0.93%	13.90%	0.13%	23,542	1,394,000	1,135,332	(18,075)	(18,075)	(39,000)	(18,075)	(18,075)	
2041	1,329.445	11,617.595	109,813	1,422,813	1,532,813	13.90%	0.90%	13.90%	0.11%	21,220	1,422,813	1,116,332	(18,075)	(18,075)	(40,000)	(18,075)	(18,075)	
2042	1,213.354	12,256.040	109,627	1,451,627	1,561,627	13.90%	0.88%	13.90%	0.08%	18,898	1,451,627	1,097,332	(18,075)	(18,075)	(41,000)	(18,075)	(18,075)	
2043	1,102.458	12,912.073	109,440	1,480,440	1,590,440	13.90%	0.86%	13.90%	0.06%	16,576	1,480,440	1,078,332	(18,075)	(18,075)	(42,000)	(18,075)	(18,075)	
2044	992.920	13,588.470	109,254	1,509,254	1,619,254	13.90%	0.85%	13.90%	0.04%	14,254	1,509,254	1,059,332	(18,075)	(18,075)	(43,000)	(18,075)	(18,075)	
2045	885.412	14,284.677	109,067	1,538,067	1,648,067	13.90%	0.83%	13.90%	0.03%	11,932	1,538,067	1,040,332	(18,075)	(18,075)	(44,000)	(18,075)	(18,075)	
2046	783.139	14,997.606	108,881	1,566,881	1,676,881	13.90%	0.81%	13.90%	0.02%	9,610	1,566,881	1,021,332	(18,075)	(18,075)	(45,000)	(18,075)	(18,075)	
2047	680.796	15,729.466	108,695	1,595,695	1,705,695	13.90%	0.80%	13.90%	0.02%	7,288	1,595,695	1,002,332	(18,075)	(18,075)	(46,000)	(18,075)	(18,075)	
2048	573.131	16,484.746	108,509	1,624,509	1,734,509	13.90%	0.79%	13.90%	0.02%	4,966	1,624,509	983,332	(18,075)	(18,075)	(47,000)	(18,075)	(18,075)	
2049	465.713	17,261.980	108,323	1,653,323	1,763,323	13.90%	0.78%	13.90%	0.02%	2,644	1,653,323	964,332	(18,075)	(18,075)	(48,000)	(18,075)	(18,075)	
2050	373.175	18,050.490	108,137	1,682,137	1,792,137	13.90%	0.77%	13.90%	0.02%	30	1,682,137	945,332	(18,075)	(18,075)	(49,000)	(18,075)	(18,075)	
2051	299.011	18,848.441	107,951	1,710,951	1,821,000	13.90%	0.76%	13.90%	0.02%	268	1,710,951	926,332	(18,075)	(18,075)	(50,000)	(18,075)	(18,075)	
2052	235.082	19,664.612	107,765	1,740,765	1,851,864	13.90%	0.75%	13.90%	0.02%	1,066	1,740,765	907,332	(18,075)	(18,075)	(51,000)	(18,075)	(18,075)	
2053	178.915	20,503.240	107,579	1,771,579	1,882,727	13.90%	0.74%	13.90%	0.02%	2,064	1,771,579	888,332	(18,075)	(18,075)	(52,000)	(18,075)	(18,075)	
2054	133.803	21,362.806	107,393	1,802,393	1,913,590	13.90%	0.73%	13.90%	0.02%	3,062	1,802,393	869,332	(18,075)	(18,075)	(53,000)	(18,075)	(18,075)	
2055	101.111	22,243.377	107,207	1,833,207	1,944,453	13.90%	0.72%	13.90%	0.02%	4,060	1,833,207	850,332	(18,075)	(18,075)	(54,000)	(18,075)	(18,075)	
2056	76.276	23,150.859	107,021	1,864,021	1,975,316	13.90%	0.71%	13.90%	0.02%	5,058	1,864,021	831,332	(18,075)	(18,075)	(55,000)	(18,075)	(18,075)	
2057	56.488	24,089.437	106,835	1,894,835	2,006,179	13.90%	0.70%	13.90%	0.02%	6,056	1,894,835	812,332	(18,075)	(18,075)	(56,000)	(18,075)	(18,075)	
2058	41.446	25,060.935	106,649	1,925,649	2,037,042	13.90%	0.69%	13.90%	0.02%	7,054	1,925,649	793,332	(18,075)	(18,075)	(57,000)	(18,075)	(18,075)	
2059	30.655	26,067.418	106,463	1,956,463	2,067,905	13.90%	0.68%	13.90%	0.02%	8,052	1,956,463	774,332	(18,075)	(18,075)	(58,000)	(18,075)	(18,075)	
2060	22.730	27,111.890	106,277	1,987,277	2,098,768	13.90%	0.67%	13.90%	0.02%	9,050	1,987,277	755,332	(18,075)	(18,075)	(59,000)	(18,075)	(18,075)	
			6,553,694	15,587,248	22,140,942					2,380,597	16,523,484	18,904,081	(3,236,861)	(3,236,861)	(4,597)	(368,136)		

<sup>(1)</sup> Effective 1/1/14  
<sup>(2)</sup> In millions.

This exhibit is an attachment to a letter that contains important information and explanations regarding the numbers shown. Therefore, the exhibit should only be considered with the accompanying letter from Cavanaugh Macdonald dated March 19, 2012.  
 All assumptions, including the 8.0% investment return, are assumed to be met each year in the future.

