

Actuarial Analysis Summary

AA Statements 1 and 2 of 2

BR or Bill Ref. SB209 (22 RS SB 209/ HCS 1)

Date: 3/9/2022

Actuary: GRS

Actuarial Analysis Conducted For:

☐ KERS NH ☐ KERS Haz ☐ SPRS ☐ TRS

☒ CERS NH ☒ CERS Haz ☐ LRP ☐ JRP

Section I: Executive Summary

In the opinion of the actuary, this bill would make the affected state-administered retirement system(s) actuarially:

☐ MORE SOUND ☒ LESS SOUND (CERS Haz) ☒ NO IMPACT (CERS NH)

If actuarially MORE SOUND OR LESS SOUND, please summarize the factors leading to the actuary's opinion:

The actuarially determined contribution rates increase by 0.34% of pay and 0.93% of pay for the CERS Non-Hazardous and CERS Hazardous funds, respectively, for FYE 2023. As long as employer contribution rates are increased accordingly, we do not believe this benefit change will impact the current actuarial soundness of the funds.

However, under current statutes, the CERS Hazardous fund is expected to receive the full actuarially determined contribution rate (ADEC) of 49.59% of pay for FYE 2023. This proposed legislation increases the ADEC above the maximum rate of 49.65% of pay, allowed under the CERS phase-in provisions. Given that the phase-in provisions were designed to phase-in the assumption changes adopted by the Board, legislators may want to consider amending the phase-in provisions so that the increase associated with this proposed legislation be immediately recognized in the employer contribution rate.

Does this bill increase or decrease employer costs? ☒ INCREASE ☐ DECREASE ☐ NO IMPACT

Does this bill increase or decrease benefits? ☒ INCREASE ☐ DECREASE ☐ NO IMPACT

Does this bill increase or decrease benefit participation? ☒ INCREASE ☐ DECREASE ☐ NO IMPACT

If the bill impacts employer costs, benefits, or benefit participation, please explain and estimate the impact in Sections II and VI.

Section II: Financial Projections

	Combined Pension and Retiree Health Plan					
	CERS Non-Hazardous*		CERS Hazardous*		N/A	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected Employer Cost* (\$ in Millions)						
30-Yr Nominal \$	\$20,742	\$21,094	\$8,604	\$8,766	N/A	N/A
30-Yr Net Present Value \$	\$9,198	\$9,349	\$3,855	\$3,929	N/A	N/A
Proj. Normal Cost for New Hire	4.06% of pay	4.32% of pay	7.75% of pay	8.19% of pay	N/A	N/A

*Projected costs are for all employers and all fund sources for entire 30-year period.

Proj. normal cost is the normal cost for new hires after subtracting employee contributions.

	Pension Plan					
	CERS Non-Hazardous*		CERS Hazardous*		N/A	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected UAL (\$ in Millions)						
Baseline (Year 1)	\$7,179	\$7,179	\$3,000	\$3,000	N/A	N/A
5 Years	\$6,118	\$6,118	\$2,662	\$2,662	N/A	N/A
10 Years	\$5,894	\$5,894	\$2,535	\$2,535	N/A	N/A
20 Years	\$4,472	\$4,472	\$1,800	\$1,800	N/A	N/A
30 Years	\$0	\$0	\$0	\$0	N/A	N/A
Projected Funding Ratio (%)						
Baseline (Year 1)	52%	52%	47%	47%	N/A	N/A
5 Years	62%	62%	57%	57%	N/A	N/A
10 Years	66%	66%	63%	63%	N/A	N/A
20 Years	76%	76%	78%	78%	N/A	N/A
30 Years	100%	100%	100%	100%	N/A	N/A
	Retiree Health Plan					
	CERS Non-Hazardous*		CERS Hazardous*		N/A	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected UAL (\$ in Millions)						
Baseline (Year 1)	\$503	\$559	\$275	\$308	N/A	N/A
5 Years	\$151	\$212	\$84	\$125	N/A	N/A
10 Years	\$220	\$271	\$104	\$137	N/A	N/A
20 Years	\$526	\$534	\$196	\$201	N/A	N/A
30 Years	\$0	\$0	\$0	\$0	N/A	N/A
Projected Funding Ratio (%)						
Baseline (Year 1)	85%	84%	84%	83%	N/A	N/A
5 Years	96%	95%	96%	94%	N/A	N/A
10 Years	95%	94%	95%	93%	N/A	N/A
20 Years	90%	90%	90%	91%	N/A	N/A
30 Years	100%	100%	100%	100%	N/A	N/A

* if necessary or plan administers more than one plan/system.

Section III: Brief Summary of Bill

The proposed legislation provides an increase in the insurance dollar contribution for members hired on or after July 1, 2003 equal to:

- (1) \$5 for every year of hazardous service a member attains over 20 years for Tier 1 members; or
- (2) \$5 for every year of hazardous service a member attains over 25 years for Tier 2 and Tier 3 members; or
- (3) \$5 for every year of service a member attains over 27 years for non-hazardous members.

This increase in the insurance dollar contribution does not increase by 1.5% annually and is only payable for pre-Medicare retirees. Additionally, it is only payable when the member's applicable insurance fund is at least 90% funded. The increase is effective January 1, 2023.

Additionally, the proposed insurance changes would allow members receiving the insurance dollar contribution to participate in a medical insurance reimbursement plan that would provide the reimbursement of premiums for health plans other than those administered by KPPA.

Section IV: Statement of Assumptions and Methods

Did the analysis rely solely upon the same assumptions & methods previously established and utilized by the actuary in the retirement system's most recent actuarial valuation?

☐ YES ☒ NO

If NO, please describe each new assumption or method utilized, the basis for selecting the revised assumption or method, and whether each new assumption or method increased or decreased projected employer costs:

To model the financial impact of the requirement for the funds to be 90% funded before the retirees receive the increase in the insurance dollar contribution, we are assuming the increase in the insurance dollar contribution is payable immediately for the CERS Non-Hazardous and Hazardous insurance funds. These funds are approaching 90% funded as of the June 30, 2021 Actuarial Valuation and it is likely they could be 90% funded within a year or two given the inherent volatility in the valuation of OPEB plans.

In general, allowing members to receive reimbursement to participate in health plans other than those administered by KPPA would increase the utilization of the dollar benefit. The current election assumption for future members receiving the dollar insurance benefit is 100%, so there is no immediate increase in the normal cost or liability of active members in CERS due to this aspect of the provision changes. In a future year, if a member does not elect insurance coverage at retirement, the fund would experience a liability gain. However, if future participation is increased due to this change, there would be fewer gains in future years, which could increase future employer costs. On the other hand, we have reviewed current retirees and beneficiaries who are eligible for the dollar insurance benefit but did not elect insurance coverage. The enclosed analysis assumes 50% of retirees and beneficiaries eligible would elect coverage due to the proposed changes.

The proposed legislation will provide increased retiree insurance benefits to applicable retirees. However, we do not believe the change in insurance benefits will materially change the anticipated retirement pattern for these employee groups. Therefore, we continue to use the same retirement assumptions as were used in the 2021 actuarial valuation, which will result in no impact to the pension funds.

Section V: Comment from Actuary

N/A

Section VI: Detailed Actuarial Analysis and Projections *(May be attached as Appendix)*

Please see attached.

Actuarial Analysis Summary

BR or Bill Ref. SB209 (22 RS SB 209/HCS 1)

Date: 3/9/2022

Actuary: GRS

Actuarial Analysis Conducted For:

☒ KERS NH ☒ KERS Haz ☒ SPRS ☐ TRS

☐ CERS NH ☐ CERS Haz ☐ LRP ☐ JRP

Section I: Executive Summary

In the opinion of the actuary, this bill would make the affected state-administered retirement system(s) actuarially:

☐ MORE SOUND ☐ LESS SOUND ☒ NO IMPACT

If actuarially MORE SOUND OR LESS SOUND, please summarize the factors leading to the actuary's opinion:

The actuarially determined contribution rates increase by 0.81% of pay and 1.55% of pay for the KERS Hazardous and SPRS funds, respectively, for FYE 2023. The required contribution rate for the KERS Hazardous insurance fund after incorporating the proposed legislation is still less than 0% of pay so no contributions continue to be required for the KERS Hazardous insurance fund. The normal cost rate increases by 0.08% of pay and the amortization cost increases by \$1.5 million for the KERS Non-Hazardous fund for FYE 2023. As long as employer contribution rates are increased for the KERS Non-Hazardous and SPRS funds accordingly, we do not believe this benefit change will impact the current actuarial soundness of the funds.

Does this bill increase or decrease employer costs? ☒ INCREASE ☐ DECREASE ☐ NO IMPACT

Does this bill increase or decrease benefits? ☒ INCREASE ☐ DECREASE ☐ NO IMPACT

Does this bill increase or decrease benefit participation? ☒ INCREASE ☐ DECREASE ☐ NO IMPACT

If the bill impacts employer costs, benefits, or benefit participation, please explain and estimate the impact in Sections II and VI.

Section II: Financial Projections

	Combined Pension and Retiree Health Plan					
	KERS Non-Hazardous*		KERS Hazardous*		SPRS*	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected Employer Cost* (\$ in Millions)						
30-Yr Nominal \$	\$30,345	\$30,440	\$1,212	\$1,212	\$1,572	\$1,584
30-Yr Net Present Value \$	\$15,961	\$16,003	\$586	\$586	\$836	\$843
Proj. Normal Cost for New Hire	3.93% of pay	4.12% of pay	6.87% of pay	7.24% of pay	9.96% of pay	10.65% of pay

*Projected costs are for all employers and all fund sources for entire 30-year period.

Proj. normal cost is the normal cost for new hires after subtracting employee contributions

	Pension Plan					
	KERS Non-Hazardous*		KERS Hazardous*		SPRS*	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected UAL (\$ in Millions)						
Baseline (Year 1)	\$13,585	\$13,585	\$513	\$513	\$730	\$730
5 Years	\$12,300	\$12,300	\$377	\$377	\$638	\$638
10 Years	\$10,863	\$10,863	\$339	\$339	\$561	\$561
20 Years	\$6,649	\$6,649	\$242	\$242	\$344	\$344
30 Years	\$0	\$0	\$0	\$0	\$0	\$0
Projected Funding Ratio (%)						
Baseline (Year 1)	17%	17%	60%	60%	31%	31%
5 Years	24%	24%	73%	73%	39%	39%
10 Years	30%	30%	78%	78%	45%	45%
20 Years	50%	50%	86%	86%	63%	63%
30 Years	100%	100%	100%	100%	100%	100%
	Retiree Health Plan					
	KERS Non-Hazardous*		KERS Hazardous*		SPRS*	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected UAL (\$ in Millions)						
Baseline (Year 1)	\$1,283	\$1,299	\$(151)	\$(143)	\$49	\$53
5 Years	\$1,062	\$1,077	\$(241)	\$(229)	\$15	\$20
10 Years	\$996	\$1,008	\$(303)	\$(284)	\$17	\$19
20 Years	\$811	\$812	\$(512)	\$(466)	\$26	\$27
30 Years	\$0	\$0	\$(898)	\$(803)	\$0	\$0
Projected Funding Ratio (%)						
Baseline (Year 1)	50%	50%	136%	133%	82%	81%
5 Years	62%	62%	152%	148%	95%	93%
10 Years	66%	66%	163%	156%	94%	94%
20 Years	71%	72%	199%	183%	90%	90%
30 Years	100%	100%	255%	224%	100%	100%

* if necessary or plan administers more than one plan/system.

Section III: Brief Summary of Bill

The proposed legislation provides an increase in the insurance dollar contribution for members hired on or after July 1, 2003 equal to:

- (1) \$5 for every year of hazardous service a member attains over 20 years for Tier 1 members; or
- (2) \$5 for every year of hazardous service a member attains over 25 years for Tier 2 and Tier 3 members; or
- (3) \$5 for every year of service a member attains over 27 years for non-hazardous members.

This increase in the insurance dollar contribution does not increase by 1.5% annually and is only payable for pre-Medicare retirees. Additionally, it is only payable when the member's applicable insurance fund is at least 90% funded. The increase is effective January 1, 2023.

Additionally, the proposed insurance changes would allow members receiving the insurance dollar contribution to participate in a medical insurance reimbursement plan that would provide the reimbursement of premiums for health plans other than those administered by KPPA.

Section IV: Statement of Assumptions and Methods

Did the analysis rely solely upon the same assumptions & methods previously established and utilized by the actuary in the retirement system's most recent actuarial valuation?

☐ YES ☒ NO

If NO, please describe each new assumption or method utilized, the basis for selecting the revised assumption or method, and whether each new assumption or method increased or decreased projected employer costs:

To model the financial impact of the requirement for the funds to be 90% funded before the retirees receive the increase in the insurance dollar contribution, we are assuming the increase in the insurance dollar contribution is payable immediately for the KERS Hazardous and SPRS insurance funds. These funds are either at or approaching 90% funded as of the June 30, 2021 Actuarial Valuation. For the SPRS fund that is not yet 90% funded as of June 30, 2021, it is likely it could be 90% funded within a year or two given the inherent volatility in the valuation of OPEB plans. The KERS non-hazardous insurance fund, however, is 50% funded as of June 30, 2021 and is not expected to be 90% funded in the near future. We have assumed the increases proposed in the insurance dollar contribution begin in the year 2047, which is our best estimate of when the fund will begin approaching 90% funded.

In general, allowing members to receive reimbursement to participate in health plans other than those administered by KPPA would increase the utilization of the dollar benefit. The current election assumption for future members receiving the dollar insurance benefit is 100%, so there is no immediate increase in the normal cost or liability of active members in KERS or SPRS due to this aspect of the provision changes. In a future year, if a member does not elect insurance coverage at retirement, the fund would experience a liability gain. However, if future participation is increased due to this change, there would be fewer gains in future years, which could increase future employer costs. On the other hand, we have reviewed current retirees and beneficiaries who are eligible for the dollar insurance benefit but did not elect insurance coverage.

The enclosed analysis assumes 50% of retirees and beneficiaries eligible would elect coverage due to the proposed changes.

The proposed legislation will provide increased retiree insurance benefits to applicable retirees. However, we do not believe the change in insurance benefits will materially change the anticipated retirement pattern for these employee groups. Therefore, we continue to use the same retirement assumptions as were used in the 2021 actuarial valuation, which will result in no impact to the pension funds.

Section V: Comment from Actuary

N/A

Section VI: Detailed Actuarial Analysis and Projections *(May be attached as Appendix)*

Please see attached.



March 9, 2022

Mr. David Eager
Executive Director
Kentucky Public Pensions Authority
1260 Louisville Road
Frankfort, KY 40601

**Re: Actuarial Analysis of Proposed Legislation SB 209 and its Financial Impact
on the Systems Operated by the Kentucky Public Pensions Authority**

Dear Mr. Eager:

We have reviewed the proposed legislation SB 209 (22 RS SB 209/HCS 1) and the purpose of this letter is to communicate the financial impact of the proposed legislation in regards to the County Employees Retirement Systems (CERS), Kentucky Employees Retirement System (KERS), and State Police Retirement System (SPRS) insurance funds.

Summary of Provisions of Proposed Legislation and Cost Impact

The proposed legislation provides an increase in the insurance dollar contribution for members hired on or after July 1, 2003 equal to:

- (1) \$5 for every year of hazardous service a member attains over 20 years for Tier 1 members; or
- (2) \$5 for every year of hazardous service a member attains over 25 years for Tier 2 and Tier 3 members; or
- (3) \$5 for every year of service a member attains over 27 years for non-hazardous members.

This increase in the insurance dollar contribution does not increase by 1.5% annually and is only payable for pre-Medicare retirees. Additionally, it is only payable when the member's applicable insurance fund is at least 90% funded. The increase is effective January 1, 2023.

Additionally, the proposed insurance changes would allow members receiving the insurance dollar contribution to participate in a medical insurance reimbursement plan that would provide the reimbursement of premiums for health plans other than those administered by KPPA. The impact of the proposed insurance provision changes on the employer contribution requirements are provided in a table on the following page.

Impact on the FYE 2023 Actuarially Determined Employer Contribution (Pension and Insurance)

Plan	Current based on June 30, 2021 Valuation ¹	Proposed Insurance Provision Changes	Impact on FYE 2023 Contribution	Increase in Annual Contribution	Increase attributable to Reimbursement of non-KPPA Health Plans
CERS Non-Hazardous	26.79%	27.13%	0.34%	\$8,770,000	\$1,290,000
CERS Hazardous	49.59%	50.52% ²	0.93% ²	\$5,487,000 ²	\$236,000 ²
KERS Non-Hazardous	9.97% \$994,422,000	10.05% \$995,940,000	0.08% \$1,518,000	\$2,598,000	\$540,000
KERS Hazardous	31.82%	31.82%	0.00% ³	\$ 0 ³	\$ 0 ³
SPRS	140.51%	142.06%	1.55%	\$ 703,000	\$ 41,000

¹ Actuarially determined contribution amounts shown for the KERS Non-Hazardous fund included the normal cost rate, payable as a percentage of payroll, and the amortization cost, which is allocated amongst employers as a dollar amount in accordance with current statutes.

² Actual contributions for the CERS Hazardous fund will be limited by the CERS phase-in provisions (49.65% of pay, or a \$350,000 increase over the current plan, for FYE2023).

³ The proposed legislation increases the actuarially determined contribution for the KERS Hazardous insurance fund by 0.81% of pay for FYE 2023; however, the actuarially determined contribution is still less than 0% of pay so the net impact is 0% of pay.

Sections 1., 2., and 3. provide 30-year projections of the liability and contribution requirements of the pension and insurance funds under the current and proposed provisions, as well as a summary of the fiscal impact of the proposed legislation.

Additional Comments Regarding the Proposed Legislation

To model the financial impact of the requirement for the funds to be 90% funded before the retirees receive the increase in the insurance dollar contribution, we are assuming the increase in the insurance dollar contribution is payable immediately for the KERS Hazardous, CERS, and SPRS insurance funds. These funds are either at or approaching 90% funded as of the June 30, 2021 Actuarial Valuation. For those funds not yet 90% funded as of June 30, 2021, it is likely they could be 90% funded within a year or two given the inherent volatility in the valuation of OPEB plans. The KERS non-hazardous insurance fund, however, is 50% funded as of June 30, 2021 and is not expected to be 90% funded in the near future. We have assumed the increases proposed in the insurance dollar contribution begin in the year 2047, which is our best estimate of when the fund will begin approaching 90% funded.



In general, allowing members to receive reimbursement to participate in health plans other than those administered by KPPA would increase the utilization of the dollar benefit. The current election assumption for future members receiving the dollar insurance benefit is 100%, so there is no immediate increase in the normal cost or liability of active members in KERS, CERS, or SPRS due to this aspect of the provision changes. In a future year, if a member does not elect insurance coverage at retirement, the fund would experience a liability gain. However, if future participation is increased due to this change, there would be fewer gains in future years, which could increase future employer costs. On the other hand, we have reviewed current retirees and beneficiaries who are eligible for the dollar insurance benefit but did not elect insurance coverage. The enclosed analysis assumes 50% of retirees and beneficiaries eligible would elect coverage due to the proposed changes.

The proposed legislation will provide increased retiree insurance benefits to applicable retirees. However, we do not believe the change in insurance benefits will materially change the anticipated retirement pattern for these employee groups. Therefore, we continue to use the same retirement assumptions as were used in the 2021 actuarial valuation, which will result in no impact to the pension funds.

Comments Regarding CERS Contribution Phase-In

Under current statutes, the CERS Hazardous fund is expected to receive the full actuarially determined employer contribution for FYE 2023 of 49.59% of pay, as it is less than the maximum rate allowed under the CERS phase-in provisions, or 49.65% of pay. Under the proposed legislation, the actuarially determined contribution rate would increase from 49.59% of pay to 50.52% of pay, which would be limited by the current phase-in provisions. Given that the phase-in provisions were designed to phase-in the assumption changes adopted by the Board, legislators may want to consider amending the phase-in provisions so that the increase associated with these proposed provision changes be immediately recognized in the employer contribution rate.

Basis of Calculations

GRS based the calculations and analysis in this letter on the member and financial data provided by KPPA for use in performing the actuarial valuation as of June 30, 2021. The projections assume no actuarial gains or losses will occur in the future, and that members will terminate, retire, become disabled, or die as anticipated by the actuarial assumptions used to perform the June 30, 2021 actuarial valuation. Our calculations are based upon assumptions regarding future events, which may or may not materialize. Depending on actual plan experience, actual results could deviate significantly from our projections.

We are not attorneys and we cannot provide a legal opinion regarding the changes in this proposed legislation. Nothing in this letter should be construed as providing legal, investment or tax advice.



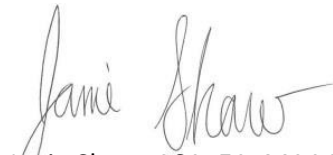
Both of the undersigned are Enrolled Actuaries, members of the American Academy of Actuaries, and meet all of the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein. In addition, both of the undersigned are experienced in performing valuations for large public retirement systems.

Sincerely,

Gabriel, Roeder, Smith & Company



Daniel J. White, FSA, EA, MAAA
Senior Consultant



Janie Shaw, ASA, EA, MAAA
Consultant

Actuarial Analysis of SB209
Section 1.
Comparison of Fiscal Impact
Current Plan vs. Proposed Changes

Kentucky Public Pensions Authority
Exhibit 1-6
CERS Non-Hazardous Retirement Fund
Actuarial Analysis of SB209
Comparison of Current Plan and Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions			Employer Contribution Rate		
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2021	\$ 7,179	\$ 7,179	\$ -	52%	52%	0%	\$ 576	\$ 576	\$ -	22.8%	22.8%	0.0%
2022	6,932	6,932	-	55%	55%	0%	604	604	-	23.4%	23.4%	0.0%
2023	6,682	6,682	-	57%	57%	0%	585	585	-	22.3%	22.3%	0.0%
2024	6,435	6,435	-	59%	59%	0%	572	572	-	21.3%	21.3%	0.0%
2025	6,118	6,118	-	62%	62%	0%	560	560	-	20.5%	20.5%	0.0%
2026	6,075	6,075	-	63%	63%	0%	542	542	-	19.4%	19.4%	0.0%
2027	6,044	6,044	-	64%	64%	0%	547	547	-	19.2%	19.2%	0.0%
2028	6,004	6,004	-	64%	64%	0%	553	553	-	19.0%	19.0%	0.0%
2029	5,954	5,954	-	65%	65%	0%	559	559	-	18.9%	18.9%	0.0%
2030	5,894	5,894	-	66%	66%	0%	565	565	-	18.7%	18.7%	0.0%
2031	5,821	5,821	-	67%	67%	0%	572	572	-	18.6%	18.6%	0.0%
2032	5,737	5,737	-	67%	67%	0%	579	579	-	18.4%	18.4%	0.0%
2033	5,638	5,638	-	68%	68%	0%	588	588	-	18.3%	18.3%	0.0%
2034	5,526	5,526	-	69%	69%	0%	596	596	-	18.2%	18.2%	0.0%
2035	5,397	5,397	-	70%	70%	0%	605	605	-	18.1%	18.1%	0.0%
2036	5,251	5,251	-	71%	71%	0%	614	614	-	18.1%	18.1%	0.0%
2037	5,088	5,088	-	72%	72%	0%	625	625	-	18.0%	18.0%	0.0%
2038	4,904	4,904	-	73%	73%	0%	635	635	-	17.9%	17.9%	0.0%
2039	4,700	4,700	-	75%	75%	0%	646	646	-	17.9%	17.9%	0.0%
2040	4,472	4,472	-	76%	76%	0%	650	650	-	17.6%	17.6%	0.0%
2041	4,229	4,229	-	78%	78%	0%	697	697	-	18.5%	18.5%	0.0%
2042	3,924	3,924	-	79%	79%	0%	742	742	-	19.4%	19.4%	0.0%
2043	3,555	3,555	-	82%	82%	0%	783	783	-	20.0%	20.0%	0.0%
2044	3,124	3,124	-	84%	84%	0%	824	824	-	20.7%	20.7%	0.0%
2045	2,624	2,624	-	87%	87%	0%	873	873	-	21.5%	21.5%	0.0%
2046	2,046	2,046	-	90%	90%	0%	891	891	-	21.5%	21.5%	0.0%
2047	1,416	1,416	-	93%	93%	0%	909	909	-	21.5%	21.5%	0.0%
2048	730	730	-	96%	96%	0%	926	926	-	21.5%	21.5%	0.0%
2049	-	-	-	100%	100%	0%	160	160	-	3.6%	3.6%	0.0%
2050	-	-	-	100%	100%	0%	163	163	-	3.6%	3.6%	0.0%

Kentucky Public Pensions Authority
Exhibit 1-7
CERS Hazardous Retirement Fund
Actuarial Analysis of SB209
Comparison of Current Plan and Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions			Employer Contribution Rate		
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2021	\$ 3,000	\$ 3,000	\$ -	47%	47%	0%	\$ 206	\$ 206	\$ -	35.6%	35.6%	0.0%
2022	2,950	2,950	-	49%	49%	0%	253	253	-	42.8%	42.8%	0.0%
2023	2,862	2,862	-	52%	52%	0%	247	247	-	41.0%	41.0%	0.0%
2024	2,775	2,775	-	54%	54%	0%	243	243	-	39.6%	39.6%	0.0%
2025	2,662	2,662	-	57%	57%	0%	240	240	-	38.3%	38.3%	0.0%
2026	2,639	2,639	-	58%	58%	0%	234	234	-	36.7%	36.7%	0.0%
2027	2,619	2,619	-	59%	59%	0%	237	237	-	36.3%	36.3%	0.0%
2028	2,597	2,597	-	60%	60%	0%	239	239	-	36.0%	36.0%	0.0%
2029	2,568	2,568	-	62%	62%	0%	242	242	-	35.7%	35.7%	0.0%
2030	2,535	2,535	-	63%	63%	0%	245	245	-	35.4%	35.4%	0.0%
2031	2,495	2,495	-	64%	64%	0%	248	248	-	35.2%	35.2%	0.0%
2032	2,450	2,450	-	65%	65%	0%	252	252	-	35.0%	35.0%	0.0%
2033	2,398	2,398	-	66%	66%	0%	256	256	-	34.9%	34.9%	0.0%
2034	2,339	2,339	-	68%	68%	0%	260	260	-	34.7%	34.7%	0.0%
2035	2,272	2,272	-	69%	69%	0%	264	264	-	34.6%	34.6%	0.0%
2036	2,197	2,197	-	71%	71%	0%	268	268	-	34.5%	34.5%	0.0%
2037	2,113	2,113	-	72%	72%	0%	272	272	-	34.3%	34.3%	0.0%
2038	2,020	2,020	-	74%	74%	0%	277	277	-	34.2%	34.2%	0.0%
2039	1,915	1,915	-	76%	76%	0%	281	281	-	34.0%	34.0%	0.0%
2040	1,800	1,800	-	78%	78%	0%	272	272	-	32.3%	32.3%	0.0%
2041	1,686	1,686	-	79%	79%	0%	279	279	-	32.4%	32.4%	0.0%
2042	1,560	1,560	-	81%	81%	0%	294	294	-	33.6%	33.6%	0.0%
2043	1,409	1,409	-	83%	83%	0%	309	309	-	34.5%	34.5%	0.0%
2044	1,234	1,234	-	86%	86%	0%	323	323	-	35.5%	35.5%	0.0%
2045	1,036	1,036	-	88%	88%	0%	341	341	-	36.7%	36.7%	0.0%
2046	806	806	-	91%	91%	0%	348	348	-	36.7%	36.7%	0.0%
2047	558	558	-	94%	94%	0%	355	355	-	36.7%	36.7%	0.0%
2048	287	287	-	97%	97%	0%	362	362	-	36.7%	36.7%	0.0%
2049	-	-	-	100%	100%	0%	59	59	-	5.9%	5.9%	0.0%
2050	-	-	-	100%	100%	0%	61	61	-	5.9%	5.9%	0.0%

Kentucky Public Pensions Authority
Exhibit 1-8
KERS Non-Hazardous Retirement Fund
Actuarial Analysis of SB209
Comparison of Current Plan and Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions (incl Normal Cost)			Amortization Cost		
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2021	\$ 13,585	\$ 13,585	\$ -	17%	17%	0%	\$ 1,027	\$ 1,027	\$ -	\$ 920	\$ 920	\$ -
2022	13,266	13,266	-	19%	19%	0%	1,012	1,012	-	906	906	-
2023	12,956	12,956	-	21%	21%	0%	1,012	1,012	-	906	906	-
2024	12,634	12,634	-	22%	22%	0%	991	991	-	893	893	-
2025	12,300	12,300	-	24%	24%	0%	991	991	-	893	893	-
2026	12,030	12,030	-	25%	25%	0%	971	971	-	879	879	-
2027	11,760	11,760	-	26%	26%	0%	971	971	-	879	879	-
2028	11,476	11,476	-	28%	28%	0%	965	965	-	879	879	-
2029	11,178	11,178	-	29%	29%	0%	965	965	-	879	879	-
2030	10,863	10,863	-	30%	30%	0%	959	959	-	879	879	-
2031	10,532	10,532	-	31%	31%	0%	959	959	-	879	879	-
2032	10,183	10,183	-	33%	33%	0%	954	954	-	879	879	-
2033	9,816	9,816	-	34%	34%	0%	954	954	-	879	879	-
2034	9,431	9,431	-	36%	36%	0%	950	950	-	879	879	-
2035	9,025	9,025	-	38%	38%	0%	950	950	-	879	879	-
2036	8,596	8,596	-	40%	40%	0%	947	947	-	879	879	-
2037	8,146	8,146	-	42%	42%	0%	947	947	-	879	879	-
2038	7,673	7,673	-	44%	44%	0%	944	944	-	879	879	-
2039	7,175	7,175	-	47%	47%	0%	944	944	-	879	879	-
2040	6,649	6,649	-	50%	50%	0%	945	945	-	881	881	-
2041	6,095	6,095	-	53%	53%	0%	975	975	-	911	911	-
2042	5,480	5,480	-	57%	57%	0%	980	980	-	917	917	-
2043	4,826	4,826	-	62%	62%	0%	987	987	-	924	924	-
2044	4,132	4,132	-	67%	67%	0%	992	992	-	931	931	-
2045	3,394	3,394	-	72%	72%	0%	999	999	-	938	938	-
2046	2,610	2,610	-	78%	78%	0%	998	998	-	938	938	-
2047	1,784	1,784	-	85%	85%	0%	998	998	-	938	938	-
2048	914	914	-	92%	92%	0%	997	997	-	938	938	-
2049	-	-	-	100%	100%	0%	59	59	-	-	-	-
2050	-	-	-	100%	100%	0%	59	59	-	-	-	-

Kentucky Public Pensions Authority
Exhibit 1-9
KERS Hazardous Retirement Fund
Actuarial Analysis of SB209
Comparison of Current Plan and Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions			Employer Contribution Rate		
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2021	\$ 513	\$ 513	\$ -	60%	60%	0%	\$ 54	\$ 54	\$ -	33.4%	33.4%	0.0%
2022	477	477	-	64%	64%	0%	52	52	-	31.8%	31.8%	0.0%
2023	446	446	-	67%	67%	0%	52	52	-	31.8%	31.8%	0.0%
2024	412	412	-	70%	70%	0%	46	46	-	28.2%	28.2%	0.0%
2025	377	377	-	73%	73%	0%	46	46	-	28.2%	28.2%	0.0%
2026	366	366	-	74%	74%	0%	40	40	-	24.7%	24.7%	0.0%
2027	360	360	-	75%	75%	0%	40	40	-	24.7%	24.7%	0.0%
2028	353	353	-	76%	76%	0%	39	39	-	24.2%	24.2%	0.0%
2029	346	346	-	77%	77%	0%	39	39	-	24.2%	24.2%	0.0%
2030	339	339	-	78%	78%	0%	39	39	-	23.8%	23.8%	0.0%
2031	332	332	-	78%	78%	0%	39	39	-	23.8%	23.8%	0.0%
2032	323	323	-	79%	79%	0%	38	38	-	23.6%	23.6%	0.0%
2033	316	316	-	80%	80%	0%	38	38	-	23.6%	23.6%	0.0%
2034	307	307	-	81%	81%	0%	38	38	-	23.5%	23.5%	0.0%
2035	297	297	-	82%	82%	0%	38	38	-	23.5%	23.5%	0.0%
2036	288	288	-	82%	82%	0%	38	38	-	23.3%	23.3%	0.0%
2037	277	277	-	83%	83%	0%	38	38	-	23.3%	23.3%	0.0%
2038	266	266	-	84%	84%	0%	38	38	-	23.1%	23.1%	0.0%
2039	254	254	-	85%	85%	0%	38	38	-	23.1%	23.1%	0.0%
2040	242	242	-	86%	86%	0%	36	36	-	21.9%	21.9%	0.0%
2041	230	230	-	87%	87%	0%	36	36	-	21.9%	21.9%	0.0%
2042	218	218	-	88%	88%	0%	43	43	-	26.3%	26.3%	0.0%
2043	198	198	-	89%	89%	0%	43	43	-	26.3%	26.3%	0.0%
2044	176	176	-	90%	90%	0%	47	47	-	29.1%	29.1%	0.0%
2045	148	148	-	92%	92%	0%	47	47	-	29.1%	29.1%	0.0%
2046	118	118	-	94%	94%	0%	50	50	-	31.0%	31.0%	0.0%
2047	84	84	-	96%	96%	0%	50	50	-	31.0%	31.0%	0.0%
2048	47	47	-	98%	98%	0%	50	50	-	31.0%	31.0%	0.0%
2049	-	-	-	100%	100%	0%	10	10	-	6.3%	6.3%	0.0%
2050	-	-	-	100%	100%	0%	10	10	-	6.3%	6.3%	0.0%

Kentucky Public Pensions Authority
Exhibit 1-10
SPRS Retirement Fund
Actuarial Analysis of SB209
Comparison of Current Plan and Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions			Employer Contribution Rate		
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2021	\$ 730	\$ 730	-	31%	31%	0%	\$ 58	\$ 58	-	128.0%	128.0%	0.0%
2022	707	707	-	33%	33%	0%	57	57	-	126.4%	126.4%	0.0%
2023	684	684	-	35%	35%	0%	57	57	-	126.4%	126.4%	0.0%
2024	662	662	-	37%	37%	0%	55	55	-	120.7%	120.7%	0.0%
2025	638	638	-	39%	39%	0%	55	55	-	120.7%	120.7%	0.0%
2026	622	622	-	41%	41%	0%	52	52	-	115.4%	115.4%	0.0%
2027	608	608	-	42%	42%	0%	52	52	-	115.4%	115.4%	0.0%
2028	593	593	-	43%	43%	0%	52	52	-	113.9%	113.9%	0.0%
2029	578	578	-	44%	44%	0%	52	52	-	113.9%	113.9%	0.0%
2030	561	561	-	45%	45%	0%	51	51	-	112.6%	112.6%	0.0%
2031	544	544	-	46%	46%	0%	51	51	-	112.6%	112.6%	0.0%
2032	526	526	-	47%	47%	0%	51	51	-	111.8%	111.8%	0.0%
2033	507	507	-	49%	49%	0%	51	51	-	111.8%	111.8%	0.0%
2034	487	487	-	50%	50%	0%	50	50	-	111.2%	111.2%	0.0%
2035	466	466	-	52%	52%	0%	50	50	-	111.2%	111.2%	0.0%
2036	444	444	-	54%	54%	0%	50	50	-	110.5%	110.5%	0.0%
2037	421	421	-	56%	56%	0%	50	50	-	110.5%	110.5%	0.0%
2038	397	397	-	58%	58%	0%	50	50	-	109.7%	109.7%	0.0%
2039	371	371	-	60%	60%	0%	50	50	-	109.7%	109.7%	0.0%
2040	344	344	-	63%	63%	0%	49	49	-	107.8%	107.8%	0.0%
2041	316	316	-	65%	65%	0%	49	49	-	107.8%	107.8%	0.0%
2042	287	287	-	68%	68%	0%	51	51	-	112.5%	112.5%	0.0%
2043	253	253	-	71%	71%	0%	51	51	-	112.5%	112.5%	0.0%
2044	219	219	-	75%	75%	0%	52	52	-	115.8%	115.8%	0.0%
2045	179	179	-	79%	79%	0%	52	52	-	115.8%	115.8%	0.0%
2046	140	140	-	83%	83%	0%	53	53	-	117.8%	117.8%	0.0%
2047	96	96	-	88%	88%	0%	53	53	-	117.8%	117.8%	0.0%
2048	50	50	-	94%	94%	0%	53	53	-	117.7%	117.7%	0.0%
2049	-	-	-	100%	100%	0%	4	4	-	7.8%	7.8%	0.0%
2050	-	-	-	100%	100%	0%	4	4	-	7.8%	7.8%	0.0%

Kentucky Public Pensions Authority
Exhibit 1-11
CERS Non-Hazardous Insurance Fund
Actuarial Analysis of SB209
Comparison of Current Plan and Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions			Employer Contribution Rate		
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2021	\$ 503	\$ 559	\$ 56	85%	84%	-1%	\$ 104	\$ 104	\$ -	4.2%	4.2%	0.0%
2022	399	462	63	89%	87%	-2%	86	95	9	3.4%	3.7%	0.3%
2023	321	384	63	91%	90%	-1%	76	85	9	2.9%	3.3%	0.4%
2024	248	310	62	94%	92%	-2%	68	77	9	2.6%	2.9%	0.3%
2025	151	212	61	96%	95%	-1%	59	69	10	2.2%	2.6%	0.4%
2026	156	215	59	96%	95%	-1%	48	59	11	1.8%	2.1%	0.3%
2027	170	227	57	96%	95%	-1%	46	57	11	1.6%	2.0%	0.4%
2028	185	241	56	96%	95%	-1%	42	54	12	1.5%	1.9%	0.4%
2029	201	255	54	96%	94%	-2%	40	52	12	1.4%	1.8%	0.4%
2030	220	271	51	95%	94%	-1%	37	49	12	1.2%	1.7%	0.5%
2031	241	289	48	95%	94%	-1%	35	48	13	1.1%	1.6%	0.5%
2032	263	308	45	94%	94%	0%	32	46	14	1.0%	1.5%	0.5%
2033	287	329	42	94%	93%	-1%	31	44	13	1.0%	1.4%	0.4%
2034	313	353	40	94%	93%	-1%	29	43	14	0.9%	1.3%	0.4%
2035	343	378	35	93%	93%	0%	28	43	15	0.9%	1.3%	0.4%
2036	374	404	30	92%	92%	0%	27	42	15	0.8%	1.2%	0.4%
2037	408	434	26	92%	92%	0%	26	42	16	0.8%	1.2%	0.4%
2038	445	464	19	91%	91%	0%	26	42	16	0.7%	1.2%	0.5%
2039	484	498	14	91%	91%	0%	25	41	16	0.7%	1.2%	0.5%
2040	526	534	8	90%	90%	0%	63	80	17	1.7%	2.2%	0.5%
2041	531	533	2	90%	91%	1%	90	100	10	2.4%	2.7%	0.3%
2042	510	511	1	91%	91%	0%	102	113	11	2.7%	3.0%	0.3%
2043	475	476	1	91%	92%	1%	114	124	10	2.9%	3.2%	0.3%
2044	426	426	-	92%	93%	1%	124	135	11	3.2%	3.4%	0.2%
2045	363	364	1	94%	94%	0%	138	149	11	3.4%	3.7%	0.3%
2046	281	282	1	95%	96%	1%	141	152	11	3.4%	3.7%	0.3%
2047	192	194	2	97%	97%	0%	144	155	11	3.4%	3.7%	0.3%
2048	96	96	-	98%	99%	1%	146	157	11	3.4%	3.7%	0.3%
2049	-	-	-	100%	100%	0%	37	48	11	0.8%	1.1%	0.3%
2050	-	-	-	100%	100%	0%	37	48	11	0.8%	1.1%	0.3%

Kentucky Public Pensions Authority
Exhibit 1-12
CERS Hazardous Insurance Fund
Actuarial Analysis of SB209
Comparison of Current Plan and Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions			Employer Contribution Rate		
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2021	\$ 275	\$ 308	\$ 33	84%	83%	-1%	\$ 50	\$ 50	\$ -	8.7%	8.7%	0.0%
2022	219	256	37	88%	86%	-2%	40	40	-	6.8%	6.8%	0.0%
2023	176	219	43	90%	88%	-2%	34	40	6	5.6%	6.7%	1.1%
2024	137	179	42	93%	91%	-2%	29	35	6	4.7%	5.7%	1.0%
2025	84	125	41	96%	94%	-2%	24	31	7	3.9%	4.9%	1.0%
2026	83	123	40	96%	94%	-2%	19	25	6	2.9%	4.0%	1.1%
2027	88	127	39	95%	94%	-1%	17	24	7	2.7%	3.7%	1.0%
2028	93	129	36	95%	94%	-1%	16	23	7	2.5%	3.5%	1.0%
2029	97	134	37	95%	94%	-1%	16	22	6	2.3%	3.3%	1.0%
2030	104	137	33	95%	93%	-2%	15	22	7	2.2%	3.2%	1.0%
2031	110	142	32	94%	93%	-1%	15	22	7	2.1%	3.1%	1.0%
2032	117	147	30	94%	93%	-1%	14	21	7	2.0%	3.0%	1.0%
2033	125	152	27	94%	93%	-1%	14	21	7	1.9%	2.9%	1.0%
2034	133	158	25	93%	93%	0%	14	21	7	1.9%	2.9%	1.0%
2035	141	164	23	93%	92%	-1%	14	21	7	1.9%	2.8%	0.9%
2036	151	171	20	92%	92%	0%	14	22	8	1.8%	2.8%	1.0%
2037	161	177	16	92%	92%	0%	14	22	8	1.8%	2.8%	1.0%
2038	172	185	13	91%	92%	1%	14	22	8	1.8%	2.8%	1.0%
2039	184	193	9	91%	91%	0%	14	22	8	1.8%	2.7%	0.9%
2040	196	201	5	90%	91%	1%	20	28	8	2.4%	3.3%	0.9%
2041	204	204	-	90%	91%	1%	32	36	4	3.8%	4.3%	0.5%
2042	200	199	(1)	90%	91%	1%	39	42	3	4.5%	4.9%	0.4%
2043	188	188	-	91%	92%	1%	44	48	4	5.0%	5.4%	0.4%
2044	171	171	-	92%	93%	1%	49	53	4	5.5%	5.9%	0.4%
2045	148	146	(2)	93%	94%	1%	57	60	3	6.1%	6.5%	0.4%
2046	114	114	-	95%	95%	0%	58	61	3	6.1%	6.5%	0.4%
2047	79	78	(1)	97%	97%	0%	59	62	3	6.1%	6.5%	0.4%
2048	40	39	(1)	98%	99%	1%	60	63	3	6.1%	6.5%	0.4%
2049	-	-	-	100%	100%	0%	16	20	4	1.6%	2.0%	0.4%
2050	-	-	-	100%	100%	0%	16	20	4	1.6%	2.0%	0.4%

Kentucky Public Pensions Authority
Exhibit 1-13
KERS Non-Hazardous Insurance Fund
Actuarial Analysis of SB209
Comparison of Current Plan and Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions (incl Normal Cost)			Amortization Cost		
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
2021	\$ 1,283	\$ 1,299	\$ 16	50%	50%	0%	\$ 132	\$ 132	\$ -	\$ 102	\$ 102	\$ -
2022	1,219	1,236	17	54%	54%	0%	117	120	3	88	90	2
2023	1,171	1,187	16	57%	57%	0%	117	120	3	88	90	2
2024	1,118	1,134	16	60%	59%	-1%	107	110	3	81	83	2
2025	1,062	1,077	15	62%	62%	0%	107	110	3	81	83	2
2026	1,044	1,058	14	64%	63%	-1%	96	99	3	74	75	1
2027	1,033	1,047	14	64%	64%	0%	96	99	3	74	75	1
2028	1,021	1,035	14	65%	65%	0%	93	96	3	74	75	1
2029	1,009	1,022	13	66%	66%	0%	93	96	3	74	75	1
2030	996	1,008	12	66%	66%	0%	89	93	4	74	75	1
2031	982	993	11	67%	67%	0%	89	93	4	74	75	1
2032	967	978	11	67%	67%	0%	87	90	3	74	75	1
2033	951	961	10	68%	68%	0%	87	90	3	74	75	1
2034	935	944	9	68%	68%	0%	85	88	3	74	75	1
2035	918	924	6	68%	69%	1%	85	88	3	74	75	1
2036	899	905	6	69%	69%	0%	83	87	4	74	75	1
2037	879	884	5	69%	70%	1%	83	87	4	74	75	1
2038	858	862	4	70%	70%	0%	82	86	4	74	75	1
2039	834	838	4	70%	71%	1%	82	86	4	74	75	1
2040	811	812	1	71%	72%	1%	103	108	5	96	98	2
2041	763	762	(1)	73%	74%	1%	118	121	3	111	111	-
2042	695	696	1	75%	76%	1%	121	124	3	115	115	-
2043	621	621	-	77%	78%	1%	125	128	3	118	118	-
2044	538	538	-	80%	81%	1%	128	131	3	121	121	-
2045	446	446	-	84%	84%	0%	132	135	3	126	126	-
2046	345	344	(1)	87%	88%	1%	132	135	3	126	126	-
2047	237	237	-	91%	92%	1%	132	135	3	126	126	-
2048	122	122	-	96%	96%	0%	131	134	3	126	126	-
2049	-	-	-	100%	100%	0%	6	9	3	-	-	-
2050	-	-	-	100%	100%	0%	5	8	3	-	-	-

Kentucky Public Pensions Authority
Exhibit 1-14
KERS Hazardous Insurance Fund
Actuarial Analysis of SB209
Comparison of Current Plan and Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions			Employer Contribution Rate						
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)			
2021	\$	(151)	\$	(143)	\$	8	136%	133%	-3%	\$	-	\$	-	0.0%	0.0%	0.0%
2022		(171)		(163)		8	139%	137%	-2%	-	-	-	-	0.0%	0.0%	0.0%
2023		(192)		(182)		10	143%	140%	-3%	-	-	-	-	0.0%	0.0%	0.0%
2024		(213)		(202)		11	147%	143%	-4%	-	-	-	-	0.0%	0.0%	0.0%
2025		(241)		(229)		12	152%	148%	-4%	-	-	-	-	0.0%	0.0%	0.0%
2026		(252)		(238)		14	154%	149%	-5%	-	-	-	-	0.0%	0.0%	0.0%
2027		(264)		(248)		16	156%	150%	-6%	-	-	-	-	0.0%	0.0%	0.0%
2028		(276)		(259)		17	158%	152%	-6%	-	-	-	-	0.0%	0.0%	0.0%
2029		(290)		(271)		19	160%	154%	-6%	-	-	-	-	0.0%	0.0%	0.0%
2030		(303)		(284)		19	163%	156%	-7%	-	-	-	-	0.0%	0.0%	0.0%
2031		(319)		(297)		22	166%	158%	-8%	-	-	-	-	0.0%	0.0%	0.0%
2032		(336)		(312)		24	169%	161%	-8%	-	-	-	-	0.0%	0.0%	0.0%
2033		(353)		(327)		26	172%	163%	-9%	-	-	-	-	0.0%	0.0%	0.0%
2034		(371)		(343)		28	175%	166%	-9%	-	-	-	-	0.0%	0.0%	0.0%
2035		(392)		(360)		32	179%	168%	-11%	-	-	-	-	0.0%	0.0%	0.0%
2036		(413)		(379)		34	183%	171%	-12%	-	-	-	-	0.0%	0.0%	0.0%
2037		(436)		(398)		38	187%	174%	-13%	-	-	-	-	0.0%	0.0%	0.0%
2038		(460)		(419)		41	191%	177%	-14%	-	-	-	-	0.0%	0.0%	0.0%
2039		(485)		(442)		43	195%	180%	-15%	-	-	-	-	0.0%	0.0%	0.0%
2040		(512)		(466)		46	199%	183%	-16%	-	-	-	-	0.0%	0.0%	0.0%
2041		(541)		(491)		50	204%	186%	-18%	-	-	-	-	0.0%	0.0%	0.0%
2042		(572)		(518)		54	209%	190%	-19%	-	-	-	-	0.0%	0.0%	0.0%
2043		(604)		(546)		58	213%	193%	-20%	-	-	-	-	0.0%	0.0%	0.0%
2044		(638)		(576)		62	218%	197%	-21%	-	-	-	-	0.0%	0.0%	0.0%
2045		(675)		(608)		67	223%	200%	-23%	-	-	-	-	0.0%	0.0%	0.0%
2046		(714)		(643)		71	229%	205%	-24%	-	-	-	-	0.0%	0.0%	0.0%
2047		(756)		(680)		76	235%	209%	-26%	-	-	-	-	0.0%	0.0%	0.0%
2048		(800)		(718)		82	241%	213%	-28%	-	-	-	-	0.0%	0.0%	0.0%
2049		(847)		(759)		88	248%	218%	-30%	-	-	-	-	0.0%	0.0%	0.0%
2050		(898)		(803)		95	255%	224%	-31%	-	-	-	-	0.0%	0.0%	0.0%

Kentucky Public Pensions Authority
Exhibit 1-15
SPRS Insurance Fund
Actuarial Analysis of SB209
Comparison of Current Plan and Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions			Employer Contribution Rate		
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2021	\$ 49	\$ 53	\$ 4	82%	81%	-1%	\$ 8	\$ 8	\$ -	18.1%	18.1%	0.0%
2022	40	43	3	86%	85%	-1%	6	7	1	14.1%	15.7%	1.6%
2023	32	36	4	89%	88%	-1%	6	7	1	14.1%	15.7%	1.6%
2024	24	28	4	92%	90%	-2%	4	5	1	9.4%	11.1%	1.7%
2025	15	20	5	95%	93%	-2%	4	5	1	9.4%	11.1%	1.7%
2026	14	18	4	95%	94%	-1%	2	3	1	5.2%	6.9%	1.7%
2027	15	18	3	95%	94%	-1%	2	3	1	5.2%	6.9%	1.7%
2028	15	18	3	95%	94%	-1%	2	3	1	4.4%	6.1%	1.7%
2029	16	19	3	94%	94%	0%	2	3	1	4.4%	6.1%	1.7%
2030	17	19	2	94%	94%	0%	2	3	1	3.9%	5.6%	1.7%
2031	17	20	3	94%	93%	-1%	2	3	1	3.9%	5.6%	1.7%
2032	17	21	4	94%	93%	-1%	2	2	-	3.6%	5.2%	1.6%
2033	19	21	2	93%	93%	0%	2	2	-	3.6%	5.2%	1.6%
2034	19	21	2	93%	93%	0%	2	2	-	3.5%	5.1%	1.6%
2035	20	22	2	92%	92%	0%	2	2	-	3.5%	5.1%	1.6%
2036	22	23	1	92%	92%	0%	2	2	-	3.4%	5.0%	1.6%
2037	23	24	1	91%	91%	0%	2	2	-	3.4%	5.0%	1.6%
2038	24	24	-	91%	91%	0%	2	2	-	3.3%	4.9%	1.6%
2039	25	26	1	90%	91%	1%	2	2	-	3.3%	4.9%	1.6%
2040	26	27	1	90%	90%	0%	2	3	1	4.6%	6.1%	1.5%
2041	27	28	1	89%	90%	1%	2	3	1	4.6%	6.1%	1.5%
2042	28	28	-	89%	90%	1%	5	5	-	10.4%	11.0%	0.6%
2043	26	26	-	89%	90%	1%	5	5	-	10.4%	11.0%	0.6%
2044	25	24	(1)	90%	91%	1%	6	6	-	13.4%	14.0%	0.6%
2045	22	21	(1)	91%	92%	1%	6	6	-	13.4%	14.0%	0.6%
2046	18	18	-	93%	93%	0%	7	7	-	15.5%	16.0%	0.5%
2047	13	13	-	95%	95%	0%	7	7	-	15.5%	16.0%	0.5%
2048	8	8	-	97%	97%	0%	7	7	-	15.5%	16.1%	0.6%
2049	-	-	-	100%	100%	0%	2	2	-	3.4%	3.9%	0.5%
2050	-	-	-	100%	100%	0%	2	2	-	3.4%	3.9%	0.5%

Actuarial Analysis of SB209

Section 2.

Projected Cost of the Retirement and Insurance Current Plan

Kentucky Public Pensions Authority
Exhibit 2-1
CERS Non-Hazardous Retirement Fund
Actuarial Analysis of SB209
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 14,895	\$ 7,716	\$ 7,179	52%	\$ 576	\$ 126	\$ 2,529	22.78%	23.88%
2022	15,240	8,308	6,932	55%	604	129	2,579	23.40%	23.40%
2023	15,563	8,881	6,682	57%	585	132	2,631	22.25%	22.25%
2024	15,867	9,432	6,435	59%	572	134	2,684	21.33%	21.33%
2025	16,152	10,034	6,118	62%	560	137	2,737	20.45%	20.45%
2026	16,415	10,340	6,075	63%	542	140	2,792	19.42%	19.42%
2027	16,656	10,612	6,044	64%	547	142	2,848	19.21%	19.21%
2028	16,875	10,871	6,004	64%	553	145	2,905	19.03%	19.03%
2029	17,073	11,119	5,954	65%	559	148	2,963	18.86%	18.86%
2030	17,253	11,359	5,894	66%	565	151	3,022	18.70%	18.70%
2031	17,416	11,595	5,821	67%	572	154	3,083	18.56%	18.56%
2032	17,575	11,838	5,737	67%	579	157	3,144	18.43%	18.43%
2033	17,722	12,084	5,638	68%	588	160	3,207	18.32%	18.32%
2034	17,859	12,333	5,526	69%	596	164	3,271	18.22%	18.22%
2035	17,988	12,591	5,397	70%	605	167	3,337	18.13%	18.13%
2036	18,112	12,861	5,251	71%	614	170	3,403	18.05%	18.05%
2037	18,236	13,148	5,088	72%	625	174	3,471	17.99%	17.99%
2038	18,365	13,461	4,904	73%	635	177	3,541	17.93%	17.93%
2039	18,502	13,802	4,700	75%	646	181	3,612	17.89%	17.89%
2040	18,651	14,179	4,472	76%	650	184	3,684	17.64%	17.64%
2041	18,815	14,586	4,229	78%	697	188	3,758	18.54%	18.54%
2042	18,995	15,071	3,924	79%	742	192	3,833	19.35%	19.35%
2043	19,193	15,638	3,555	82%	783	195	3,909	20.02%	20.02%
2044	19,411	16,287	3,124	84%	824	199	3,988	20.66%	20.66%
2045	19,649	17,025	2,624	87%	873	203	4,067	21.47%	21.47%
2046	19,910	17,864	2,046	90%	891	207	4,149	21.47%	21.47%
2047	20,194	18,778	1,416	93%	909	212	4,232	21.47%	21.47%
2048	20,501	19,771	730	96%	926	216	4,316	21.46%	21.46%
2049	20,834	20,834	-	100%	160	220	4,403	3.64%	3.64%
2050	21,193	21,193	-	100%	163	225	4,491	3.64%	3.64%

Notes and assumptions:

The projection is based on the results of the June 30, 2021 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.25%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to remain level throughout the entire projection.

Covered payroll is assumed to increase 2% each year throughout the entire projection.

The Board certified contribution rate paid by employers is assumed to be equal to the full actuarially determined contribution rate, except as allowed by

House Bill 362 (passed during the 2018 legislative session), which limits the certified contribution rate to a 12% increase over the prior year rate for the period of July 1, 2018 to June 30, 2028.

Kentucky Public Pensions Authority
Exhibit 2-2
CERS Hazardous Retirement Fund
Actuarial Analysis of SB209
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 5,629	\$ 2,629	\$ 3,000	47%	\$ 206	\$ 46	\$ 578	35.60%	43.23%
2022	5,784	2,834	2,950	49%	253	47	590	42.81%	42.81%
2023	5,929	3,067	2,862	52%	247	48	602	41.04%	41.04%
2024	6,067	3,292	2,775	54%	243	49	614	39.63%	39.63%
2025	6,199	3,537	2,662	57%	240	50	626	38.29%	38.29%
2026	6,324	3,685	2,639	58%	234	51	639	36.70%	36.70%
2027	6,444	3,825	2,619	59%	237	52	651	36.33%	36.33%
2028	6,560	3,963	2,597	60%	239	53	664	36.00%	36.00%
2029	6,671	4,103	2,568	62%	242	54	678	35.68%	35.68%
2030	6,782	4,247	2,535	63%	245	55	691	35.43%	35.43%
2031	6,893	4,398	2,495	64%	248	56	705	35.22%	35.22%
2032	7,008	4,558	2,450	65%	252	58	719	35.04%	35.04%
2033	7,125	4,727	2,398	66%	256	59	733	34.88%	34.88%
2034	7,247	4,908	2,339	68%	260	60	748	34.74%	34.74%
2035	7,371	5,099	2,272	69%	264	61	763	34.60%	34.60%
2036	7,499	5,302	2,197	71%	268	62	778	34.46%	34.46%
2037	7,628	5,515	2,113	72%	272	64	794	34.31%	34.31%
2038	7,757	5,737	2,020	74%	277	65	810	34.15%	34.15%
2039	7,883	5,968	1,915	76%	281	66	826	33.98%	33.98%
2040	8,009	6,209	1,800	78%	272	67	843	32.34%	32.34%
2041	8,134	6,448	1,686	79%	279	69	859	32.43%	32.43%
2042	8,261	6,701	1,560	81%	294	70	877	33.59%	33.59%
2043	8,390	6,981	1,409	83%	309	72	894	34.53%	34.53%
2044	8,522	7,288	1,234	86%	323	73	912	35.45%	35.45%
2045	8,657	7,621	1,036	88%	341	74	930	36.67%	36.67%
2046	8,792	7,986	806	91%	348	76	949	36.67%	36.67%
2047	8,931	8,373	558	94%	355	77	968	36.68%	36.68%
2048	9,072	8,785	287	97%	362	79	987	36.70%	36.70%
2049	9,215	9,215	-	100%	59	81	1,007	5.88%	5.88%
2050	9,361	9,361	-	100%	61	82	1,027	5.90%	5.90%

Notes and assumptions:

The projection is based on the results of the June 30, 2021 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.25%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to remain level throughout the entire projection.

Covered payroll is assumed to increase 2% each year throughout the entire projection.

The Board certified contribution rate paid by employers is assumed to be equal to the full actuarially determined contribution rate, except as allowed by

House Bill 362 (passed during the 2018 legislative session), which limits the certified contribution rate to a 12% increase over the prior year rate for the period of July 1, 2018 to June 30, 2028.

Kentucky Public Pensions Authority
Exhibit 2-3
KERS Non-Hazardous Retirement Fund
Actuarial Analysis of SB209
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll (Normal Cost)	Employer Contribution (Amortization Cost)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 16,321	\$ 2,736	\$ 13,585	17%	\$ 1,027	\$ 67	\$ 1,349	7.90%	\$ 920
2022	16,319	3,053	13,266	19%	1,012	67	1,349	7.82%	906
2023	16,293	3,337	12,956	21%	1,012	67	1,349	7.82%	906
2024	16,246	3,612	12,634	22%	991	67	1,349	7.29%	893
2025	16,178	3,878	12,300	24%	991	67	1,349	7.29%	893
2026	16,088	4,058	12,030	25%	971	67	1,349	6.82%	879
2027	15,978	4,218	11,760	26%	971	67	1,349	6.82%	879
2028	15,848	4,372	11,476	28%	965	67	1,349	6.38%	879
2029	15,698	4,520	11,178	29%	965	67	1,349	6.38%	879
2030	15,529	4,666	10,863	30%	959	67	1,349	5.97%	879
2031	15,344	4,812	10,532	31%	959	67	1,349	5.97%	879
2032	15,151	4,968	10,183	33%	954	67	1,349	5.62%	879
2033	14,944	5,128	9,816	34%	954	67	1,349	5.62%	879
2034	14,726	5,295	9,431	36%	950	67	1,349	5.31%	879
2035	14,497	5,472	9,025	38%	950	67	1,349	5.31%	879
2036	14,259	5,663	8,596	40%	947	67	1,349	5.05%	879
2037	14,017	5,871	8,146	42%	947	67	1,349	5.05%	879
2038	13,774	6,101	7,673	44%	944	67	1,349	4.86%	879
2039	13,533	6,358	7,175	47%	944	67	1,349	4.86%	879
2040	13,294	6,645	6,649	50%	945	67	1,349	4.72%	881
2041	13,061	6,966	6,095	53%	975	67	1,349	4.72%	911
2042	12,833	7,353	5,480	57%	980	67	1,349	4.62%	917
2043	12,610	7,784	4,826	62%	987	67	1,349	4.62%	924
2044	12,395	8,263	4,132	67%	992	67	1,349	4.52%	931
2045	12,187	8,793	3,394	72%	999	67	1,349	4.52%	938
2046	11,987	9,377	2,610	78%	998	67	1,349	4.45%	938
2047	11,795	10,011	1,784	85%	998	67	1,349	4.45%	938
2048	11,611	10,697	914	92%	997	67	1,349	4.38%	938
2049	11,438	11,438	-	100%	59	67	1,349	4.36%	-
2050	11,276	11,276	-	100%	59	67	1,349	4.34%	-

Notes and assumptions:

The projection is based on the results of the June 30, 2021 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 5.25%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to decrease 2% each year for each of the next 30 years.

Covered payroll is assumed to remain level throughout the entire projection.

The contribution rate established in the Commonwealth's biennium budget is assumed to be equal to the normal cost portion of the actuarially determined contribution.

The full actuarially determined amortization cost is assumed to be allocated amongst employers each biennium.

The second year of a biannual budget is assumed to take into account any expiring amortization bases.

Kentucky Public Pensions Authority
Exhibit 2-4
KERS Hazardous Retirement Fund
Actuarial Analysis of SB209
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 1,295	\$ 782	\$ 513	60%	\$ 54	\$ 13	\$ 163	33.43%	33.43%
2022	1,325	848	477	64%	52	13	163	31.82%	31.82%
2023	1,353	907	446	67%	52	13	163	31.82%	29.92%
2024	1,378	966	412	70%	46	13	163	28.18%	28.18%
2025	1,403	1,026	377	73%	46	13	163	28.18%	26.67%
2026	1,426	1,060	366	74%	40	13	163	24.68%	24.68%
2027	1,448	1,088	360	75%	40	13	163	24.68%	24.43%
2028	1,468	1,115	353	76%	39	13	163	24.16%	24.16%
2029	1,486	1,140	346	77%	39	13	163	24.16%	23.95%
2030	1,505	1,166	339	78%	39	13	163	23.79%	23.79%
2031	1,524	1,192	332	78%	39	13	163	23.79%	23.68%
2032	1,544	1,221	323	79%	38	13	163	23.58%	23.58%
2033	1,566	1,250	316	80%	38	13	163	23.58%	23.52%
2034	1,589	1,282	307	81%	38	13	163	23.45%	23.45%
2035	1,612	1,315	297	82%	38	13	163	23.45%	23.39%
2036	1,637	1,349	288	82%	38	13	163	23.31%	23.31%
2037	1,661	1,384	277	83%	38	13	163	23.31%	23.22%
2038	1,686	1,420	266	84%	38	13	163	23.11%	23.11%
2039	1,710	1,456	254	85%	38	13	163	23.11%	23.01%
2040	1,734	1,492	242	86%	36	13	163	21.86%	21.86%
2041	1,758	1,528	230	87%	36	13	163	21.86%	24.55%
2042	1,782	1,564	218	88%	43	13	163	26.28%	26.28%
2043	1,807	1,609	198	89%	43	13	163	26.28%	27.70%
2044	1,832	1,656	176	90%	47	13	163	29.07%	29.07%
2045	1,857	1,709	148	92%	47	13	163	29.07%	30.81%
2046	1,881	1,763	118	94%	50	13	163	30.97%	30.97%
2047	1,905	1,821	84	96%	50	13	163	30.97%	31.00%
2048	1,928	1,881	47	98%	50	13	163	31.01%	31.01%
2049	1,950	1,950	-	100%	10	13	163	6.29%	6.29%
2050	1,971	1,971	-	100%	10	13	163	6.29%	6.29%

Notes and assumptions:

The projection is based on the results of the June 30, 2021 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.25%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to decrease 2% each year for each of the next 30 years.

Covered payroll is assumed to remain level throughout the entire projection.

The contribution rate established in the Commonwealth's biennium budget is assumed to be equal to the full actuarially determined contribution rate.

Kentucky Public Pensions Authority
Exhibit 2-5
SPRS Retirement Fund
Actuarial Analysis of SB209
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 1,053	\$ 323	\$ 730	31%	\$ 58	\$ 4	\$ 45	127.99%	127.99%
2022	1,055	348	707	33%	57	4	45	126.40%	126.40%
2023	1,055	371	684	35%	57	4	45	126.40%	123.44%
2024	1,054	392	662	37%	55	4	45	120.71%	120.71%
2025	1,051	413	638	39%	55	4	45	120.71%	118.30%
2026	1,046	424	622	41%	52	4	45	115.39%	115.39%
2027	1,040	432	608	42%	52	4	45	115.39%	114.66%
2028	1,034	441	593	43%	52	4	45	113.93%	113.93%
2029	1,026	448	578	44%	52	4	45	113.93%	113.26%
2030	1,018	457	561	45%	51	4	45	112.61%	112.61%
2031	1,009	465	544	46%	51	4	45	112.61%	112.16%
2032	1,000	474	526	47%	51	4	45	111.75%	111.75%
2033	990	483	507	49%	51	4	45	111.75%	111.46%
2034	981	494	487	50%	50	4	45	111.19%	111.19%
2035	972	506	466	52%	50	4	45	111.19%	110.91%
2036	962	518	444	54%	50	4	45	110.54%	110.54%
2037	952	531	421	56%	50	4	45	110.54%	110.14%
2038	942	545	397	58%	50	4	45	109.66%	109.66%
2039	931	560	371	60%	50	4	45	109.66%	109.17%
2040	920	576	344	63%	49	4	45	107.78%	107.78%
2041	908	592	316	65%	49	4	45	107.78%	110.49%
2042	896	609	287	68%	51	4	45	112.45%	112.45%
2043	883	630	253	71%	51	4	45	112.45%	114.18%
2044	871	652	219	75%	52	4	45	115.75%	115.75%
2045	857	678	179	79%	52	4	45	115.75%	117.70%
2046	844	704	140	83%	53	4	45	117.76%	117.76%
2047	830	734	96	88%	53	4	45	117.76%	117.73%
2048	816	766	50	94%	53	4	45	117.70%	117.70%
2049	801	801	-	100%	4	4	45	7.77%	7.77%
2050	787	787	-	100%	4	4	45	7.77%	7.77%

Notes and assumptions:

The projection is based on the results of the June 30, 2021 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 5.25%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to decrease 2% each year for each of the next 30 years.

Covered payroll is assumed to remain level throughout the entire projection.

The contribution rate established in the Commonwealth's biennium budget is assumed to be equal to the full actuarially determined contribution rate.

Kentucky Public Pensions Authority
Exhibit 2-6
CERS Non-Hazardous Insurance Fund
Actuarial Analysis of SB209
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 3,450	\$ 2,947	\$ 503	85%	\$ 104	\$ 14	\$ 2,499	4.17%	4.17%
2022	3,595	3,196	399	89%	86	15	2,549	3.39%	3.39%
2023	3,736	3,415	321	91%	76	16	2,600	2.93%	2.93%
2024	3,872	3,624	248	94%	68	18	2,652	2.55%	2.55%
2025	4,000	3,849	151	96%	59	19	2,706	2.19%	2.19%
2026	4,122	3,966	156	96%	48	20	2,760	1.75%	1.75%
2027	4,234	4,064	170	96%	46	22	2,815	1.62%	1.62%
2028	4,337	4,152	185	96%	42	23	2,871	1.48%	1.48%
2029	4,431	4,230	201	96%	40	24	2,929	1.35%	1.35%
2030	4,517	4,297	220	95%	37	26	2,987	1.24%	1.24%
2031	4,596	4,355	241	95%	35	27	3,047	1.14%	1.14%
2032	4,668	4,405	263	94%	32	28	3,108	1.04%	1.04%
2033	4,735	4,448	287	94%	31	29	3,170	0.97%	0.97%
2034	4,800	4,487	313	94%	29	30	3,233	0.90%	0.90%
2035	4,865	4,522	343	93%	28	31	3,298	0.85%	0.85%
2036	4,931	4,557	374	92%	27	32	3,364	0.79%	0.79%
2037	5,000	4,592	408	92%	26	33	3,431	0.76%	0.76%
2038	5,072	4,627	445	91%	26	34	3,500	0.74%	0.74%
2039	5,146	4,662	484	91%	25	35	3,570	0.71%	0.71%
2040	5,224	4,698	526	90%	63	36	3,641	1.74%	1.74%
2041	5,305	4,774	531	90%	90	37	3,714	2.42%	2.42%
2042	5,390	4,880	510	91%	102	38	3,788	2.70%	2.70%
2043	5,479	5,004	475	91%	114	38	3,864	2.94%	2.94%
2044	5,571	5,145	426	92%	124	39	3,941	3.15%	3.15%
2045	5,666	5,303	363	94%	138	40	4,020	3.44%	3.44%
2046	5,764	5,483	281	95%	141	41	4,101	3.44%	3.44%
2047	5,864	5,672	192	97%	144	42	4,183	3.44%	3.44%
2048	5,966	5,870	96	98%	146	43	4,266	3.42%	3.42%
2049	6,068	6,068	-	100%	37	43	4,352	0.84%	0.84%
2050	6,171	6,171	-	100%	37	44	4,439	0.83%	0.83%

Notes and assumptions:

The projection is based on the results of the June 30, 2021 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.25%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to remain level throughout the entire projection.

Covered payroll is assumed to increase 2% each year throughout the entire projection.

The Board certified contribution rate paid by employers is assumed to be equal to the full actuarially determined contribution rate, except as allowed by

House Bill 362 (passed during the 2018 legislative session), which limits the certified contribution rate to a 12% increase over the prior year rate for the period of July 1, 2018 to June 30, 2028.

Kentucky Public Pensions Authority
Exhibit 2-7
CERS Hazardous Insurance Fund
Actuarial Analysis of SB209
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 1,751	\$ 1,476	\$ 275	84%	\$ 50	\$ 3	\$ 573	8.73%	8.73%
2022	1,797	1,578	219	88%	40	3	585	6.78%	6.78%
2023	1,836	1,660	176	90%	34	4	597	5.62%	5.62%
2024	1,868	1,731	137	93%	29	4	609	4.71%	4.71%
2025	1,892	1,808	84	96%	24	5	621	3.88%	3.88%
2026	1,912	1,829	83	96%	19	5	633	2.93%	2.93%
2027	1,928	1,840	88	95%	17	5	646	2.68%	2.68%
2028	1,939	1,846	93	95%	16	6	659	2.48%	2.48%
2029	1,945	1,848	97	95%	16	6	672	2.31%	2.31%
2030	1,950	1,846	104	95%	15	6	685	2.18%	2.18%
2031	1,952	1,842	110	94%	15	6	699	2.08%	2.08%
2032	1,952	1,835	117	94%	14	7	713	2.00%	2.00%
2033	1,953	1,828	125	94%	14	7	727	1.94%	1.94%
2034	1,954	1,821	133	93%	14	7	742	1.88%	1.88%
2035	1,956	1,815	141	93%	14	7	757	1.85%	1.85%
2036	1,961	1,810	151	92%	14	8	772	1.82%	1.82%
2037	1,970	1,809	161	92%	14	8	787	1.79%	1.79%
2038	1,983	1,811	172	91%	14	8	803	1.78%	1.78%
2039	1,998	1,814	184	91%	14	8	819	1.75%	1.75%
2040	2,018	1,822	196	90%	20	8	835	2.36%	2.36%
2041	2,041	1,837	204	90%	32	9	852	3.77%	3.77%
2042	2,067	1,867	200	90%	39	9	869	4.45%	4.45%
2043	2,097	1,909	188	91%	44	9	887	4.97%	4.97%
2044	2,130	1,959	171	92%	49	9	904	5.47%	5.47%
2045	2,166	2,018	148	93%	57	9	922	6.14%	6.14%
2046	2,202	2,088	114	95%	58	9	941	6.13%	6.13%
2047	2,240	2,161	79	97%	59	10	960	6.11%	6.11%
2048	2,278	2,238	40	98%	60	10	979	6.11%	6.11%
2049	2,316	2,316	-	100%	16	10	998	1.62%	1.62%
2050	2,354	2,354	-	100%	16	10	1,018	1.61%	1.61%

Notes and assumptions:

The projection is based on the results of the June 30, 2021 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.25%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to remain level throughout the entire projection.

Covered payroll is assumed to increase 2% each year throughout the entire projection.

The Board certified contribution rate paid by employers is assumed to be equal to the full actuarially determined contribution rate, except as allowed by

House Bill 362 (passed during the 2018 legislative session), which limits the certified contribution rate to a 12% increase over the prior year rate for the period of July 1, 2018 to June 30, 2028.

Kentucky Public Pensions Authority
Exhibit 2-8
KERS Non-Hazardous Insurance Fund
Actuarial Analysis of SB209
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll (Normal Cost)	Employer Contribution (Amortization Cost)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 2,574	\$ 1,291	\$ 1,283	50%	\$ 132	\$ 6	\$ 1,339	2.20%	\$ 102
2022	2,641	1,422	1,219	54%	117	7	1,339	2.15%	88
2023	2,706	1,535	1,171	57%	117	7	1,339	2.15%	88
2024	2,764	1,646	1,118	60%	107	8	1,339	1.92%	81
2025	2,816	1,754	1,062	62%	107	8	1,339	1.92%	81
2026	2,860	1,816	1,044	64%	96	9	1,339	1.67%	74
2027	2,896	1,863	1,033	64%	96	9	1,339	1.67%	74
2028	2,923	1,902	1,021	65%	93	10	1,339	1.41%	74
2029	2,941	1,932	1,009	66%	93	10	1,339	1.41%	74
2030	2,950	1,954	996	66%	89	11	1,339	1.16%	74
2031	2,951	1,969	982	67%	89	11	1,339	1.16%	74
2032	2,945	1,978	967	67%	87	11	1,339	0.95%	74
2033	2,934	1,983	951	68%	87	12	1,339	0.95%	74
2034	2,918	1,983	935	68%	85	12	1,339	0.80%	74
2035	2,898	1,980	918	68%	85	12	1,339	0.80%	74
2036	2,876	1,977	899	69%	83	13	1,339	0.68%	74
2037	2,854	1,975	879	69%	83	13	1,339	0.68%	74
2038	2,832	1,974	858	70%	82	13	1,339	0.60%	74
2039	2,810	1,976	834	70%	82	13	1,339	0.60%	74
2040	2,790	1,979	811	71%	103	13	1,339	0.54%	96
2041	2,772	2,009	763	73%	118	13	1,339	0.54%	111
2042	2,755	2,060	695	75%	121	13	1,339	0.50%	115
2043	2,741	2,120	621	77%	125	13	1,339	0.50%	118
2044	2,729	2,191	538	80%	128	13	1,339	0.47%	121
2045	2,718	2,272	446	84%	132	13	1,339	0.47%	126
2046	2,709	2,364	345	87%	132	13	1,339	0.44%	126
2047	2,699	2,462	237	91%	132	13	1,339	0.44%	126
2048	2,688	2,566	122	96%	131	13	1,339	0.43%	126
2049	2,677	2,677	-	100%	6	13	1,339	0.42%	-
2050	2,663	2,663	-	100%	5	13	1,339	0.41%	-

Notes and assumptions:

The projection is based on the results of the June 30, 2021 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.25%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to decrease 2% each year for each of the next 30 years.

Covered payroll is assumed to remain level throughout the entire projection.

The contribution rate established in the Commonwealth's biennium budget is assumed to be equal to the normal cost portion of the actuarially determined contribution.

The full actuarially determined amortization cost is assumed to be allocated amongst employers each biennium.

The second year of a biannual budget is assumed to take into account any expiring amortization bases.

Kentucky Public Pensions Authority
Exhibit 2-9
KERS Hazardous Insurance Fund
Actuarial Analysis of SB209
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 424	\$ 575	\$ (151)	136%	\$ -	\$ 1	\$ 162	0.00%	0.00%
2022	437	608	(171)	139%	-	1	162	0.00%	0.00%
2023	447	639	(192)	143%	-	1	162	0.00%	0.00%
2024	456	669	(213)	147%	-	1	162	0.00%	0.00%
2025	464	705	(241)	152%	-	1	162	0.00%	0.00%
2026	470	722	(252)	154%	-	1	162	0.00%	0.00%
2027	475	739	(264)	156%	-	1	162	0.00%	0.00%
2028	479	755	(276)	158%	-	1	162	0.00%	0.00%
2029	482	772	(290)	160%	-	1	162	0.00%	0.00%
2030	485	788	(303)	163%	-	2	162	0.00%	0.00%
2031	487	806	(319)	166%	-	2	162	0.00%	0.00%
2032	488	824	(336)	169%	-	2	162	0.00%	0.00%
2033	491	844	(353)	172%	-	2	162	0.00%	0.00%
2034	493	864	(371)	175%	-	2	162	0.00%	0.00%
2035	495	887	(392)	179%	-	2	162	0.00%	0.00%
2036	498	911	(413)	183%	-	2	162	0.00%	0.00%
2037	501	937	(436)	187%	-	2	162	0.00%	0.00%
2038	505	965	(460)	191%	-	2	162	0.00%	0.00%
2039	510	995	(485)	195%	-	2	162	0.00%	0.00%
2040	515	1,027	(512)	199%	-	2	162	0.00%	0.00%
2041	520	1,061	(541)	204%	-	2	162	0.00%	0.00%
2042	526	1,098	(572)	209%	-	2	162	0.00%	0.00%
2043	533	1,137	(604)	213%	-	2	162	0.00%	0.00%
2044	540	1,178	(638)	218%	-	2	162	0.00%	0.00%
2045	547	1,222	(675)	223%	-	2	162	0.00%	0.00%
2046	554	1,268	(714)	229%	-	2	162	0.00%	0.00%
2047	561	1,317	(756)	235%	-	2	162	0.00%	0.00%
2048	567	1,367	(800)	241%	-	2	162	0.00%	0.00%
2049	573	1,420	(847)	248%	-	2	162	0.00%	0.00%
2050	578	1,476	(898)	255%	-	2	162	0.00%	0.00%

Notes and assumptions:

The projection is based on the results of the June 30, 2021 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.25%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to decrease 2% each year for each of the next 30 years.

Covered payroll is assumed to remain level throughout the entire projection.

The contribution rate established in the Commonwealth's biennium budget is assumed to be equal to the full actuarially determined contribution rate.

Kentucky Public Pensions Authority
Exhibit 2-10
SPRS Insurance Fund
Actuarial Analysis of SB209
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 272	\$ 223	\$ 49	82%	\$ 8	\$ -	\$ 45	18.07%	18.07%
2022	278	238	40	86%	6	-	45	14.11%	14.11%
2023	282	250	32	89%	6	-	45	14.11%	11.65%
2024	285	261	24	92%	4	-	45	9.42%	9.42%
2025	286	271	15	95%	4	-	45	9.42%	7.54%
2026	287	273	14	95%	2	-	45	5.17%	5.17%
2027	287	272	15	95%	2	-	45	5.17%	4.75%
2028	286	271	15	95%	2	-	45	4.39%	4.39%
2029	284	268	16	94%	2	-	45	4.39%	4.12%
2030	282	265	17	94%	2	-	45	3.88%	3.88%
2031	279	262	17	94%	2	-	45	3.88%	3.73%
2032	275	258	17	94%	2	-	45	3.59%	3.59%
2033	272	253	19	93%	2	-	45	3.59%	3.51%
2034	268	249	19	93%	2	-	45	3.46%	3.46%
2035	264	244	20	92%	2	-	45	3.46%	3.41%
2036	261	239	22	92%	2	-	45	3.37%	3.37%
2037	258	235	23	91%	2	-	45	3.37%	3.35%
2038	255	231	24	91%	2	-	45	3.33%	3.33%
2039	252	227	25	90%	2	-	45	3.33%	3.31%
2040	250	224	26	90%	2	-	45	4.56%	4.56%
2041	248	221	27	89%	2	-	45	4.56%	8.39%
2042	247	219	28	89%	5	-	45	10.40%	10.40%
2043	246	220	26	89%	5	-	45	10.40%	11.96%
2044	246	221	25	90%	6	-	45	13.40%	13.40%
2045	246	224	22	91%	6	-	45	13.40%	15.27%
2046	246	228	18	93%	7	-	45	15.45%	15.45%
2047	246	233	13	95%	7	-	45	15.45%	15.50%
2048	246	238	8	97%	7	-	45	15.50%	15.50%
2049	246	246	-	100%	2	-	45	3.39%	3.39%
2050	246	246	-	100%	2	-	45	3.37%	3.37%

Notes and assumptions:

The projection is based on the results of the June 30, 2021 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.25%.

New active members are assumed to be hired as current active members are assumed to terminate employment or retire.

The total active population is assumed to decrease 2% each year for each of the next 30 years.

Covered payroll is assumed to remain level throughout the entire projection.

The contribution rate established in the Commonwealth's biennium budget is assumed to be equal to the full actuarially determined contribution rate.

Actuarial Analysis of SB209

Section 3.

Projected Cost of the Retirement and Insurance Proposed Legislation

Kentucky Public Pensions Authority
Exhibit 3-1
CERS Non-Hazardous Retirement Fund
Actuarial Analysis of SB209
Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 14,895	\$ 7,716	\$ 7,179	52%	\$ 576	\$ 126	\$ 2,529	22.78%	23.88%
2022	15,240	8,308	6,932	55%	604	129	2,579	23.40%	23.40%
2023	15,563	8,881	6,682	57%	585	132	2,631	22.25%	22.25%
2024	15,867	9,432	6,435	59%	572	134	2,684	21.33%	21.33%
2025	16,152	10,034	6,118	62%	560	137	2,737	20.45%	20.45%
2026	16,415	10,340	6,075	63%	542	140	2,792	19.42%	19.42%
2027	16,656	10,612	6,044	64%	547	142	2,848	19.21%	19.21%
2028	16,875	10,871	6,004	64%	553	145	2,905	19.03%	19.03%
2029	17,073	11,119	5,954	65%	559	148	2,963	18.86%	18.86%
2030	17,253	11,359	5,894	66%	565	151	3,022	18.70%	18.70%
2031	17,416	11,595	5,821	67%	572	154	3,083	18.56%	18.56%
2032	17,575	11,838	5,737	67%	579	157	3,144	18.43%	18.43%
2033	17,722	12,084	5,638	68%	588	160	3,207	18.32%	18.32%
2034	17,859	12,333	5,526	69%	596	164	3,271	18.22%	18.22%
2035	17,988	12,591	5,397	70%	605	167	3,337	18.13%	18.13%
2036	18,112	12,861	5,251	71%	614	170	3,403	18.05%	18.05%
2037	18,236	13,148	5,088	72%	625	174	3,471	17.99%	17.99%
2038	18,365	13,461	4,904	73%	635	177	3,541	17.93%	17.93%
2039	18,502	13,802	4,700	75%	646	181	3,612	17.89%	17.89%
2040	18,651	14,179	4,472	76%	650	184	3,684	17.64%	17.64%
2041	18,815	14,586	4,229	78%	697	188	3,758	18.54%	18.54%
2042	18,995	15,071	3,924	79%	742	192	3,833	19.35%	19.35%
2043	19,193	15,638	3,555	82%	783	195	3,909	20.02%	20.02%
2044	19,411	16,287	3,124	84%	824	199	3,988	20.66%	20.66%
2045	19,649	17,025	2,624	87%	873	203	4,067	21.47%	21.47%
2046	19,910	17,864	2,046	90%	891	207	4,149	21.47%	21.47%
2047	20,194	18,778	1,416	93%	909	212	4,232	21.47%	21.47%
2048	20,501	19,771	730	96%	926	216	4,316	21.46%	21.46%
2049	20,834	20,834	-	100%	160	220	4,403	3.64%	3.64%
2050	21,193	21,193	-	100%	163	225	4,491	3.64%	3.64%

Notes and assumptions:

The proposed legislation will provide increased retiree insurance benefits to applicable retirees. However, we do not believe the change in insurance benefits will materially change the anticipated retirement pattern for these employee groups. Therefore, we continue to use the same retirement assumptions in the 2021 actuarial valuation which will also result in no impact to the pension fund.

Kentucky Public Pensions Authority
Exhibit 3-2
CERS Hazardous Retirement Fund
Actuarial Analysis of SB209
Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 5,629	\$ 2,629	\$ 3,000	47%	\$ 206	\$ 46	\$ 578	35.60%	43.23%
2022	5,784	2,834	2,950	49%	253	47	590	42.81%	42.81%
2023	5,929	3,067	2,862	52%	247	48	602	41.04%	41.04%
2024	6,067	3,292	2,775	54%	243	49	614	39.63%	39.63%
2025	6,199	3,537	2,662	57%	240	50	626	38.29%	38.29%
2026	6,324	3,685	2,639	58%	234	51	639	36.70%	36.70%
2027	6,444	3,825	2,619	59%	237	52	651	36.33%	36.33%
2028	6,560	3,963	2,597	60%	239	53	664	36.00%	36.00%
2029	6,671	4,103	2,568	62%	242	54	678	35.68%	35.68%
2030	6,782	4,247	2,535	63%	245	55	691	35.43%	35.43%
2031	6,893	4,398	2,495	64%	248	56	705	35.22%	35.22%
2032	7,008	4,558	2,450	65%	252	58	719	35.04%	35.04%
2033	7,125	4,727	2,398	66%	256	59	733	34.88%	34.88%
2034	7,247	4,908	2,339	68%	260	60	748	34.74%	34.74%
2035	7,371	5,099	2,272	69%	264	61	763	34.60%	34.60%
2036	7,499	5,302	2,197	71%	268	62	778	34.46%	34.46%
2037	7,628	5,515	2,113	72%	272	64	794	34.31%	34.31%
2038	7,757	5,737	2,020	74%	277	65	810	34.15%	34.15%
2039	7,883	5,968	1,915	76%	281	66	826	33.98%	33.98%
2040	8,009	6,209	1,800	78%	272	67	843	32.34%	32.34%
2041	8,134	6,448	1,686	79%	279	69	859	32.43%	32.43%
2042	8,261	6,701	1,560	81%	294	70	877	33.59%	33.59%
2043	8,390	6,981	1,409	83%	309	72	894	34.53%	34.53%
2044	8,522	7,288	1,234	86%	323	73	912	35.45%	35.45%
2045	8,657	7,621	1,036	88%	341	74	930	36.67%	36.67%
2046	8,792	7,986	806	91%	348	76	949	36.67%	36.67%
2047	8,931	8,373	558	94%	355	77	968	36.68%	36.68%
2048	9,072	8,785	287	97%	362	79	987	36.70%	36.70%
2049	9,215	9,215	-	100%	59	81	1,007	5.88%	5.88%
2050	9,361	9,361	-	100%	61	82	1,027	5.90%	5.90%

Notes and assumptions:

The proposed legislation will provide increased retiree insurance benefits to applicable retirees. However, we do not believe the change in insurance benefits will materially change the anticipated retirement pattern for these employee groups. Therefore, we continue to use the same retirement assumptions in the 2021 actuarial valuation which will also result in no impact to the pension fund.

The proposed legislation increases the actuarially determined contribution rate for the CERS Hazardous fund above the maximum allowable rate under the current phase-in provisions.

For the purposes of this analysis, we have kept the pension fund contribution rate at the actuarially determined rate and limited the rate payable from the insurance fund.

Kentucky Public Pensions Authority
Exhibit 3-3
KERS Non-Hazardous Retirement Fund
Actuarial Analysis of SB209
Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll (Normal Cost)	Employer Contribution (Amortization Cost)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 16,321	\$ 2,736	\$ 13,585	17%	\$ 1,027	\$ 67	\$ 1,349	7.90%	\$ 920
2022	16,319	3,053	13,266	19%	1,012	67	1,349	7.82%	906
2023	16,293	3,337	12,956	21%	1,012	67	1,349	7.82%	906
2024	16,246	3,612	12,634	22%	991	67	1,349	7.29%	893
2025	16,178	3,878	12,300	24%	991	67	1,349	7.29%	893
2026	16,088	4,058	12,030	25%	971	67	1,349	6.82%	879
2027	15,978	4,218	11,760	26%	971	67	1,349	6.82%	879
2028	15,848	4,372	11,476	28%	965	67	1,349	6.38%	879
2029	15,698	4,520	11,178	29%	965	67	1,349	6.38%	879
2030	15,529	4,666	10,863	30%	959	67	1,349	5.97%	879
2031	15,344	4,812	10,532	31%	959	67	1,349	5.97%	879
2032	15,151	4,968	10,183	33%	954	67	1,349	5.62%	879
2033	14,944	5,128	9,816	34%	954	67	1,349	5.62%	879
2034	14,726	5,295	9,431	36%	950	67	1,349	5.31%	879
2035	14,497	5,472	9,025	38%	950	67	1,349	5.31%	879
2036	14,259	5,663	8,596	40%	947	67	1,349	5.05%	879
2037	14,017	5,871	8,146	42%	947	67	1,349	5.05%	879
2038	13,774	6,101	7,673	44%	944	67	1,349	4.86%	879
2039	13,533	6,358	7,175	47%	944	67	1,349	4.86%	879
2040	13,294	6,645	6,649	50%	945	67	1,349	4.72%	881
2041	13,061	6,966	6,095	53%	975	67	1,349	4.72%	911
2042	12,833	7,353	5,480	57%	980	67	1,349	4.62%	917
2043	12,610	7,784	4,826	62%	987	67	1,349	4.62%	924
2044	12,395	8,263	4,132	67%	992	67	1,349	4.52%	931
2045	12,187	8,793	3,394	72%	999	67	1,349	4.52%	938
2046	11,987	9,377	2,610	78%	998	67	1,349	4.45%	938
2047	11,795	10,011	1,784	85%	998	67	1,349	4.45%	938
2048	11,611	10,697	914	92%	997	67	1,349	4.38%	938
2049	11,438	11,438	-	100%	59	67	1,349	4.36%	-
2050	11,276	11,276	-	100%	59	67	1,349	4.34%	-

Notes and assumptions:

The proposed legislation will provide increased retiree insurance benefits to applicable retirees. However, we do not believe the change in insurance benefits will materially change the anticipated retirement pattern for these employee groups. Therefore, we continue to use the same retirement assumptions in the 2021 actuarial valuation which will also result in no impact to the pension fund.

Kentucky Public Pensions Authority
Exhibit 3-4
KERS Hazardous Retirement Fund
Actuarial Analysis of SB209
Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 1,295	\$ 782	\$ 513	60%	\$ 54	\$ 13	\$ 163	33.43%	33.43%
2022	1,325	848	477	64%	52	13	163	31.82%	31.82%
2023	1,353	907	446	67%	52	13	163	31.82%	29.92%
2024	1,378	966	412	70%	46	13	163	28.18%	28.18%
2025	1,403	1,026	377	73%	46	13	163	28.18%	26.67%
2026	1,426	1,060	366	74%	40	13	163	24.68%	24.68%
2027	1,448	1,088	360	75%	40	13	163	24.68%	24.43%
2028	1,468	1,115	353	76%	39	13	163	24.16%	24.16%
2029	1,486	1,140	346	77%	39	13	163	24.16%	23.95%
2030	1,505	1,166	339	78%	39	13	163	23.79%	23.79%
2031	1,524	1,192	332	78%	39	13	163	23.79%	23.68%
2032	1,544	1,221	323	79%	38	13	163	23.58%	23.58%
2033	1,566	1,250	316	80%	38	13	163	23.58%	23.52%
2034	1,589	1,282	307	81%	38	13	163	23.45%	23.45%
2035	1,612	1,315	297	82%	38	13	163	23.45%	23.39%
2036	1,637	1,349	288	82%	38	13	163	23.31%	23.31%
2037	1,661	1,384	277	83%	38	13	163	23.31%	23.22%
2038	1,686	1,420	266	84%	38	13	163	23.11%	23.11%
2039	1,710	1,456	254	85%	38	13	163	23.11%	23.01%
2040	1,734	1,492	242	86%	36	13	163	21.86%	21.86%
2041	1,758	1,528	230	87%	36	13	163	21.86%	24.55%
2042	1,782	1,564	218	88%	43	13	163	26.28%	26.28%
2043	1,807	1,609	198	89%	43	13	163	26.28%	27.70%
2044	1,832	1,656	176	90%	47	13	163	29.07%	29.07%
2045	1,857	1,709	148	92%	47	13	163	29.07%	30.81%
2046	1,881	1,763	118	94%	50	13	163	30.97%	30.97%
2047	1,905	1,821	84	96%	50	13	163	30.97%	31.00%
2048	1,928	1,881	47	98%	50	13	163	31.01%	31.01%
2049	1,950	1,950	-	100%	10	13	163	6.29%	6.29%
2050	1,971	1,971	-	100%	10	13	163	6.29%	6.29%

Notes and assumptions:

The proposed legislation will provide increased retiree insurance benefits to applicable retirees. However, we do not believe the change in insurance benefits will materially change the anticipated retirement pattern for these employee groups. Therefore, we continue to use the same retirement assumptions in the 2021 actuarial valuation which will also result in no impact to the pension fund.

Kentucky Public Pensions Authority
Exhibit 3-5
SPRS Retirement Fund
Actuarial Analysis of SB209
Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 1,053	\$ 323	\$ 730	31%	\$ 58	\$ 4	\$ 45	127.99%	127.99%
2022	1,055	348	707	33%	57	4	45	126.40%	126.40%
2023	1,055	371	684	35%	57	4	45	126.40%	123.44%
2024	1,054	392	662	37%	55	4	45	120.71%	120.71%
2025	1,051	413	638	39%	55	4	45	120.71%	118.30%
2026	1,046	424	622	41%	52	4	45	115.39%	115.39%
2027	1,040	432	608	42%	52	4	45	115.39%	114.66%
2028	1,034	441	593	43%	52	4	45	113.93%	113.93%
2029	1,026	448	578	44%	52	4	45	113.93%	113.26%
2030	1,018	457	561	45%	51	4	45	112.61%	112.61%
2031	1,009	465	544	46%	51	4	45	112.61%	112.16%
2032	1,000	474	526	47%	51	4	45	111.75%	111.75%
2033	990	483	507	49%	51	4	45	111.75%	111.46%
2034	981	494	487	50%	50	4	45	111.19%	111.19%
2035	972	506	466	52%	50	4	45	111.19%	110.91%
2036	962	518	444	54%	50	4	45	110.54%	110.54%
2037	952	531	421	56%	50	4	45	110.54%	110.14%
2038	942	545	397	58%	50	4	45	109.66%	109.66%
2039	931	560	371	60%	50	4	45	109.66%	109.17%
2040	920	576	344	63%	49	4	45	107.78%	107.78%
2041	908	592	316	65%	49	4	45	107.78%	110.49%
2042	896	609	287	68%	51	4	45	112.45%	112.45%
2043	883	630	253	71%	51	4	45	112.45%	114.18%
2044	871	652	219	75%	52	4	45	115.75%	115.75%
2045	857	678	179	79%	52	4	45	115.75%	117.70%
2046	844	704	140	83%	53	4	45	117.76%	117.76%
2047	830	734	96	88%	53	4	45	117.76%	117.73%
2048	816	766	50	94%	53	4	45	117.70%	117.70%
2049	801	801	-	100%	4	4	45	7.77%	7.77%
2050	787	787	-	100%	4	4	45	7.77%	7.77%

Notes and assumptions:

The proposed legislation will provide increased retiree insurance benefits to applicable retirees. However, we do not believe the change in insurance benefits will materially change the anticipated retirement pattern for these employee groups. Therefore, we continue to use the same retirement assumptions in the 2021 actuarial valuation which will also result in no impact to the pension fund.

Kentucky Public Pensions Authority
Exhibit 3-6
CERS Non-Hazardous Insurance Fund
Actuarial Analysis of SB209
Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 3,506	\$ 2,947	\$ 559	84%	\$ 104	\$ 14	\$ 2,499	4.17%	4.17%
2022	3,657	3,195	462	87%	95	15	2,549	3.73%	3.73%
2023	3,806	3,422	384	90%	85	16	2,600	3.28%	3.28%
2024	3,949	3,639	310	92%	77	18	2,652	2.92%	2.92%
2025	4,087	3,875	212	95%	69	19	2,706	2.56%	2.56%
2026	4,217	4,002	215	95%	59	20	2,760	2.13%	2.13%
2027	4,340	4,113	227	95%	57	22	2,815	2.02%	2.02%
2028	4,455	4,214	241	95%	54	23	2,871	1.88%	1.88%
2029	4,562	4,307	255	94%	52	24	2,929	1.76%	1.76%
2030	4,661	4,390	271	94%	49	26	2,987	1.65%	1.65%
2031	4,755	4,466	289	94%	48	27	3,047	1.56%	1.56%
2032	4,843	4,535	308	94%	46	28	3,108	1.47%	1.47%
2033	4,928	4,599	329	93%	44	29	3,170	1.39%	1.39%
2034	5,011	4,658	353	93%	43	30	3,233	1.34%	1.34%
2035	5,094	4,716	378	93%	43	31	3,298	1.29%	1.29%
2036	5,179	4,775	404	92%	42	32	3,364	1.24%	1.24%
2037	5,268	4,834	434	92%	42	33	3,431	1.21%	1.21%
2038	5,359	4,895	464	91%	42	34	3,500	1.19%	1.19%
2039	5,455	4,957	498	91%	41	35	3,570	1.16%	1.16%
2040	5,554	5,020	534	90%	80	36	3,641	2.19%	2.19%
2041	5,658	5,125	533	91%	100	37	3,714	2.68%	2.68%
2042	5,764	5,253	511	91%	113	38	3,788	2.97%	2.97%
2043	5,875	5,399	476	92%	124	38	3,864	3.20%	3.20%
2044	5,989	5,563	426	93%	135	39	3,941	3.42%	3.42%
2045	6,107	5,743	364	94%	149	40	4,020	3.70%	3.70%
2046	6,226	5,944	282	96%	152	41	4,101	3.70%	3.70%
2047	6,347	6,153	194	97%	155	42	4,183	3.70%	3.70%
2048	6,469	6,373	96	99%	157	43	4,266	3.69%	3.69%
2049	6,592	6,592	-	100%	48	43	4,352	1.11%	1.11%
2050	6,714	6,714	-	100%	48	44	4,439	1.09%	1.09%

Notes and assumptions:

The analysis above is based on the same methods, assumptions, and benefit provisions as the analysis under the Current Plan, except for the proposed benefit provision changes.

Kentucky Public Pensions Authority
Exhibit 3-7
CERS Hazardous Insurance Fund
Actuarial Analysis of SB209
Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 1,784	\$ 1,476	\$ 308	83%	\$ 50	\$ 3	\$ 573	8.73%	8.73%
2022	1,837	1,581	256	86%	40	3	585	6.84%	7.71%
2023	1,884	1,665	219	88%	40	4	597	6.65%	6.65%
2024	1,924	1,745	179	91%	35	4	609	5.74%	5.74%
2025	1,957	1,832	125	94%	31	5	621	4.92%	4.92%
2026	1,986	1,863	123	94%	25	5	633	3.98%	3.98%
2027	2,012	1,885	127	94%	24	5	646	3.74%	3.74%
2028	2,032	1,903	129	94%	23	6	659	3.53%	3.53%
2029	2,050	1,916	134	94%	22	6	672	3.34%	3.34%
2030	2,064	1,927	137	93%	22	6	685	3.20%	3.20%
2031	2,076	1,934	142	93%	22	6	699	3.10%	3.10%
2032	2,087	1,940	147	93%	21	7	713	3.01%	3.01%
2033	2,097	1,945	152	93%	21	7	727	2.94%	2.94%
2034	2,109	1,951	158	93%	21	7	742	2.88%	2.88%
2035	2,121	1,957	164	92%	21	7	757	2.84%	2.84%
2036	2,136	1,965	171	92%	22	8	772	2.81%	2.81%
2037	2,155	1,978	177	92%	22	8	787	2.78%	2.78%
2038	2,178	1,993	185	92%	22	8	803	2.76%	2.76%
2039	2,205	2,012	193	91%	22	8	819	2.73%	2.73%
2040	2,236	2,035	201	91%	28	8	835	3.33%	3.33%
2041	2,270	2,066	204	91%	36	9	852	4.25%	4.25%
2042	2,308	2,109	199	91%	42	9	869	4.86%	4.86%
2043	2,351	2,163	188	92%	48	9	887	5.38%	5.38%
2044	2,397	2,226	171	93%	53	9	904	5.87%	5.87%
2045	2,444	2,298	146	94%	60	9	922	6.53%	6.53%
2046	2,494	2,380	114	95%	61	9	941	6.51%	6.51%
2047	2,544	2,466	78	97%	62	10	960	6.50%	6.50%
2048	2,595	2,556	39	99%	63	10	979	6.48%	6.48%
2049	2,646	2,646	-	100%	20	10	998	1.99%	1.99%
2050	2,696	2,696	-	100%	20	10	1,018	1.97%	1.97%

Notes and assumptions:

The analysis above is based on the same methods, assumptions, and benefit provisions as the analysis under the Current Plan, except for the proposed benefit provision changes.

The proposed legislation increases the actuarially determined contribution rate for the CERS Hazardous fund above the maximum allowable rate under the current phase-in provisions.

For the purposes of this analysis, we have kept the pension fund contribution rate at the actuarially determined rate and limited the rate payable from the insurance fund.

Kentucky Public Pensions Authority
Exhibit 3-8
KERS Non-Hazardous Insurance Fund
Actuarial Analysis of SB209
Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll (Normal Cost)	Employer Contribution (Amortization Cost)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 2,590	\$ 1,291	\$ 1,299	50%	\$ 132	\$ 6	\$ 1,339	2.20%	\$ 102
2022	2,659	1,423	1,236	54%	120	7	1,339	2.23%	90
2023	2,726	1,539	1,187	57%	120	7	1,339	2.23%	90
2024	2,786	1,652	1,134	59%	110	8	1,339	2.01%	83
2025	2,840	1,763	1,077	62%	110	8	1,339	2.01%	83
2026	2,887	1,829	1,058	63%	99	9	1,339	1.78%	75
2027	2,926	1,879	1,047	64%	99	9	1,339	1.78%	75
2028	2,957	1,922	1,035	65%	96	10	1,339	1.54%	75
2029	2,978	1,956	1,022	66%	96	10	1,339	1.54%	75
2030	2,991	1,983	1,008	66%	93	11	1,339	1.31%	75
2031	2,996	2,003	993	67%	93	11	1,339	1.31%	75
2032	2,995	2,017	978	67%	90	11	1,339	1.11%	75
2033	2,988	2,027	961	68%	90	12	1,339	1.11%	75
2034	2,977	2,033	944	68%	88	12	1,339	0.97%	75
2035	2,962	2,038	924	69%	88	12	1,339	0.97%	75
2036	2,947	2,042	905	69%	87	13	1,339	0.86%	75
2037	2,931	2,047	884	70%	87	13	1,339	0.86%	75
2038	2,916	2,054	862	70%	86	13	1,339	0.79%	75
2039	2,902	2,064	838	71%	86	13	1,339	0.79%	75
2040	2,890	2,078	812	72%	108	13	1,339	0.74%	98
2041	2,880	2,118	762	74%	121	13	1,339	0.74%	111
2042	2,873	2,177	696	76%	124	13	1,339	0.71%	115
2043	2,868	2,247	621	78%	128	13	1,339	0.71%	118
2044	2,867	2,329	538	81%	131	13	1,339	0.69%	121
2045	2,867	2,421	446	84%	135	13	1,339	0.69%	126
2046	2,867	2,523	344	88%	135	13	1,339	0.66%	126
2047	2,863	2,626	237	92%	135	13	1,339	0.66%	126
2048	2,854	2,732	122	96%	134	13	1,339	0.65%	126
2049	2,844	2,844	-	100%	9	13	1,339	0.64%	-
2050	2,832	2,832	-	100%	8	13	1,339	0.63%	-

Notes and assumptions:

The analysis above is based on the same methods, assumptions, and benefit provisions as the analysis under the Current Plan, except for the proposed benefit provision changes.

Kentucky Public Pensions Authority
Exhibit 3-9
KERS Hazardous Insurance Fund
Actuarial Analysis of SB209
Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 432	\$ 575	\$ (143)	133%	\$ -	\$ 1	\$ 162	0.00%	0.00%
2022	446	609	(163)	137%	-	1	162	0.00%	0.00%
2023	458	640	(182)	140%	-	1	162	0.00%	0.00%
2024	469	671	(202)	143%	-	1	162	0.00%	0.00%
2025	478	707	(229)	148%	-	1	162	0.00%	0.00%
2026	486	724	(238)	149%	-	1	162	0.00%	0.00%
2027	493	741	(248)	150%	-	1	162	0.00%	0.00%
2028	499	758	(259)	152%	-	1	162	0.00%	0.00%
2029	504	775	(271)	154%	-	1	162	0.00%	0.00%
2030	508	792	(284)	156%	-	2	162	0.00%	0.00%
2031	512	809	(297)	158%	-	2	162	0.00%	0.00%
2032	516	828	(312)	161%	-	2	162	0.00%	0.00%
2033	520	847	(327)	163%	-	2	162	0.00%	0.00%
2034	524	867	(343)	166%	-	2	162	0.00%	0.00%
2035	529	889	(360)	168%	-	2	162	0.00%	0.00%
2036	534	913	(379)	171%	-	2	162	0.00%	0.00%
2037	540	938	(398)	174%	-	2	162	0.00%	0.00%
2038	546	965	(419)	177%	-	2	162	0.00%	0.00%
2039	553	995	(442)	180%	-	2	162	0.00%	0.00%
2040	560	1,026	(466)	183%	-	2	162	0.00%	0.00%
2041	568	1,059	(491)	186%	-	2	162	0.00%	0.00%
2042	577	1,095	(518)	190%	-	2	162	0.00%	0.00%
2043	586	1,132	(546)	193%	-	2	162	0.00%	0.00%
2044	596	1,172	(576)	197%	-	2	162	0.00%	0.00%
2045	606	1,214	(608)	200%	-	2	162	0.00%	0.00%
2046	615	1,258	(643)	205%	-	2	162	0.00%	0.00%
2047	624	1,304	(680)	209%	-	2	162	0.00%	0.00%
2048	633	1,351	(718)	213%	-	2	162	0.00%	0.00%
2049	641	1,400	(759)	218%	-	2	162	0.00%	0.00%
2050	648	1,451	(803)	224%	-	2	162	0.00%	0.00%

Notes and assumptions:

The analysis above is based on the same methods, assumptions, and benefit provisions as the analysis under the Current Plan, except for the proposed benefit provision changes.

Kentucky Public Pensions Authority
Exhibit 3-10
SPRS Insurance Fund
Actuarial Analysis of SB209
Proposed Legislation
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	Total Employer Contribution	Member Contribution	Covered Payroll	Total Employer Contribution as % of Covered Payroll	Employer Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2021	\$ 276	\$ 223	\$ 53	81%	\$ 8	\$ -	\$ 45	18.07%	18.07%
2022	282	239	43	85%	7	-	45	15.66%	15.66%
2023	287	251	36	88%	7	-	45	15.66%	13.26%
2024	291	263	28	90%	5	-	45	11.08%	11.08%
2025	294	274	20	93%	5	-	45	11.08%	9.22%
2026	295	277	18	94%	3	-	45	6.87%	6.87%
2027	296	278	18	94%	3	-	45	6.87%	6.46%
2028	296	278	18	94%	3	-	45	6.10%	6.10%
2029	296	277	19	94%	3	-	45	6.10%	5.80%
2030	294	275	19	94%	3	-	45	5.55%	5.55%
2031	292	272	20	93%	3	-	45	5.55%	5.37%
2032	290	269	21	93%	2	-	45	5.23%	5.23%
2033	287	266	21	93%	2	-	45	5.23%	5.13%
2034	284	263	21	93%	2	-	45	5.07%	5.07%
2035	281	259	22	92%	2	-	45	5.07%	5.01%
2036	279	256	23	92%	2	-	45	4.97%	4.97%
2037	276	252	24	91%	2	-	45	4.97%	4.93%
2038	274	250	24	91%	2	-	45	4.92%	4.92%
2039	273	247	26	91%	2	-	45	4.92%	4.89%
2040	272	245	27	90%	3	-	45	6.12%	6.12%
2041	271	243	28	90%	3	-	45	6.12%	9.10%
2042	270	242	28	90%	5	-	45	11.01%	11.01%
2043	270	244	26	90%	5	-	45	11.01%	12.55%
2044	270	246	24	91%	6	-	45	14.00%	14.00%
2045	271	250	21	92%	6	-	45	14.00%	15.85%
2046	272	254	18	93%	7	-	45	16.02%	16.02%
2047	273	260	13	95%	7	-	45	16.02%	16.06%
2048	274	266	8	97%	7	-	45	16.05%	16.05%
2049	275	275	-	100%	2	-	45	3.93%	3.93%
2050	275	275	-	100%	2	-	45	3.91%	3.91%

Notes and assumptions:

The analysis above is based on the same methods, assumptions, and benefit provisions as the analysis under the Current Plan, except for the proposed benefit provision changes.