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March 28, 2012

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

Re: Cost Projections under Senate Bill 429, President Morris/Senator Kelly Cash Balance Plan and Senator King's Plan Design

Dear Alan:

As you requested, we have prepared exhibits to compare the estimated employer costs under three proposed plan designs: (1) Senate Bill 429 (SB 429), (2) President Morris/Senator Kelly Cash Balance Plan (Morris/Kelly Plan), and (3) Senator King's proposed plan design (King Plan). Both SB 429 and Senator King's plan are combination plans with employer contributions used to fund a Cash Balance Plan (defined benefit plan) and employee contributions going into a defined contribution plan. President Morris and Senator Kelly have proposed a Cash Balance Plan (defined benefit plan) funded by both employer and employee contributions. Comprehensive cost studies have previously been performed for each of these three proposed plan designs. Therefore, the cost estimates shown in the attached exhibits are the same as those provided in our prior cost study letters. The cost study letter for SB 429 is dated February 28, 2012. The cost study letter for President Morris/Senator Kelly's Cash Balance Plan is dated March 23, 2012 and the cost study letter for Senator King's proposed plan design is dated March 27, 2012. These letters contain important information including a description of the plan provisions for the proposed plan design, the actuarial assumptions and methods used in preparing the cost projections, and caveats and limitations regarding the modeling results. The exhibits attached to this letter should only be viewed and relied upon after a full review of the prior cost study letters for each plan design.

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. The increases in the statutory cap on the employer contribution rate contained in Senate Substitute for HB 2194 are maintained in the cost projections for all three of the proposed plan designs.

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Attachment 4

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Senate Substitute for HB 2194

The cost projections for all three of the plan designs shown in the attached exhibits 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 the cost projections unless otherwise noted. Please see the cost study letter prepared for each proposed plan design for a full description of all of the actuarial assumptions and methods used in preparing the cost projections.

The Morris/Kelly Cash Balance Plan and the Cash Balance portions of SB 429 and the King Plan are all defined benefit plans. Our modeling assumes that the new tier will be combined with the existing KPERS Tiers 1 and 2 in one system with one trust. However, separate employer contribution rates will continue to be determined for the State/School group and the Local group. The actuarial valuation will reflect the future benefit payments for Tier 3 members along with those for Tier 1 and 2 members and one overall employer contribution rate will be developed for each group, which includes the UAL payment, to be paid on all covered payroll (Tier 1, Tier 2 and Tier 3 members). From an actuarial perspective, the valuation process is unchanged other than reflecting the new benefit structure for Tier 3 members.

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 employer costs over a long period of time is necessary in order to see the long term impact of the proposed plan design. The employer cost estimates under SB 429, the Morris/Kelly Cash Balance Plan, and the King Cash Balance Plan are reflected in the attached exhibits. Exhibits A1 and A2 show the expected employer contribution rate under each plan design by year for the State/School and Local groups and Exhibits B1 and B2 show the estimated dollar amount of employer contributions in each future year. 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 the Morris/Kelly Cash Balance Plan and the King 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. 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 SB 429, the Morris/Kelly Cash Balance Plan, and the King 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 SB 429, whether termination of employment patterns will ultimately be impacted cannot be known at this time. Therefore, no change in that assumption has 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 projections for all three plan designs. Tier 3 benefits are provided under SB 429, the Morris/Kelly Cash Balance Plan or the King Plan as described in the cost study letters previously prepared by Cavanaugh Macdonald Consulting, LLC on February 28, 2012, March 23, 2012 and March 27, 2012. There are no other benefit changes reflected in future years.
- The funding methods including the entry age normal cost method, the asset smoothing method, and the amortization method and period remain unchanged other than as noted elsewhere in this letter.
- The projections assume that state and local employers will contribute as scheduled under Senate Substitute for HB 2194 (with consideration to changes in the statutory caps in that legislation).
- 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.

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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,

Patrice Beckham

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

Brent A. Banister

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

Exhibit A1
 KPERs Contribution Rate Projections under SB 429, Morris/Kelly Cash Balance, and King Cash Balance
 State/School Group

Fiscal Year	Total Payroll (\$MM)	SB 429 vs Morris/Kelly Cash Balance		SB 429 vs King Cash Balance		Morris/Kelly vs King Cash Balance	
		Employer Contribution Rate	Morris/Kelly Cash Balance	Employer Contribution Rate	King Cash Balance	Employer Contribution Rate	King 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	14.89%	14.89%	14.89%	14.77%	14.65%	14.77%
2019	5,585.80	14.90%	14.94%	14.90%	15.18%	15.18%	15.18%
2020	5,786.83	15.14%	15.15%	15.14%	15.43%	15.15%	15.43%
2021	5,999.32	15.31%	15.28%	15.31%	15.58%	15.28%	15.58%
2022	6,223.41	15.40%	15.35%	15.40%	15.67%	15.35%	15.67%
2023	6,458.61	15.48%	15.40%	15.48%	15.72%	15.40%	15.72%
2024	6,704.71	15.53%	15.41%	15.53%	15.74%	15.41%	15.74%
2025	6,962.16	15.56%	15.42%	15.56%	15.74%	15.42%	15.74%
2026	7,231.45	15.59%	15.42%	15.59%	15.73%	15.42%	15.73%
2027	7,512.93	15.60%	15.41%	15.60%	15.71%	15.41%	15.71%
2028	7,806.93	15.61%	15.40%	15.61%	15.66%	15.40%	15.66%
2029	8,113.92	15.61%	15.39%	15.61%	15.61%	15.39%	15.61%
2030	8,433.95	15.57%	15.36%	15.57%	15.53%	15.36%	15.53%
2031	8,767.29	15.52%	15.33%	15.52%	15.42%	15.33%	15.42%
2032	9,114.66	15.42%	15.30%	15.42%	15.29%	15.30%	15.29%
2033	9,476.23	6.84%	6.56%	6.84%	6.84%	6.56%	6.84%
2034	9,852.28	5.40%	5.11%	5.40%	6.84%	6.56%	6.84%
2035	10,243.64	3.91%	3.60%	3.91%	3.91%	3.60%	3.91%
2036	10,650.79	2.50%	2.59%	2.50%	2.90%	2.59%	2.90%
2037	11,073.56	2.47%	2.15%	2.47%	2.46%	2.15%	2.46%
2038	11,513.15	2.20%	1.89%	2.20%	2.19%	1.89%	2.19%
2039	11,970.93	2.09%	1.76%	2.09%	2.05%	1.76%	2.05%
2040	12,448.09	2.05%	1.73%	2.05%	2.02%	1.73%	2.02%
2041	12,947.04	2.07%	1.74%	2.07%	2.01%	1.74%	2.01%
2042	13,469.39	2.11%	1.78%	2.11%	2.04%	1.78%	2.04%
2043	14,014.53	2.16%	1.82%	2.16%	2.08%	1.82%	2.08%
2044	14,581.39	2.23%	1.87%	2.23%	2.13%	1.87%	2.13%
2045	15,170.09	2.30%	1.92%	2.30%	2.18%	1.92%	2.18%
2046	15,780.74	2.36%	1.98%	2.36%	2.24%	1.98%	2.24%
2047	16,410.26	2.41%	2.03%	2.41%	2.28%	2.03%	2.28%
2048	17,057.88	2.49%	2.07%	2.49%	2.33%	2.07%	2.33%
2049	17,727.69	2.54%	2.11%	2.54%	2.36%	2.11%	2.36%
2050	18,423.67	2.60%	2.15%	2.60%	2.40%	2.15%	2.40%
2051	19,147.45	2.65%	2.17%	2.65%	2.44%	2.17%	2.44%
2052	19,899.69	2.71%	2.18%	2.71%	2.48%	2.18%	2.48%
2053	20,682.16	2.75%	2.20%	2.75%	2.50%	2.20%	2.50%
2054	21,496.61	2.80%	2.20%	2.80%	2.52%	2.20%	2.52%
2055	22,344.49	2.85%	2.20%	2.85%	2.56%	2.20%	2.56%
2056	23,227.14	2.89%	2.21%	2.89%	2.58%	2.21%	2.58%
2057	24,145.92	2.92%	2.20%	2.92%	2.60%	2.20%	2.60%
2058	25,102.38	2.95%	2.18%	2.95%	2.61%	2.18%	2.61%
2059	26,098.07	2.98%	2.17%	2.98%	2.63%	2.17%	2.63%
2060	27,134.62	3.00%	2.15%	3.00%	2.64%	2.15%	2.64%

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 28, 2012.

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Exhibit A2
 KPERS Contribution Rate Projections under SB 429, Morris/Kelly Cash Balance, and King Cash Balance
 Local Group

Fiscal Year	Total Payroll (\$MM)	SB 429 vs Morris/Kelly Cash Balance		SB 429 vs King Cash Balance		Morris/Kelly vs King Cash Balance	
		Employer Contribution Rate	Morris/Kelly Cash Balance	Employer Contribution Rate	King Cash Balance	Employer Contribution Rate	King 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%	8.64%	8.65%	8.33%	8.64%	8.33%
2015	1,834.05	9.12%	9.16%	9.12%	9.38%	9.16%	9.38%
2016	1,893.42	9.00%	9.11%	9.00%	9.36%	9.11%	9.36%
2017	1,955.65	9.12%	9.18%	9.00%	9.44%	9.18%	9.44%
2018	2,020.46	9.25%	9.24%	9.00%	9.52%	9.24%	9.52%
2019	2,087.94	9.36%	9.31%	8.99%	9.58%	9.31%	9.58%
2020	2,158.09	9.45%	9.35%	8.98%	9.64%	9.35%	9.64%
2021	2,231.91	9.55%	9.41%	8.98%	9.72%	9.41%	9.72%
2022	2,309.17	9.64%	9.48%	8.98%	9.77%	9.48%	9.77%
2023	2,389.76	9.73%	9.54%	8.98%	9.83%	9.54%	9.83%
2024	2,474.65	9.80%	9.60%	8.97%	9.90%	9.60%	9.90%
2025	2,563.71	9.88%	9.66%	8.98%	9.94%	9.66%	9.94%
2026	2,656.71	9.94%	9.73%	8.97%	9.99%	9.73%	9.99%
2027	2,753.93	10.00%	9.79%	8.97%	10.02%	9.79%	10.02%
2028	2,856.33	10.06%	9.85%	8.96%	10.05%	9.85%	10.05%
2029	2,963.32	10.10%	9.92%	8.94%	10.08%	9.85%	9.92%
2030	3,075.51	10.13%	10.00%	8.93%	10.07%	9.92%	10.06%
2031	3,192.38	10.14%	10.09%	8.91%	10.03%	10.00%	10.07%
2032	3,313.68	4.90%	4.64%	8.91%	10.03%	10.09%	10.03%
2033	3,440.20	4.04%	3.77%	2.75%	4.94%	4.64%	4.94%
2034	3,571.81	3.15%	2.86%	1.82%	3.21%	3.77%	4.08%
2035	3,709.17	2.86%	2.58%	1.49%	2.92%	2.86%	3.21%
2036	3,851.93	2.68%	2.39%	1.27%	2.72%	2.58%	2.92%
2037	4,001.21	2.59%	2.31%	1.14%	2.64%	2.39%	2.72%
2038	4,157.18	2.55%	2.26%	1.06%	2.58%	2.31%	2.64%
2039	4,319.48	2.52%	2.24%	0.99%	2.54%	2.26%	2.58%
2040	4,488.52	2.50%	2.24%	0.94%	2.53%	2.24%	2.54%
2041	4,663.81	2.51%	2.23%	0.90%	2.51%	2.23%	2.53%
2042	4,846.82	2.50%	2.23%	0.86%	2.51%	2.23%	2.51%
2043	5,037.31	2.52%	2.23%	0.83%	2.50%	2.23%	2.50%
2044	5,235.49	2.52%	2.23%	0.81%	2.50%	2.23%	2.50%
2045	5,442.03	2.54%	2.24%	0.79%	2.50%	2.24%	2.50%
2046	5,656.91	2.55%	2.24%	0.77%	2.51%	2.24%	2.51%
2047	5,879.63	2.57%	2.25%	0.76%	2.51%	2.24%	2.51%
2048	6,110.89	2.59%	2.25%	0.74%	2.51%	2.25%	2.51%
2049	6,351.53	2.60%	2.26%	0.74%	2.51%	2.25%	2.51%
2050	6,602.17	2.63%	2.25%	0.73%	2.52%	2.26%	2.52%
2051	6,862.33	2.64%	2.26%	0.73%	2.53%	2.26%	2.53%
2052	7,132.79	2.67%	2.25%	0.74%	2.54%	2.26%	2.54%
2053	7,414.16	2.70%	2.25%	0.73%	2.55%	2.25%	2.54%
2054	7,707.23	2.71%	2.23%	0.73%	2.55%	2.23%	2.55%
2055	8,012.19	2.74%	2.22%	0.74%	2.56%	2.23%	2.55%
2056	8,329.45	2.75%	2.21%	0.74%	2.56%	2.23%	2.56%
2057	8,659.60	2.77%	2.20%	0.76%	2.57%	2.21%	2.56%
2058	9,003.17	2.78%	2.18%	0.76%	2.57%	2.20%	2.57%
2059	9,360.70	2.80%	2.16%	0.76%	2.57%	2.18%	2.57%
2060	9,732.77	2.38%	2.15%	0.76%	2.59%	2.16%	2.59%

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 28, 2012.

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Exhibit B1

KPERS Cost Projections under SB 429, Morris/Kelly Cash Balance, and King Cash Balance
State/School Group

SB 429 vs Morris/Kelly Cash Balance SB 429 vs King Cash Balance Morris/Kelly vs King Cash Balance

Fiscal Year	Total Payroll (\$M)	Employer Contribution Amount (\$M)				Employer Contribution Amount (\$M)				Employer Contribution Amount (\$M)			
		SB 429	Morris/Kelly	Difference	Present Value of Difference	SB 429	King	Difference	Present Value of Difference	Morris/Kelly	King	Difference	Present Value of Difference
2012	4,465.19	391.60	391.60	-	-	391.60	391.60	-	-	391.60	391.60	-	-
2013	4,609.30	431.89	431.89	-	-	431.89	431.89	-	-	431.89	431.89	-	-
2014	4,742.86	487.09	487.09	-	-	487.09	487.09	-	-	487.09	487.09	-	-
2015	4,889.77	551.08	551.08	-	-	551.08	551.08	-	-	551.08	551.08	-	-
2016	5,048.36	624.48	624.48	-	-	624.48	624.48	-	-	624.48	624.48	-	-
2017	5,217.25	707.98	707.98	-	-	707.98	707.98	-	-	707.98	707.98	-	-
2018	5,396.09	786.70	790.73	4.03	2.44	786.70	797.00	10.30	6.25	790.73	797.00	6.27	3.80
2019	5,585.80	832.37	834.29	1.93	1.08	832.37	847.94	15.57	8.74	834.29	847.94	13.65	7.66
2020	5,786.83	876.06	876.06	0.76	0.40	876.06	892.85	16.79	8.73	876.82	892.85	16.03	8.33
2021	5,999.32	918.26	916.87	(1.39)	(0.67)	918.26	924.63	16.37	7.88	916.87	924.63	17.76	8.55
2022	6,223.41	958.55	955.45	(3.11)	(1.38)	958.55	974.90	16.35	7.29	955.45	974.90	19.45	8.67
2023	6,458.61	999.65	994.33	(5.32)	(2.20)	999.65	1,015.09	15.44	6.37	994.33	1,015.09	20.76	8.57
2024	6,704.71	1,033.23	1,033.23	-	-	1,033.23	1,055.03	22.80	5.34	1,033.23	1,055.03	21.80	8.33
2025	6,962.16	1,061.06	1,073.24	(10.00)	(3.55)	1,061.06	1,096.11	35.05	4.54	1,073.24	1,096.11	22.87	7.34
2026	7,231.45	1,127.73	1,115.10	(12.63)	(4.14)	1,127.73	1,137.52	9.79	3.21	1,115.10	1,137.52	22.42	7.34
2027	7,512.93	1,157.84	1,157.84	-	-	1,157.84	1,179.93	22.09	2.35	1,157.84	1,179.93	22.09	6.70
2028	7,806.93	1,218.68	1,202.60	(16.08)	(4.52)	1,218.68	1,222.84	4.16	1.17	1,202.60	1,222.84	20.24	5.69
2029	8,113.92	1,266.56	1,248.86	(17.70)	(4.60)	1,266.56	1,266.54	(0.02)	(0.01)	1,248.86	1,266.54	17.68	3.41
2030	8,433.95	1,313.55	1,295.53	(18.02)	(3.64)	1,313.55	1,309.69	(3.85)	(0.93)	1,295.53	1,309.69	14.17	3.41
2031	8,767.29	1,360.64	1,344.30	(16.35)	(3.64)	1,360.64	1,352.10	(8.54)	(1.90)	1,344.30	1,352.10	7.80	1.74
2032	9,114.66	1,405.92	1,394.13	(11.79)	(2.43)	1,405.92	1,390.33	(15.59)	(3.22)	1,394.13	1,390.33	(3.80)	(0.78)
2033	9,476.23	1,452.11	1,442.11	(10.00)	(3.07)	1,452.11	1,442.11	-	-	1,442.11	1,442.11	-	-
2034	9,852.28	1,500.00	1,489.00	(11.00)	(3.23)	1,500.00	1,489.00	(11.00)	(3.23)	1,489.00	1,489.00	-	-
2035	10,243.64	1,548.38	1,536.00	(12.38)	(3.52)	1,548.38	1,536.00	(12.38)	(3.52)	1,536.00	1,536.00	-	-
2036	10,650.79	1,600.00	1,587.00	(13.00)	(3.81)	1,600.00	1,587.00	(13.00)	(3.81)	1,587.00	1,587.00	-	-
2037	11,073.56	1,652.38	1,638.00	(14.38)	(4.10)	1,652.38	1,638.00	(14.38)	(4.10)	1,638.00	1,638.00	-	-
2038	11,513.15	1,705.24	1,690.00	(15.24)	(4.39)	1,705.24	1,690.00	(15.24)	(4.39)	1,690.00	1,690.00	-	-
2039	11,970.93	1,758.68	1,742.00	(16.68)	(4.68)	1,758.68	1,742.00	(16.68)	(4.68)	1,742.00	1,742.00	-	-
2040	12,448.09	1,812.76	1,795.00	(17.76)	(4.97)	1,812.76	1,795.00	(17.76)	(4.97)	1,795.00	1,795.00	-	-
2041	12,947.04	1,867.44	1,848.00	(19.44)	(5.26)	1,867.44	1,848.00	(19.44)	(5.26)	1,848.00	1,848.00	-	-
2042	13,469.39	1,922.76	1,901.00	(21.76)	(5.55)	1,922.76	1,901.00	(21.76)	(5.55)	1,901.00	1,901.00	-	-
2043	14,014.53	1,978.72	1,955.00	(23.72)	(5.84)	1,978.72	1,955.00	(23.72)	(5.84)	1,955.00	1,955.00	-	-
2044	14,581.39	2,035.32	2,010.00	(25.32)	(6.13)	2,035.32	2,010.00	(25.32)	(6.13)	2,010.00	2,010.00	-	-
2045	15,170.09	2,092.64	2,065.00	(27.64)	(6.42)	2,092.64	2,065.00	(27.64)	(6.42)	2,065.00	2,065.00	-	-
2046	15,780.74	2,150.72	2,121.00	(29.72)	(6.71)	2,150.72	2,121.00	(29.72)	(6.71)	2,121.00	2,121.00	-	-
2047	16,410.26	2,210.28	2,178.00	(32.28)	(7.00)	2,210.28	2,178.00	(32.28)	(7.00)	2,178.00	2,178.00	-	-
2048	17,057.88	2,271.44	2,236.00	(35.44)	(7.29)	2,271.44	2,236.00	(35.44)	(7.29)	2,236.00	2,236.00	-	-
2049	17,727.69	2,334.28	2,296.00	(38.28)	(7.58)	2,334.28	2,296.00	(38.28)	(7.58)	2,296.00	2,296.00	-	-
2050	18,423.67	2,400.00	2,358.00	(42.00)	(7.87)	2,400.00	2,358.00	(42.00)	(7.87)	2,358.00	2,358.00	-	-
2051	19,147.45	2,467.72	2,424.00	(43.72)	(8.16)	2,467.72	2,424.00	(43.72)	(8.16)	2,424.00	2,424.00	-	-
2052	19,899.69	2,537.44	2,481.00	(56.44)	(8.45)	2,537.44	2,481.00	(56.44)	(8.45)	2,481.00	2,481.00	-	-
2053	20,682.16	2,609.16	2,536.00	(73.16)	(8.74)	2,609.16	2,536.00	(73.16)	(8.74)	2,536.00	2,536.00	-	-
2054	21,496.61	2,682.88	2,588.00	(94.88)	(9.03)	2,682.88	2,588.00	(94.88)	(9.03)	2,588.00	2,588.00	-	-
2055	22,344.49	2,758.60	2,638.00	(120.60)	(9.32)	2,758.60	2,638.00	(120.60)	(9.32)	2,638.00	2,638.00	-	-
2056	23,227.14	2,836.32	2,688.00	(148.32)	(9.61)	2,836.32	2,688.00	(148.32)	(9.61)	2,688.00	2,688.00	-	-
2057	24,145.92	2,916.04	2,738.00	(178.04)	(9.90)	2,916.04	2,738.00	(178.04)	(9.90)	2,738.00	2,738.00	-	-
2058	25,102.38	2,997.76	2,788.00	(209.76)	(10.19)	2,997.76	2,788.00	(209.76)	(10.19)	2,788.00	2,788.00	-	-
2059	26,098.07	3,081.48	2,838.00	(243.48)	(10.48)	3,081.48	2,838.00	(243.48)	(10.48)	2,838.00	2,838.00	-	-
2060	27,134.62	3,167.20	2,888.00	(279.20)	(10.77)	3,167.20	2,888.00	(279.20)	(10.77)	2,888.00	2,888.00	-	-
Total	\$ 32,696.19	\$ 3,255.92	\$ 3,190.58	(\$ 65.34)	(\$ 2.84)	\$ 3,255.92	\$ 3,190.58	(\$ 65.34)	(\$ 2.84)	\$ 3,190.58	\$ 3,190.58	(\$ 65.34)	(\$ 2.84)
Present Value at 8% as of July 1, 2011	\$ 9,202.56	\$ 9,034.81	\$ 9,220.66	(\$ 187.75)	18.10	\$ 9,034.81	\$ 9,220.66	(\$ 187.75)	18.10	\$ 9,220.66	\$ 9,220.66	(\$ 187.75)	18.10

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 Avenawugh, Macedoni dated March 28, 2012. All assumptions, including the 8% investment return, are assumed to be met each year in the future.

Exhibit B2
KPERS Cost Projections under SB 429, Morris/Kelly Cash Balance, and King Cash Balance
 Local Group



Fiscal Year	Total Payroll (\$MM)	Employer Contribution Amount (\$MM)			Present Value of Difference			Employer Contribution Amount (\$MM)			Present Value of Difference		
		SB 429	Morris/Kelly	Difference	SB 429	Morris/Kelly	Difference	SB 429	Morris/Kelly	Difference	SB 429	Morris/Kelly	Difference
2012	1,678.75	123.22	123.22	-	123.22	123.22	-	123.22	123.22	-	123.22	123.22	-
2013	1,726.92	137.12	137.12	-	137.12	137.12	-	137.12	137.12	-	137.12	137.12	-
2014	1,777.74	153.84	153.84	(0.19)	153.84	156.97	3.14	153.84	156.97	3.14	153.84	156.97	3.33
2015	1,834.05	167.26	167.26	0.67	167.26	171.99	4.73	167.26	171.99	4.73	167.26	171.99	4.06
2016	1,893.42	170.45	172.43	1.98	170.45	177.23	6.77	170.45	177.23	6.77	170.45	177.23	4.80
2017	1,955.65	178.45	179.43	0.98	178.45	184.67	6.22	178.45	184.67	6.22	178.45	184.67	5.24
2018	2,020.46	186.81	186.72	(0.09)	186.81	192.26	5.46	186.81	192.26	5.46	186.81	192.26	5.55
2019	2,087.94	195.33	195.33	(0.05)	195.33	199.99	4.66	195.33	199.99	4.66	195.33	199.99	5.36
2020	2,158.09	203.93	201.76	(2.17)	203.93	208.08	4.15	203.93	208.08	4.15	203.93	208.08	3.20
2021	2,231.91	213.13	210.08	(3.05)	213.13	216.87	3.73	213.13	216.87	3.73	213.13	216.87	3.29
2022	2,309.17	222.55	218.86	(3.69)	222.55	225.70	3.15	222.55	225.70	3.15	222.55	225.70	3.27
2023	2,389.76	232.44	227.91	(4.53)	232.44	235.28	2.84	232.44	235.28	2.84	232.44	235.28	3.05
2024	2,474.65	242.63	237.50	(5.13)	242.63	244.94	2.31	242.63	244.94	2.31	242.63	244.94	2.84
2025	2,565.71	253.18	247.70	(5.49)	253.18	254.95	1.76	253.18	254.95	1.76	253.18	254.95	2.84
2026	2,656.71	264.04	258.47	(5.58)	264.04	265.50	1.46	264.04	265.50	1.46	264.04	265.50	2.57
2027	2,753.93	275.47	269.55	(5.92)	275.47	276.07	0.60	275.47	276.07	0.60	275.47	276.07	2.31
2028	2,856.33	287.31	281.32	(5.99)	287.31	286.97	(0.34)	287.31	286.97	(0.34)	287.31	286.97	1.98
2029	2,963.32	299.21	294.03	(5.19)	299.21	298.14	(0.99)	299.21	298.14	(0.99)	299.21	298.14	1.59
2030	3,075.51	311.47	307.46	(4.01)	311.47	309.57	(1.90)	311.47	309.57	(1.90)	311.47	309.57	1.07
2031	3,192.38	323.66	322.21	(1.45)	323.66	320.24	(3.43)	323.66	320.24	(3.43)	323.66	320.24	0.51
2032	3,313.68	333.68	332.66	(1.02)	333.68	330.24	(3.44)	333.68	330.24	(3.44)	333.68	330.24	(0.44)
2033	3,440.20	344.20	342.38	(1.82)	344.20	340.87	(3.33)	344.20	340.87	(3.33)	344.20	340.87	2.03
2034	3,571.81	357.18	355.77	(1.41)	357.18	353.66	(3.52)	357.18	353.66	(3.52)	357.18	353.66	2.07
2035	3,709.17	370.91	369.65	(1.26)	370.91	366.12	(4.79)	370.91	366.12	(4.79)	370.91	366.12	2.22
2036	3,851.93	385.19	383.82	(1.37)	385.19	380.06	(5.13)	385.19	380.06	(5.13)	385.19	380.06	2.06
2037	4,001.21	400.12	398.82	(1.30)	400.12	394.94	(5.18)	400.12	394.94	(5.18)	400.12	394.94	1.86
2038	4,157.18	415.71	414.44	(1.27)	415.71	410.87	(4.84)	415.71	410.87	(4.84)	415.71	410.87	1.70
2039	4,319.48	431.94	430.65	(1.29)	431.94	426.14	(5.80)	431.94	426.14	(5.80)	431.94	426.14	1.56
2040	4,488.52	448.85	447.58	(1.27)	448.85	442.85	(6.00)	448.85	442.85	(6.00)	448.85	442.85	1.46
2041	4,663.81	466.38	465.11	(1.27)	466.38	460.33	(6.05)	466.38	460.33	(6.05)	466.38	460.33	1.37
2042	4,846.82	484.68	483.41	(1.27)	484.68	477.16	(7.52)	484.68	477.16	(7.52)	484.68	477.16	1.28
2043	5,037.31	503.73	502.46	(1.27)	503.73	495.67	(8.06)	503.73	495.67	(8.06)	503.73	495.67	1.20
2044	5,235.49	523.54	522.27	(1.27)	523.54	515.61	(7.93)	523.54	515.61	(7.93)	523.54	515.61	1.15
2045	5,442.03	544.20	542.93	(1.27)	544.20	536.00	(8.20)	544.20	536.00	(8.20)	544.20	536.00	1.06
2046	5,656.91	565.69	564.42	(1.27)	565.69	557.37	(8.32)	565.69	557.37	(8.32)	565.69	557.37	0.95
2047	5,879.63	587.96	586.69	(1.27)	587.96	579.37	(8.59)	587.96	579.37	(8.59)	587.96	579.37	0.95
2048	6,110.89	611.09	609.82	(1.27)	611.09	602.44	(8.65)	611.09	602.44	(8.65)	611.09	602.44	0.95
2049	6,351.53	635.15	633.88	(1.27)	635.15	625.37	(9.78)	635.15	625.37	(9.78)	635.15	625.37	0.93
2050	6,602.17	660.21	658.94	(1.27)	660.21	650.16	(10.05)	660.21	650.16	(10.05)	660.21	650.16	0.91
2051	6,862.33	686.23	684.96	(1.27)	686.23	676.01	(10.22)	686.23	676.01	(10.22)	686.23	676.01	0.89
2052	7,132.79	713.27	712.00	(1.27)	713.27	702.73	(10.54)	713.27	702.73	(10.54)	713.27	702.73	0.90
2053	7,414.16	741.41	740.14	(1.27)	741.41	730.59	(10.82)	741.41	730.59	(10.82)	741.41	730.59	0.91
2054	7,707.23	770.72	769.45	(1.27)	770.72	759.18	(11.54)	770.72	759.18	(11.54)	770.72	759.18	0.94
2055	8,012.19	801.21	800.00	(1.21)	801.21	789.54	(11.67)	801.21	789.54	(11.67)	801.21	789.54	0.94
2056	8,329.45	832.94	831.67	(1.27)	832.94	820.14	(12.80)	832.94	820.14	(12.80)	832.94	820.14	0.96
2057	8,659.60	865.96	864.69	(1.27)	865.96	852.82	(13.14)	865.96	852.82	(13.14)	865.96	852.82	0.96
2058	9,003.17	900.31	899.04	(1.27)	900.31	886.57	(13.74)	900.31	886.57	(13.74)	900.31	886.57	0.98
2059	9,360.70	936.07	934.80	(1.27)	936.07	921.41	(14.66)	936.07	921.41	(14.66)	936.07	921.41	0.98
2060	9,732.77	973.27	972.00	(1.27)	973.27	957.77	(15.50)	973.27	957.77	(15.50)	973.27	957.77	1.03
Total	9,137.42	913.74	913.74	(56.84)	913.74	905.77	24.74	913.74	905.77	24.74	913.74	905.77	81.58
Present Value at 8% as of July 1, 2011	2,363.49	2,306.65	(56.84)	2,363.49	2,388.23	24.74	2,363.49	2,388.23	24.74	2,363.49	2,388.23	24.74	81.58

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 vanough Macdonald dated March 28, 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
Senate Cash Balance Plan (Morris/Kelly) versus Senate Cash Balance Plan (King)

FYE	Payroll (\$M)		Senate Cash Balance Plan (Morris/Kelly) ⁽¹⁾					Senate Cash Balance Plan (King) ⁽²⁾					Difference ⁽³⁾	Present Value of Difference
	Tier 1/2	Tier 3	Employer Rate/DB	Normal Cost Rate	Normal Cost ⁽⁴⁾	UAL Payment ⁽⁵⁾	Total Cost ⁽⁶⁾	Employer Rate/DB	DB Normal Cost Rate	DB Normal Cost ⁽⁷⁾	UAL Payment ⁽⁸⁾	Total Cost ⁽⁹⁾		
2012	4,465,186	0.000	8.77%	3.31%	147,582	244,014	391,597	8.77%	3.31%	147,582	244,014	391,597	0.000	0.000
2013	4,609,301	0.000	9.37%	3.31%	152,346	279,546	431,892	9.37%	3.31%	152,346	279,546	431,892	0.000	0.000
2014	4,742,859	0.000	10.27%	3.31%	156,760	330,332	487,092	10.27%	3.31%	156,760	330,332	487,092	0.000	0.000
2015	4,706,273	183,492	11.27%	2.35%	114,792	436,285	551,077	11.27%	2.50%	122,183	428,894	551,077	0.000	0.000
2016	4,507,134	183,492	12.37%	2.25%	115,496	508,986	624,482	12.37%	2.46%	124,439	500,043	624,482	0.000	0.000
2017	4,332,724	884,524	13.57%	2.25%	117,146	590,835	707,981	13.57%	2.44%	127,338	580,642	707,981	0.000	0.000
2018	4,171,368	1,224,718	14.65%	2.22%	119,997	670,734	790,731	14.77%	2.44%	131,606	665,396	797,002	6,271	10,042
2019	4,017,143	1,568,662	14.94%	2.20%	122,662	711,631	834,293	15.18%	2.43%	135,751	712,190	847,941	13,648	15,969
2020	3,868,916	1,917,913	15.15%	2.15%	125,691	751,130	876,821	15.43%	2.43%	140,560	752,288	892,848	16,027	18,831
2021	3,729,151	2,270,169	15.28%	2.15%	129,160	787,711	916,870	15.58%	2.43%	145,717	788,911	934,628	17,758	21,076
2022	3,597,727	2,625,683	15.35%	2.13%	132,712	822,735	955,447	15.67%	2.44%	151,542	823,357	974,899	19,452	22,910
2023	3,469,577	2,989,037	15.40%	2.12%	136,628	857,704	994,332	15.72%	2.44%	157,391	857,704	1,015,095	20,763	24,217
2024	3,343,442	3,361,269	15.41%	2.10%	140,831	892,397	1,033,228	15.74%	2.45%	163,973	891,056	1,055,029	21,801	25,075
2025	3,218,508	3,743,649	15.42%	2.09%	145,184	928,056	1,073,239	15.74%	2.45%	170,837	925,271	1,096,108	22,869	25,823
2026	3,095,688	4,135,766	15.42%	2.08%	150,422	964,676	1,115,098	15.79%	2.47%	178,624	958,891	1,137,515	22,418	26,274
2027	2,976,817	4,536,108	15.41%	2.07%	155,617	1,002,224	1,157,841	15.71%	2.49%	186,726	993,209	1,222,839	20,242	26,675
2028	2,861,609	4,945,319	15.40%	2.07%	161,933	1,040,664	1,202,597	15.66%	2.50%	195,447	1,027,392	1,266,543	22,094	26,755
2029	2,748,479	5,365,437	15.39%	2.07%	168,091	1,080,774	1,248,865	15.61%	2.53%	205,243	1,094,726	1,309,693	20,242	26,705
2030	2,636,015	5,797,930	15.36%	2.07%	174,656	1,120,871	1,295,527	15.49%	2.57%	214,967	1,126,597	1,352,099	14,166	26,273
2031	2,523,441	6,243,849	15.30%	2.07%	181,754	1,162,543	1,344,297	15.42%	2.57%	225,502	1,162,597	1,395,222	7,802	25,527
2032	2,410,718	6,703,938	15.30%	2.08%	189,172	1,204,958	1,394,130	15.25%	2.59%	236,415	1,153,916	1,439,331	(3,799)	25,505
2033	2,297,300	7,178,932	6.56%	2.08%	197,578	1,249,535	1,442,113	6.84%	2.62%	247,953	1,161,300	1,482,850	25,737	25,233
2034	2,182,241	7,670,035	5.11%	2.09%	205,873	1,297,539	1,490,411	5.40%	2.65%	260,775	1,177,021	1,527,789	31,325	24,913
2035	2,065,928	8,177,707	3.60%	2.09%	214,320	1,349,679	1,538,999	3.91%	2.67%	273,303	1,202,021	1,572,324	33,860	24,250
2036	1,948,113	8,702,679	2.59%	2.10%	223,981	1,402,170	1,587,151	2.90%	2.69%	286,663	1,227,021	1,617,899	35,021	23,724
2037	1,827,085	9,246,479	2.15%	2.11%	233,339	1,454,429	1,635,768	2.46%	2.71%	300,473	1,251,824	1,663,663	35,074	23,049
2038	1,703,396	9,809,757	1.89%	2.12%	243,961	1,507,539	1,684,500	2.07%	2.72%	315,877	1,276,021	1,709,944	35,049	22,555
2039	1,578,269	10,392,660	1.76%	2.12%	253,994	1,560,961	1,733,955	2.02%	2.76%	330,941	1,300,944	1,756,860	35,050	22,417
2040	1,452,370	10,995,722	1.73%	2.14%	265,602	1,615,292	1,782,894	2.02%	2.81%	346,710	1,325,576	1,803,324	35,049	22,655
2041	1,329,445	11,617,595	1.74%	2.15%	276,779	1,670,623	1,832,402	2.04%	2.83%	363,409	1,350,969	1,850,824	35,773	22,197
2042	1,213,354	12,256,040	1.78%	2.15%	289,480	1,727,954	1,881,434	2.08%	2.85%	381,825	1,377,412	1,900,000	36,759	21,719
2043	1,102,458	12,912,073	1.82%	2.15%	301,522	1,787,276	1,932,800	2.08%	2.87%	399,945	1,404,804	1,950,824	37,775	21,180
2044	992,920	13,588,470	1.87%	2.16%	315,258	1,848,608	1,986,366	2.13%	2.89%	418,649	1,434,253	2,002,477	38,238	20,731
2045	885,412	14,284,677	1.92%	2.16%	328,128	1,915,946	2,038,074	2.18%	2.91%	437,665	1,463,768	2,052,477	40,337	20,552
2046	783,139	14,997,606	1.98%	2.17%	342,609	1,985,285	2,093,894	2.28%	2.92%	458,694	1,493,244	2,103,324	40,864	19,562
2047	680,796	15,729,466	2.03%	2.18%	357,111	2,056,629	2,153,740	2.33%	2.93%	480,188	1,522,688	2,153,740	44,493	18,864
2048	573,131	16,484,746	2.07%	2.18%	371,111	2,129,970	2,219,081	2.36%	2.93%	499,188	1,552,081	2,203,324	46,598	18,268
2049	465,713	17,261,980	2.11%	2.18%	386,602	2,205,285	2,282,887	2.40%	2.95%	519,003	1,581,477	2,252,000	62,409	17,669
2050	373,175	18,050,490	2.15%	2.19%	402,876	2,282,554	2,352,430	2.46%	2.96%	541,592	1,610,865	2,301,324	60,083	16,438
2051	299,011	18,848,441	2.17%	2.19%	419,696	2,360,785	2,421,481	2.48%	2.96%	565,705	1,640,244	2,350,824	62,409	15,814
2052	235,082	19,664,612	2.18%	2.19%	435,167	2,440,070	2,490,237	2.50%	2.96%	591,138	1,670,623	2,400,000	69,115	15,287
2053	178,915	20,503,240	2.20%	2.19%	452,937	2,520,305	2,559,266	2.52%	2.96%	618,198	1,701,019	2,350,000	78,445	14,703
2054	133,803	21,362,806	2.20%	2.19%	471,348	2,601,582	2,628,930	2.58%	2.98%	646,908	1,731,418	2,300,000	86,099	14,144
2055	101,111	22,243,377	2.20%	2.19%	490,382	2,682,805	2,700,427	2.60%	2.98%	676,263	1,761,817	2,250,000	96,707	13,540
2056	76,276	23,150,859	2.21%	2.20%	510,125	2,764,030	2,779,155	2.61%	2.98%	706,617	1,792,216	2,200,000	108,026	13,098
2057	51,446	24,089,437	2.18%	2.19%	530,558	2,845,253	2,859,811	2.63%	2.98%	737,011	1,822,615	2,150,000	120,118	12,541
2058	30,655	25,060,935	2.17%	2.19%	549,273	2,926,476	2,934,549	2.64%	2.98%	767,405	1,853,014	2,100,000	133,010	12,135
2059	40,655	26,067,418	2.15%	2.19%	571,198	3,007,700	3,009,748	2.64%	2.98%	808,407	1,883,413	2,050,000	1,764,293	903,135
2060	22,730	27,111,890	2.15%	2.19%	593,993	3,089,924	3,111,917	2.64%	2.98%	838,407	1,913,812	2,000,000	1,764,293	903,135

Effective 1/1/14
In millions.

This exhibit is an attachment to a letter that contains important information and explanations regarding the numbers shown. Therefore, the exhibit should only be considered with the accompanying letter from Cavanaugh Macdonald dated March 28, 2012.
All assumptions, including the 8.0% investment return, are assumed to be met each year in the future.



Exhibit C2

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

FYE	Payroll (\$MM)			Senate Cash Balance Plan (Morris/Kelly) (0)				Senate Cash Balance Plan (King) (1)				Difference (2)	Present Value of Difference	
	Tier 1/2	Tier 3	Rate/DB	Normal Cost Rate	Normal Cost (2)	UAI Payment (2)	Total Cost (2)	Employer Rate/DB	DB Normal Cost Rate	DB Normal Cost (2)	UAI Payment (2)			Total Cost (2)
2012	1,678,751	0.000	7.34%	2.94%	49,355	73,865	123,220	7.34%	2.94%	49,355	73,865	123,220	0.000	0.000
2013	1,726,922	0.000	7.94%	2.94%	50,772	86,346	137,118	7.94%	2.94%	50,772	86,346	137,118	0.000	0.000
2014	1,777,741	0.000	8.64%	1.95%	34,713	118,931	153,644	8.83%	2.16%	38,296	118,575	156,871	3,328	2,886
2015	1,682,855	151,199	9.16%	1.90%	34,773	133,152	167,925	9.38%	2.13%	39,020	132,969	171,989	4,064	4,790
2016	1,601,267	292,153	9.11%	1.87%	35,347	137,084	172,430	9.36%	2.11%	39,954	137,273	177,227	4,796	4,790
2017	1,531,885	423,760	9.24%	1.86%	36,281	143,153	179,434	9.44%	2.11%	41,325	143,349	184,673	5,239	5,676
2018	1,468,854	551,608	9.31%	1.84%	37,201	149,514	186,715	9.52%	2.12%	42,748	149,514	192,263	5,547	6,320
2019	1,411,513	676,427	9.35%	1.83%	38,107	156,178	194,285	9.58%	2.12%	44,227	155,760	199,988	5,703	6,877
2020	1,357,016	801,074	9.41%	1.81%	39,042	162,720	201,762	9.64%	2.12%	45,795	162,288	208,084	6,321	7,471
2021	1,306,765	925,141	9.48%	1.78%	40,111	170,071	210,083	9.72%	2.13%	47,466	169,402	216,868	6,786	7,879
2022	1,259,029	1,050,142	9.54%	1.77%	41,055	177,806	218,861	9.77%	2.13%	49,279	176,421	225,699	6,838	8,142
2023	1,211,644	1,178,114	9.60%	1.76%	42,225	183,684	227,909	9.85%	2.13%	51,266	184,011	235,277	7,368	8,562
2024	1,166,580	1,308,070	9.68%	1.75%	43,490	194,013	237,502	9.90%	2.16%	53,402	191,538	244,940	7,438	8,734
2025	1,122,814	1,440,897	9.73%	1.75%	44,906	202,790	247,695	9.94%	2.17%	55,749	199,200	254,949	7,234	8,786
2026	1,079,538	1,577,175	9.79%	1.75%	46,459	212,006	258,465	9.99%	2.19%	58,279	207,224	265,503	7,038	8,901
2027	1,036,739	1,717,192	9.83%	1.75%	48,133	221,416	269,549	10.02%	2.21%	60,986	215,082	276,068	6,519	8,818
2028	996,305	1,860,024	9.92%	1.75%	49,953	231,363	281,316	10.05%	2.24%	63,892	223,079	286,971	5,556	8,723
2029	956,653	2,006,671	10.00%	1.75%	51,922	242,104	294,026	10.06%	2.26%	66,998	231,139	298,137	4,111	8,613
2030	918,258	2,157,256	10.09%	1.76%	54,036	253,422	307,459	10.07%	2.29%	70,298	239,275	309,573	2,114	8,413
2031	880,111	2,312,267	10.09%	1.76%	56,289	265,925	322,214	10.03%	2.31%	73,784	246,452	320,236	9,829	8,100
2032	841,490	2,472,188	10.09%	1.77%	58,672	278,921	337,593	10.03%	2.34%	77,448	254,917	330,366	10,820	8,755
2033	802,890	2,637,309	10.09%	1.78%	61,203	293,460	354,663	10.03%	2.36%	81,312	264,452	341,764	12,570	8,810
2034	763,519	2,808,290	10.09%	1.79%	63,880	309,103	372,983	10.03%	2.39%	85,379	275,289	354,567	12,925	8,209
2035	724,959	2,984,212	10.09%	1.80%	66,713	326,128	392,841	10.03%	2.42%	89,662	289,289	369,503	12,925	8,074
2036	685,180	3,166,753	10.09%	1.81%	69,699	343,716	412,415	10.03%	2.44%	94,152	304,917	386,667	12,897	8,498
2037	645,945	3,355,264	10.09%	1.82%	72,846	362,341	432,187	10.03%	2.47%	98,865	320,279	404,143	12,897	8,498
2038	606,916	3,550,260	10.09%	1.83%	76,168	382,128	452,296	10.03%	2.50%	103,818	336,326	422,567	12,897	8,498
2039	567,903	3,751,578	10.09%	1.84%	79,643	403,103	472,746	10.03%	2.53%	108,982	352,917	441,503	12,897	8,498
2040	528,254	3,960,270	10.09%	1.84%	83,277	424,316	493,593	10.03%	2.56%	114,365	369,917	461,000	12,897	8,498
2041	486,776	4,177,037	10.09%	1.87%	87,069	445,863	514,932	10.03%	2.59%	119,965	387,417	481,400	12,897	8,498
2042	445,926	4,400,890	10.09%	1.88%	90,976	467,646	536,622	10.03%	2.62%	125,812	405,817	501,700	12,897	8,498
2043	405,937	4,631,369	10.09%	1.90%	95,072	489,663	558,735	10.03%	2.65%	131,897	424,316	522,000	12,897	8,498
2044	365,661	4,869,826	10.09%	1.91%	99,376	511,917	581,291	10.03%	2.68%	138,195	443,103	543,500	12,897	8,498
2045	326,896	5,115,138	10.09%	1.92%	103,888	535,277	605,165	10.03%	2.71%	144,711	462,341	565,000	12,897	8,498
2046	290,352	5,366,555	10.09%	1.92%	108,756	559,603	629,359	10.03%	2.74%	151,428	481,917	587,500	12,897	8,498
2047	254,343	5,625,289	10.09%	1.93%	113,559	584,374	654,933	10.03%	2.77%	158,327	501,917	610,000	12,897	8,498
2048	218,593	5,892,300	10.09%	1.94%	118,512	609,603	680,117	10.03%	2.80%	165,424	522,341	632,500	12,897	8,498
2049	184,549	6,166,985	10.09%	1.95%	123,645	635,277	706,932	10.03%	2.83%	172,749	543,103	655,000	12,897	8,498
2050	155,998	6,446,177	10.09%	1.96%	128,954	670,603	732,558	10.03%	2.86%	180,303	564,316	677,500	12,897	8,498
2051	129,299	6,733,933	10.09%	1.97%	134,425	706,103	758,528	10.03%	2.89%	188,074	585,817	700,000	12,897	8,498
2052	104,361	7,028,427	10.09%	1.98%	140,066	741,863	784,929	10.03%	2.92%	196,080	607,417	722,500	12,897	8,498
2053	81,172	7,332,993	10.09%	1.97%	145,912	777,917	811,829	10.03%	2.95%	204,354	629,603	745,000	12,897	8,498
2054	63,826	7,643,400	10.09%	1.97%	151,965	814,277	839,242	10.03%	2.98%	212,911	652,341	767,500	12,897	8,498
2055	50,205	7,961,988	10.09%	2.22%	158,230	850,917	868,147	10.03%	2.77%	221,766	675,603	790,000	12,897	8,498
2056	38,812	8,290,643	10.09%	2.21%	164,712	887,646	896,358	10.03%	2.56%	230,932	699,316	812,500	12,897	8,498
2057	29,195	8,630,402	10.09%	2.20%	171,441	925,277	925,718	10.03%	2.57%	240,439	723,417	835,000	12,897	8,498
2058	22,087	8,981,087	10.09%	2.18%	178,437	964,503	955,940	10.03%	2.57%	250,312	747,603	857,500	12,897	8,498
2059	16,902	9,343,797	10.09%	2.16%	185,713	1,004,277	987,562	10.03%	2.57%	260,571	771,917	880,000	12,897	8,498
2060	12,843	9,719,925	10.09%	2.15%	193,286	1,044,603	1,017,317	10.03%	2.59%	271,238	796,603	902,500	12,897	8,498
Effective 1/1/14					4,200,798	42,146,623	8,415,421			5,662,461	3,396,307	9,058,768	643,347	327,108

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