

# Actuarial Analysis Summary

## AA Statement 1 and 2 of 2

BR or Bill Ref. SB 342 (22 RS BR 1084)

Date: 3/17/2022

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 0.01% of pay and 0.02% of pay for the CERS Non-Hazardous and CERS Hazardous funds, respectively. 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.

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
<b>Projected Employer Cost* (\$ in Millions)</b>						
30-Yr Nominal \$	\$20,742	\$20,757	\$8,604	\$8,606	N/A	N/A
30-Yr Net Present Value \$	\$9,198	\$9,205	\$3,855	\$3,856	N/A	N/A
Proj. Normal Cost for New Hire	4.06% of pay	4.06% of pay	7.75% of pay	7.75% 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
<b>Projected UAL (\$ in Millions)</b>						
Baseline (Year 1)	\$7,179	\$7,184	\$3,000	\$3,001	N/A	N/A
5 Years	\$6,118	\$6,123	\$2,662	\$2,661	N/A	N/A
10 Years	\$5,894	\$5,898	\$2,535	\$2,534	N/A	N/A
20 Years	\$4,472	\$4,473	\$1,800	\$1,800	N/A	N/A
30 Years	\$0	\$0	\$0	\$0	N/A	N/A
<b>Projected Funding Ratio (%)</b>						
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
<b>Projected UAL (\$ in Millions)</b>						
Baseline (Year 1)	\$503	\$505	\$275	\$276	N/A	N/A
5 Years	\$151	\$154	\$84	\$85	N/A	N/A
10 Years	\$220	\$221	\$104	\$104	N/A	N/A
20 Years	\$526	\$526	\$196	\$196	N/A	N/A
30 Years	\$0	\$0	\$0	\$0	N/A	N/A
<b>Projected Funding Ratio (%)</b>						
Baseline (Year 1)	85%	85%	84%	84%	N/A	N/A
5 Years	96%	96%	96%	96%	N/A	N/A
10 Years	95%	95%	95%	95%	N/A	N/A
20 Years	90%	90%	90%	90%	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

Currently, service purchased by a member for the recontribution of a previous refund of member contributions shall not be used to determine the member's participation date if the service was purchased on or after January 1, 2014. The proposed legislation changes the date to January 1, 2023 and applies the proposed changes retroactively so that service purchased on or after January 1, 2014 but prior to January 1, 2023 shall be used to determine a member's participation date.

## **Section IV: Statement of Assumptions and Methods**

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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:

**CERS, KERS, and SPRS provides three tiers of benefits based on a member's participation date so a change in a member's participation date can have a material change in an individual member's benefits and their liability to the fund. The Kentucky Public Pensions Authority (KPPA) provided a listing of 130 members who purchased a recontribution of refund from January 1, 2014 through June 30, 2021 and would have a change in their benefit tier. Our analysis includes the liability associated with these members' participation date change.**

**KPPA also provided a listing of approximately 7,600 additional members who could purchase a recontribution of refund through December 31, 2022 and have their tier of benefits change due to the proposed legislation. Our analysis assumes that 3% of these members will purchase a recontribution of refund through December 31, 2022, or approximately 228 members. While we recognize that we are assuming slightly more members will benefit from this provision through the end of 2022 than purchased service prior to June 30, 2021, we believe it is reasonable and appropriate to expect there will be some higher utilization of this provision because of the increased incentive for members to purchase a recontribution of refund if this legislation becomes enacted.**

## **Section V: Comment from Actuary**

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N/A

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

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**Please see attached.**

# Actuarial Analysis Summary

**BR or Bill Ref.** SB 342 (22 RS BR 1084)  
**Date:** 3/17/2022  
**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 0.02% of pay and 0.03% of pay for the KERS Hazardous and SPRS funds, respectively. The amortization cost for the KERS Non-Hazardous fund increases by \$287,000. As long as employer contributions are increased 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
<b>Projected Employer Cost* (\$ in Millions)</b>						
30-Yr Nominal \$	\$30,345	\$30,347	\$1,212	\$1,212	\$1,572	\$1,572
30-Yr Net Present Value \$	\$15,961	\$15,962	\$586	\$586	\$836	\$836
Proj. Normal Cost for New Hire	3.93% of pay	3.93% of pay	6.87% of pay	6.87% of pay	9.96% of pay	9.96% 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
<b>Projected UAL (\$ in Millions)</b>						
Baseline (Year 1)	\$13,585	\$13,588	\$513	\$514	\$730	\$730
5 Years	\$12,300	\$12,302	\$377	\$377	\$638	\$638
10 Years	\$10,863	\$10,864	\$339	\$339	\$561	\$561
20 Years	\$6,649	\$6,650	\$242	\$242	\$344	\$344
30 Years	\$0	\$0	\$0	\$0	\$0	\$0
<b>Projected Funding Ratio (%)</b>						
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
<b>Projected UAL (\$ in Millions)</b>						
Baseline (Year 1)	\$1,283	\$1,284	\$(151)	\$(150)	\$49	\$49
5 Years	\$1,062	\$1,062	\$(241)	\$(241)	\$15	\$15
10 Years	\$996	\$996	\$(303)	\$(303)	\$17	\$17
20 Years	\$811	\$811	\$(512)	\$(511)	\$26	\$26
30 Years	\$0	\$0	\$(898)	\$(895)	\$0	\$0
<b>Projected Funding Ratio (%)</b>						
Baseline (Year 1)	50%	50%	136%	135%	82%	82%
5 Years	62%	62%	152%	152%	95%	95%
10 Years	66%	66%	163%	163%	94%	94%
20 Years	71%	71%	199%	199%	90%	90%
30 Years	100%	100%	255%	255%	100%	100%

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

### Section III: Brief Summary of Bill

Currently, service purchased by a member for the recontribution of a previous refund of member contributions shall not be used to determine the member's participation date if the service was purchased on or after January 1, 2014. The proposed legislation changes the date to January 1, 2023 and applies the proposed changes retroactively so that service purchased on or after January 1, 2014 but prior to January 1, 2023 shall be used to determine a member's participation date.

## **Section IV: Statement of Assumptions and Methods**

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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:

**CERS, KERS, and SPRS provides three tiers of benefits based on a member's participation date so a change in a member's participation date can have a material change in an individual member's benefits and their liability to the fund. The Kentucky Public Pensions Authority (KPPA) provided a listing of 130 members who purchased a recontribution of refund from January 1, 2014 through June 30, 2021 and would have a change in their benefit tier. Our analysis includes the liability associated with these members' participation date change.**

**KPPA also provided a listing of approximately 7,600 additional members who could purchase a recontribution of refund through December 31, 2022 and have their tier of benefits change due to the proposed legislation. Our analysis assumes that 3% of these members will purchase a recontribution of refund through December 31, 2022, or approximately 228 members. While we recognize that we are assuming more members through the end of 2022 than purchased service prior to June 30, 2021, we believe it is reasonable and appropriate to expect there will be some higher utilization of this provision because of the increased incentive for members to purchase a recontribution of refund if this legislation becomes enacted.**

## **Section V: Comment from Actuary**

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N/A

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

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**Please see attached.**



March 17, 2022

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

**Re: Actuarial Analysis of Proposed Legislation SB 342 and its Financial Impact on the Systems Operated by the Kentucky Public Pensions Authority**

Dear Mr. Eager:

We have reviewed the proposed legislation SB 342 (22 RS BR 1084) 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).

**Summary of Provisions of Proposed Legislation and Cost Impact**

Currently, service purchased by a member for the recontribution of a previous refund of member contributions shall not be used to determine the member’s participation date in CERS, KERS, or SPRS if the service was purchased on or after January 1, 2014. The proposed legislation changes the date to January 1, 2023 and applies the proposed changes retroactively so that service purchased on or after January 1, 2014 but prior to January 1, 2023 shall be used to determine a member’s participation date. The impact of the proposed legislation on the employer contribution requirements are provided in the table below.

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

Plan	Current (June 30, 2021 Valuation) <sup>1</sup>	Proposed Legislation	Impact on FYE 2023 Contribution	Increase in Annual Contribution
CERS Non-Hazardous	26.79%	26.80%	0.01%	\$258,000
CERS Hazardous	49.59%	49.61%	0.02%	\$118,000
KERS Non-Hazardous	9.97% \$994,422,000	9.97% \$994,709,000	0.00% \$287,000	\$287,000
KERS Hazardous	31.82%	31.84%	0.02%	\$33,000
SPRS	140.51%	140.54%	0.03%	\$14,000

<sup>1</sup> 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.

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**

Members who have received a refund of their contributions could elect to repay their refunded contributions with interest in order to reinstate both their previous service and their participation date with the retirement system. However, under current statutes, service purchased on or after January 1, 2014 is only be used to reinstate previous service and is not be used to determine a member's participation date. The proposed legislation extends this date to January 1, 2023 to allow service purchased from January 1, 2014 through December 31, 2022 to be used to determine a member's participation date.

The proposed legislation applies these changes retroactively so that members who purchased a recontribution of refund on or after January 1, 2014 but prior to the effective date of the legislation may have their participation date changed. CERS, KERS, and SPRS provides three tiers of benefits based on a member's participation date so a change in a member's participation date can have a material change in an individual member's benefits and their liability to the fund. The Kentucky Public Pensions Authority (KPPA) provided a listing of 130 members who purchased a recontribution of refund from January 1, 2014 through June 30, 2021 and would have a change in their benefit tier. The table below provides the number of members in each fund as of the June 30, 2021 valuation and the liability associated with the change in participation date.

#### **Recontribution of Refunds through June 30, 2021**

Plan	Active Members	Inactive Members	Retired Members	Liability Increase (Pension & Insurance)
CERS Non-Hazardous	32	11	8	\$1,922,000
CERS Hazardous	5	0	2	\$677,000
KERS Non-Hazardous	19	12	6	\$1,212,000
KERS Hazardous	3	0	0	\$199,000
SPRS	0	1	0	\$69,000

Note, that some members may be in the list above twice as they have multiple retirement accounts. Additionally, members are assumed to elect to keep their current participation date, if more valuable. The count above does not include members who are assumed to elect to retain their current participation date.





KPPA also provided a listing of approximately 7,600 additional members who could purchase a recontribution of refund through December 31, 2022 and have their tier of benefits change due to the proposed legislation. Our analysis assumes that 3% of these members will purchase a recontribution of refund through December 31, 2022, or approximately 228 members. While we recognize that we are assuming more members through the end of 2022 than purchased service prior to June 30, 2021, we believe it is reasonable and appropriate to expect there will be some higher utilization of this provision because of the increased incentive for members to purchase a recontribution of refund if this legislation becomes enacted.

### **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 SB 342**  
**Section 1.**  
**Comparison of Fiscal Impact**  
**Current Plan vs. Proposed Changes**

**Kentucky Public Pensions Authority**  
**Exhibit 1-1**  
**CERS Non-Hazardous Retirement Fund**  
**Actuarial Analysis of SB 342**  
**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	\$ 7,184	\$ 5	52%	52%	0%	\$ 576	\$ 576	\$ -	22.8%	22.8%	0.0%
2022	6,932	6,937	5	55%	55%	0%	604	604	-	23.4%	23.4%	0.0%
2023	6,682	6,686	4	57%	57%	0%	585	586	1	22.3%	22.3%	0.0%
2024	6,435	6,440	5	59%	59%	0%	572	573	1	21.3%	21.4%	0.1%
2025	6,118	6,123	5	62%	62%	0%	560	560	-	20.5%	20.5%	0.0%
2026	6,075	6,079	4	63%	63%	0%	542	542	-	19.4%	19.4%	0.0%
2027	6,044	6,048	4	64%	64%	0%	547	548	1	19.2%	19.2%	0.0%
2028	6,004	6,008	4	64%	64%	0%	553	553	-	19.0%	19.0%	0.0%
2029	5,954	5,959	5	65%	65%	0%	559	559	-	18.9%	18.9%	0.0%
2030	5,894	5,898	4	66%	66%	0%	565	565	-	18.7%	18.7%	0.0%
2031	5,821	5,826	5	67%	67%	0%	572	572	-	18.6%	18.6%	0.0%
2032	5,737	5,741	4	67%	67%	0%	579	580	1	18.4%	18.4%	0.0%
2033	5,638	5,642	4	68%	68%	0%	588	588	-	18.3%	18.3%	0.0%
2034	5,526	5,529	3	69%	69%	0%	596	597	1	18.2%	18.2%	0.0%
2035	5,397	5,400	3	70%	70%	0%	605	605	-	18.1%	18.1%	0.0%
2036	5,251	5,254	3	71%	71%	0%	614	615	1	18.1%	18.1%	0.0%
2037	5,088	5,090	2	72%	72%	0%	625	625	-	18.0%	18.0%	0.0%
2038	4,904	4,906	2	73%	73%	0%	635	636	1	17.9%	18.0%	0.1%
2039	4,700	4,701	1	75%	75%	0%	646	647	1	17.9%	17.9%	0.0%
2040	4,472	4,473	1	76%	76%	0%	650	651	1	17.6%	17.7%	0.1%
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	3,123	(1)	84%	84%	0%	824	824	-	20.7%	20.7%	0.0%
2045	2,624	2,624	-	87%	87%	0%	873	874	1	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	729	(1)	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 1-2**  
**CERS Hazardous Retirement Fund**  
**Actuarial Analysis of SB 342**  
**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	\$ 3,001	\$ 1	47%	47%	0%	\$ 206	\$ 206	\$ -	35.6%	35.6%	0.0%
2022	2,950	2,951	1	49%	49%	0%	253	253	-	42.8%	42.8%	0.0%
2023	2,862	2,863	1	52%	52%	0%	247	247	-	41.0%	41.1%	0.1%
2024	2,775	2,776	1	54%	54%	0%	243	243	-	39.6%	39.6%	0.0%
2025	2,662	2,661	(1)	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	2,620	1	59%	59%	0%	237	237	-	36.3%	36.4%	0.1%
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	2,534	(1)	63%	63%	0%	245	245	-	35.4%	35.4%	0.0%
2031	2,495	2,496	1	64%	64%	0%	248	248	-	35.2%	35.2%	0.0%
2032	2,450	2,451	1	65%	65%	0%	252	252	-	35.0%	35.1%	0.1%
2033	2,398	2,398	-	66%	66%	0%	256	256	-	34.9%	34.9%	0.0%
2034	2,339	2,340	1	68%	68%	0%	260	260	-	34.7%	34.8%	0.1%
2035	2,272	2,272	-	69%	69%	0%	264	264	-	34.6%	34.6%	0.0%
2036	2,197	2,198	1	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	2,019	(1)	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	273	1	32.3%	32.4%	0.1%
2041	1,686	1,687	1	79%	79%	0%	279	279	-	32.4%	32.4%	0.0%
2042	1,560	1,559	(1)	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 1-3**  
**KERS Non-Hazardous Retirement Fund**  
**Actuarial Analysis of SB 342**  
**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)	(13)
2021	\$ 13,585	\$ 13,588	\$ 3	17%	17%	0%	\$ 1,027	\$ 1,027	\$ -	\$ 920	\$ 920	\$ -
2022	13,266	13,269	3	19%	19%	0%	1,012	1,012	-	906	906	-
2023	12,956	12,958	2	21%	21%	0%	1,012	1,012	-	906	906	-
2024	12,634	12,637	3	22%	22%	0%	991	991	-	893	893	-
2025	12,300	12,302	2	24%	24%	0%	991	991	-	893	893	-
2026	12,030	12,032	2	25%	25%	0%	971	971	-	879	879	-
2027	11,760	11,762	2	26%	26%	0%	971	971	-	879	879	-
2028	11,476	11,478	2	28%	28%	0%	965	965	-	879	879	-
2029	11,178	11,179	1	29%	29%	0%	965	965	-	879	879	-
2030	10,863	10,864	1	30%	30%	0%	959	959	-	879	879	-
2031	10,532	10,533	1	31%	31%	0%	959	959	-	879	879	-
2032	10,183	10,185	2	33%	33%	0%	954	955	1	879	879	-
2033	9,816	9,818	2	34%	34%	0%	954	955	1	879	879	-
2034	9,431	9,432	1	36%	36%	0%	950	950	-	879	879	-
2035	9,025	9,025	-	38%	38%	0%	950	950	-	879	879	-
2036	8,596	8,597	1	40%	40%	0%	947	947	-	879	879	-
2037	8,146	8,147	1	42%	42%	0%	947	947	-	879	879	-
2038	7,673	7,674	1	44%	44%	0%	944	944	-	879	879	-
2039	7,175	7,175	-	47%	47%	0%	944	944	-	879	879	-
2040	6,649	6,650	1	50%	50%	0%	945	945	-	881	881	-
2041	6,095	6,094	(1)	53%	53%	0%	975	975	-	911	911	-
2042	5,480	5,480	-	57%	57%	0%	980	980	-	917	917	-
2043	4,826	4,827	1	62%	62%	0%	987	987	-	924	924	-
2044	4,132	4,131	(1)	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	915	1	92%	92%	0%	997	997	-	938	938	-
2049	-	-	-	100%	100%	0%	59	59	-	-	-	-
2050	-	-	-	100%	100%	0%	59	59	-	-	-	-



**Kentucky Public Pensions Authority**  
**Exhibit 1-4**  
**KERS Hazardous Retirement Fund**  
**Actuarial Analysis of SB 342**  
**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	\$ 514	\$ 1	60%	60%	0%	\$ 54	\$ 54	\$ -	33.4%	33.4%	0.0%
2022	477	478	1	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	413	1	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	367	1	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	347	1	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	324	1	79%	79%	0%	38	38	-	23.6%	23.6%	0.0%
2033	316	315	(1)	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	298	1	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	278	1	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	231	1	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	197	(1)	89%	89%	0%	43	43	-	26.3%	26.3%	0.0%
2044	176	175	(1)	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	119	1	94%	94%	0%	50	50	-	31.0%	31.0%	0.0%
2047	84	83	(1)	96%	96%	0%	50	50	-	31.0%	31.0%	0.0%
2048	47	46	(1)	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 1-5**  
**SPRS Retirement Fund**  
**Actuarial Analysis of SB 342**  
**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%	110.6%	0.1%
2037	421	421	-	56%	56%	0%	50	50	-	110.5%	110.6%	0.1%
2038	397	396	(1)	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%	112.4%	-0.1%
2043	253	253	-	71%	71%	0%	51	51	-	112.5%	112.4%	-0.1%
2044	219	219	-	75%	75%	0%	52	52	-	115.8%	115.8%	0.0%
2045	179	180	1	79%	79%	0%	52	52	-	115.8%	115.8%	0.0%
2046	140	139	(1)	83%	84%	1%	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 1-6**  
**CERS Non-Hazardous Insurance Fund**  
**Actuarial Analysis of SB 342**  
**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	\$ 503	\$ 505	\$ 2	85%	85%	0%	\$ 104	\$ 104	\$ -	4.2%	4.2%	0.0%
2022	399	401	2	89%	89%	0%	86	86	-	3.4%	3.4%	0.0%
2023	321	324	3	91%	91%	0%	76	76	-	2.9%	2.9%	0.0%
2024	248	250	2	94%	94%	0%	68	68	-	2.6%	2.6%	0.0%
2025	151	154	3	96%	96%	0%	59	60	1	2.2%	2.2%	0.0%
2026	156	158	2	96%	96%	0%	48	49	1	1.8%	1.8%	0.0%
2027	170	172	2	96%	96%	0%	46	46	-	1.6%	1.6%	0.0%
2028	185	187	2	96%	96%	0%	42	43	1	1.5%	1.5%	0.0%
2029	201	203	2	96%	95%	-1%	40	40	-	1.4%	1.4%	0.0%
2030	220	221	1	95%	95%	0%	37	37	-	1.2%	1.2%	0.0%
2031	241	242	1	95%	95%	0%	35	35	-	1.1%	1.1%	0.0%
2032	263	264	1	94%	94%	0%	32	33	1	1.0%	1.1%	0.1%
2033	287	288	1	94%	94%	0%	31	31	-	1.0%	1.0%	0.0%
2034	313	315	2	94%	93%	-1%	29	29	-	0.9%	0.9%	0.0%
2035	343	344	1	93%	93%	0%	28	28	-	0.9%	0.9%	0.0%
2036	374	375	1	92%	92%	0%	27	27	-	0.8%	0.8%	0.0%
2037	408	409	1	92%	92%	0%	26	26	-	0.8%	0.8%	0.0%
2038	445	445	-	91%	91%	0%	26	26	-	0.7%	0.8%	0.1%
2039	484	484	-	91%	91%	0%	25	26	1	0.7%	0.7%	0.0%
2040	526	526	-	90%	90%	0%	63	63	-	1.7%	1.7%	0.0%
2041	531	531	-	90%	90%	0%	90	90	-	2.4%	2.4%	0.0%
2042	510	510	-	91%	91%	0%	102	102	-	2.7%	2.7%	0.0%
2043	475	474	(1)	91%	91%	0%	114	114	-	2.9%	2.9%	0.0%
2044	426	426	-	92%	92%	0%	124	124	-	3.2%	3.2%	0.0%
2045	363	362	(1)	94%	94%	0%	138	138	-	3.4%	3.4%	0.0%
2046	281	281	-	95%	95%	0%	141	141	-	3.4%	3.4%	0.0%
2047	192	192	-	97%	97%	0%	144	144	-	3.4%	3.4%	0.0%
2048	96	95	(1)	98%	98%	0%	146	146	-	3.4%	3.4%	0.0%
2049	-	-	-	100%	100%	0%	37	37	-	0.8%	0.8%	0.0%
2050	-	-	-	100%	100%	0%	37	37	-	0.8%	0.8%	0.0%





**Kentucky Public Pensions Authority**  
**Exhibit 1-7**  
**CERS Hazardous Insurance Fund**  
**Actuarial Analysis of SB 342**  
**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	\$ 275	\$ 276	\$ 1	84%	84%	0%	\$ 50	\$ 50	\$ -	8.7%	8.7%	0.0%
2022	219	220	1	88%	88%	0%	40	40	-	6.8%	6.8%	0.0%
2023	176	177	1	90%	90%	0%	34	34	-	5.6%	5.6%	0.0%
2024	137	138	1	93%	93%	0%	29	29	-	4.7%	4.7%	0.0%
2025	84	85	1	96%	96%	0%	24	24	-	3.9%	3.9%	0.0%
2026	83	84	1	96%	96%	0%	19	19	-	2.9%	2.9%	0.0%
2027	88	88	-	95%	95%	0%	17	18	1	2.7%	2.7%	0.0%
2028	93	93	-	95%	95%	0%	16	16	-	2.5%	2.5%	0.0%
2029	97	98	1	95%	95%	0%	16	16	-	2.3%	2.3%	0.0%
2030	104	104	-	95%	95%	0%	15	15	-	2.2%	2.2%	0.0%
2031	110	111	1	94%	94%	0%	15	15	-	2.1%	2.1%	0.0%
2032	117	117	-	94%	94%	0%	14	14	-	2.0%	2.0%	0.0%
2033	125	125	-	94%	94%	0%	14	14	-	1.9%	2.0%	0.1%
2034	133	133	-	93%	93%	0%	14	14	-	1.9%	1.9%	0.0%
2035	141	142	1	93%	93%	0%	14	14	-	1.9%	1.9%	0.0%
2036	151	151	-	92%	92%	0%	14	14	-	1.8%	1.8%	0.0%
2037	161	161	-	92%	92%	0%	14	14	-	1.8%	1.8%	0.0%
2038	172	173	1	91%	91%	0%	14	14	-	1.8%	1.8%	0.0%
2039	184	184	-	91%	91%	0%	14	14	-	1.8%	1.8%	0.0%
2040	196	196	-	90%	90%	0%	20	20	-	2.4%	2.4%	0.0%
2041	204	203	(1)	90%	90%	0%	32	32	-	3.8%	3.8%	0.0%
2042	200	200	-	90%	90%	0%	39	39	-	4.5%	4.5%	0.0%
2043	188	188	-	91%	91%	0%	44	44	-	5.0%	5.0%	0.0%
2044	171	171	-	92%	92%	0%	49	49	-	5.5%	5.5%	0.0%
2045	148	147	(1)	93%	93%	0%	57	57	-	6.1%	6.1%	0.0%
2046	114	115	1	95%	95%	0%	58	58	-	6.1%	6.1%	0.0%
2047	79	79	-	97%	97%	0%	59	59	-	6.1%	6.1%	0.0%
2048	40	40	-	98%	98%	0%	60	60	-	6.1%	6.1%	0.0%
2049	-	-	-	100%	100%	0%	16	16	-	1.6%	1.6%	0.0%
2050	-	-	-	100%	100%	0%	16	16	-	1.6%	1.6%	0.0%



**Kentucky Public Pensions Authority**  
**Exhibit 1-8**  
**KERS Non-Hazardous Insurance Fund**  
**Actuarial Analysis of SB 342**  
**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)	(13)
2021	\$ 1,283	\$ 1,284	\$ 1	50%	50%	0%	\$ 132	\$ 132	\$ -	\$ 102	\$ 102	\$ -
2022	1,219	1,220	1	54%	54%	0%	117	117	-	88	88	-
2023	1,171	1,172	1	57%	57%	0%	117	117	-	88	88	-
2024	1,118	1,119	1	60%	60%	0%	107	107	-	81	81	-
2025	1,062	1,062	-	62%	62%	0%	107	107	-	81	81	-
2026	1,044	1,044	-	64%	64%	0%	96	96	-	74	74	-
2027	1,033	1,033	-	64%	64%	0%	96	96	-	74	74	-
2028	1,021	1,022	1	65%	65%	0%	93	93	-	74	74	-
2029	1,009	1,009	-	66%	66%	0%	93	93	-	74	74	-
2030	996	996	-	66%	66%	0%	89	89	-	74	74	-
2031	982	982	-	67%	67%	0%	89	89	-	74	74	-
2032	967	968	1	67%	67%	0%	87	87	-	74	74	-
2033	951	952	1	68%	68%	0%	87	87	-	74	74	-
2034	935	935	-	68%	68%	0%	85	85	-	74	74	-
2035	918	918	-	68%	68%	0%	85	85	-	74	74	-
2036	899	899	-	69%	69%	0%	83	83	-	74	74	-
2037	879	879	-	69%	69%	0%	83	83	-	74	74	-
2038	858	858	-	70%	70%	0%	82	82	-	74	74	-
2039	834	835	1	70%	70%	0%	82	82	-	74	74	-
2040	811	811	-	71%	71%	0%	103	103	-	96	96	-
2041	763	762	(1)	73%	73%	0%	118	118	-	111	111	-
2042	695	695	-	75%	75%	0%	121	121	-	115	115	-
2043	621	621	-	77%	77%	0%	125	125	-	118	118	-
2044	538	538	-	80%	80%	0%	128	128	-	121	121	-
2045	446	447	1	84%	84%	0%	132	132	-	126	126	-
2046	345	345	-	87%	87%	0%	132	132	-	126	126	-
2047	237	237	-	91%	91%	0%	132	132	-	126	126	-
2048	122	122	-	96%	96%	0%	131	131	-	126	126	-
2049	-	-	-	100%	100%	0%	6	6	-	-	-	-
2050	-	-	-	100%	100%	0%	5	5	-	-	-	-



**Kentucky Public Pensions Authority**  
**Exhibit 1-9**  
**KERS Hazardous Insurance Fund**  
**Actuarial Analysis of SB 342**  
**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)	\$ (150)	\$ 1	136%	135%	-1%	\$ -	\$ -	\$ -	0.0%	0.0%	0.0%
2022	(171)	(171)	-	139%	139%	0%	-	-	-	0.0%	0.0%	0.0%
2023	(192)	(191)	1	143%	143%	0%	-	-	-	0.0%	0.0%	0.0%
2024	(213)	(212)	1	147%	146%	-1%	-	-	-	0.0%	0.0%	0.0%
2025	(241)	(241)	-	152%	152%	0%	-	-	-	0.0%	0.0%	0.0%
2026	(252)	(252)	-	154%	154%	0%	-	-	-	0.0%	0.0%	0.0%
2027	(264)	(264)	-	156%	156%	0%	-	-	-	0.0%	0.0%	0.0%
2028	(276)	(276)	-	158%	158%	0%	-	-	-	0.0%	0.0%	0.0%
2029	(290)	(288)	2	160%	160%	0%	-	-	-	0.0%	0.0%	0.0%
2030	(303)	(303)	-	163%	163%	0%	-	-	-	0.0%	0.0%	0.0%
2031	(319)	(318)	1	166%	165%	-1%	-	-	-	0.0%	0.0%	0.0%
2032	(336)	(335)	1	169%	169%	0%	-	-	-	0.0%	0.0%	0.0%
2033	(353)	(352)	1	172%	172%	0%	-	-	-	0.0%	0.0%	0.0%
2034	(371)	(371)	-	175%	175%	0%	-	-	-	0.0%	0.0%	0.0%
2035	(392)	(391)	1	179%	179%	0%	-	-	-	0.0%	0.0%	0.0%
2036	(413)	(412)	1	183%	183%	0%	-	-	-	0.0%	0.0%	0.0%
2037	(436)	(434)	2	187%	187%	0%	-	-	-	0.0%	0.0%	0.0%
2038	(460)	(458)	2	191%	191%	0%	-	-	-	0.0%	0.0%	0.0%
2039	(485)	(484)	1	195%	195%	0%	-	-	-	0.0%	0.0%	0.0%
2040	(512)	(511)	1	199%	199%	0%	-	-	-	0.0%	0.0%	0.0%
2041	(541)	(539)	2	204%	204%	0%	-	-	-	0.0%	0.0%	0.0%
2042	(572)	(569)	3	209%	208%	-1%	-	-	-	0.0%	0.0%	0.0%
2043	(604)	(603)	1	213%	213%	0%	-	-	-	0.0%	0.0%	0.0%
2044	(638)	(637)	1	218%	218%	0%	-	-	-	0.0%	0.0%	0.0%
2045	(675)	(674)	1	223%	223%	0%	-	-	-	0.0%	0.0%	0.0%
2046	(714)	(713)	1	229%	229%	0%	-	-	-	0.0%	0.0%	0.0%
2047	(756)	(754)	2	235%	234%	-1%	-	-	-	0.0%	0.0%	0.0%
2048	(800)	(799)	1	241%	241%	0%	-	-	-	0.0%	0.0%	0.0%
2049	(847)	(845)	2	248%	248%	0%	-	-	-	0.0%	0.0%	0.0%
2050	(898)	(895)	3	255%	255%	0%	-	-	-	0.0%	0.0%	0.0%



**Kentucky Public Pensions Authority**  
**Exhibit 1-10**  
**SPRS Insurance Fund**  
**Actuarial Analysis of SB 342**  
**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	\$ 49	\$ -	82%	82%	0%	\$ 8	\$ 8	\$ -	18.1%	18.1%	0.0%
2022	40	40	-	86%	86%	0%	6	6	-	14.1%	14.1%	0.0%
2023	32	32	-	89%	89%	0%	6	6	-	14.1%	14.1%	0.0%
2024	24	24	-	92%	92%	0%	4	4	-	9.4%	9.4%	0.0%
2025	15	15	-	95%	95%	0%	4	4	-	9.4%	9.4%	0.0%
2026	14	14	-	95%	95%	0%	2	2	-	5.2%	5.2%	0.0%
2027	15	15	-	95%	95%	0%	2	2	-	5.2%	5.2%	0.0%
2028	15	15	-	95%	95%	0%	2	2	-	4.4%	4.4%	0.0%
2029	16	16	-	94%	94%	0%	2	2	-	4.4%	4.4%	0.0%
2030	17	17	-	94%	94%	0%	2	2	-	3.9%	3.9%	0.0%
2031	17	17	-	94%	94%	0%	2	2	-	3.9%	3.9%	0.0%
2032	17	17	-	94%	94%	0%	2	2	-	3.6%	3.6%	0.0%
2033	19	19	-	93%	93%	0%	2	2	-	3.6%	3.6%	0.0%
2034	19	19	-	93%	93%	0%	2	2	-	3.5%	3.5%	0.0%
2035	20	20	-	92%	92%	0%	2	2	-	3.5%	3.5%	0.0%
2036	22	22	-	92%	92%	0%	2	2	-	3.4%	3.4%	0.0%
2037	23	23	-	91%	91%	0%	2	2	-	3.4%	3.4%	0.0%
2038	24	24	-	91%	91%	0%	2	2	-	3.3%	3.3%	0.0%
2039	25	25	-	90%	90%	0%	2	2	-	3.3%	3.3%	0.0%
2040	26	26	-	90%	90%	0%	2	2	-	4.6%	4.6%	0.0%
2041	27	27	-	89%	89%	0%	2	2	-	4.6%	4.6%	0.0%
2042	28	28	-	89%	89%	0%	5	5	-	10.4%	10.4%	0.0%
2043	26	26	-	89%	89%	0%	5	5	-	10.4%	10.4%	0.0%
2044	25	25	-	90%	90%	0%	6	6	-	13.4%	13.4%	0.0%
2045	22	22	-	91%	91%	0%	6	6	-	13.4%	13.4%	0.0%
2046	18	18	-	93%	93%	0%	7	7	-	15.5%	15.5%	0.0%
2047	13	13	-	95%	95%	0%	7	7	-	15.5%	15.5%	0.0%
2048	8	8	-	97%	97%	0%	7	7	-	15.5%	15.5%	0.0%
2049	-	-	-	100%	100%	0%	2	2	-	3.4%	3.4%	0.0%
2050	-	-	-	100%	100%	0%	2	2	-	3.4%	3.4%	0.0%



**Actuarial Analysis of SB 342**  
**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 SB 342**  
**Current Plan**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (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 SB 342**  
**Current Plan**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (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 SB 342**  
**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 SB 342**  
**Current Plan**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (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 SB 342**  
**Current Plan**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (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 SB 342**  
**Current Plan**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (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 SB 342**  
**Current Plan**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (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 SB 342**  
**Current Plan**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Employer Contribution as % of Covered Payroll (Normal Cost) (9)	Employer Contribution (Amortization Cost) (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 SB 342**  
**Current Plan**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (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 SB 342**  
**Current Plan**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (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 SB 342**

## **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 SB 342**  
**Proposed Legislation**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (10)
2021	\$ 14,900	\$ 7,716	\$ 7,184	52%	\$ 576	\$ 126	\$ 2,529	22.78%	23.88%
2022	15,245	8,308	6,937	55%	604	129	2,579	23.41%	23.41%
2023	15,568	8,882	6,686	57%	586	132	2,631	22.27%	22.27%
2024	15,873	9,433	6,440	59%	573	134	2,684	21.35%	21.35%
2025	16,158	10,035	6,123	62%	560	137	2,737	20.47%	20.47%
2026	16,421	10,342	6,079	63%	542	140	2,792	19.43%	19.43%
2027	16,662	10,614	6,048	64%	548	142	2,848	19.23%	19.23%
2028	16,881	10,873	6,008	64%	553	145	2,905	19.04%	19.04%
2029	17,080	11,121	5,959	65%	559	148	2,963	18.87%	18.87%
2030	17,260	11,362	5,898	66%	565	151	3,022	18.71%	18.71%
2031	17,423	11,597	5,826	67%	572	154	3,083	18.57%	18.57%
2032	17,582	11,841	5,741	67%	580	157	3,144	18.44%	18.44%
2033	17,729	12,087	5,642	68%	588	160	3,207	18.34%	18.34%
2034	17,866	12,337	5,529	69%	597	164	3,271	18.24%	18.24%
2035	17,995	12,595	5,400	70%	605	167	3,337	18.14%	18.14%
2036	18,119	12,865	5,254	71%	615	170	3,403	18.07%	18.07%
2037	18,243	13,153	5,090	72%	625	174	3,471	18.01%	18.01%
2038	18,372	13,466	4,906	73%	636	177	3,541	17.95%	17.95%
2039	18,509	13,808	4,701	75%	647	181	3,612	17.91%	17.91%
2040	18,658	14,185	4,473	76%	651	184	3,684	17.66%	17.66%
2041	18,822	14,593	4,229	78%	697	188	3,758	18.54%	18.54%
2042	19,002	15,078	3,924	79%	742	192	3,833	19.35%	19.35%
2043	19,199	15,644	3,555	82%	783	195	3,909	20.02%	20.02%
2044	19,417	16,294	3,123	84%	824	199	3,988	20.66%	20.66%
2045	19,655	17,031	2,624	87%	874	203	4,067	21.48%	21.48%
2046	19,916	17,870	2,046	90%	891	207	4,149	21.47%	21.47%
2047	20,200	18,784	1,416	93%	909	212	4,232	21.47%	21.47%
2048	20,507	19,778	729	96%	926	216	4,316	21.46%	21.46%
2049	20,840	20,840	-	100%	160	220	4,403	3.64%	3.64%
2050	21,199	21,199	-	100%	163	225	4,491	3.64%	3.64%

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 changes in the participation date to applicable members.



**Kentucky Public Pensions Authority**  
**Exhibit 3-2**  
**CERS Hazardous Retirement Fund**  
**Actuarial Analysis of SB 342**  
**Proposed Legislation**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (10)
2021	\$ 5,630	\$ 2,629	\$ 3,001	47%	\$ 206	\$ 46	\$ 578	35.60%	43.23%
2022	5,785	2,834	2,951	49%	253	47	590	42.82%	42.82%
2023	5,930	3,067	2,863	52%	247	48	602	41.05%	41.05%
2024	6,068	3,292	2,776	54%	243	49	614	39.64%	39.64%
2025	6,199	3,538	2,661	57%	240	50	626	38.31%	38.31%
2026	6,325	3,686	2,639	58%	234	51	639	36.70%	36.70%
2027	6,445	3,825	2,620	59%	237	52	651	36.35%	36.35%
2028	6,561	3,964	2,597	60%	239	53	664	36.00%	36.00%
2029	6,672	4,104	2,568	62%	242	54	678	35.69%	35.69%
2030	6,782	4,248	2,534	63%	245	55	691	35.44%	35.44%
2031	6,894	4,398	2,496	64%	248	56	705	35.23%	35.23%
2032	7,009	4,558	2,451	65%	252	58	719	35.05%	35.05%
2033	7,126	4,728	2,398	66%	256	59	733	34.89%	34.89%
2034	7,248	4,908	2,340	68%	260	60	748	34.75%	34.75%
2035	7,372	5,100	2,272	69%	264	61	763	34.61%	34.61%
2036	7,500	5,302	2,198	71%	268	62	778	34.47%	34.47%
2037	7,629	5,516	2,113	72%	272	64	794	34.32%	34.32%
2038	7,757	5,738	2,019	74%	277	65	810	34.16%	34.16%
2039	7,884	5,969	1,915	76%	281	66	826	33.99%	33.99%
2040	8,009	6,209	1,800	78%	273	67	843	32.35%	32.35%
2041	8,135	6,448	1,687	79%	279	69	859	32.43%	32.43%
2042	8,261	6,702	1,559	81%	294	70	877	33.59%	33.59%
2043	8,391	6,982	1,409	83%	309	72	894	34.54%	34.54%
2044	8,523	7,289	1,234	86%	323	73	912	35.45%	35.45%
2045	8,658	7,622	1,036	88%	341	74	930	36.67%	36.67%
2046	8,793	7,987	806	91%	348	76	949	36.67%	36.67%
2047	8,932	8,374	558	94%	355	77	968	36.68%	36.68%
2048	9,073	8,786	287	97%	362	79	987	36.69%	36.69%
2049	9,216	9,216	-	100%	59	81	1,007	5.88%	5.88%
2050	9,362	9,362	-	100%	61	82	1,027	5.90%	5.90%

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 changes in the participation date to applicable members.



**Kentucky Public Pensions Authority**  
**Exhibit 3-3**  
**KERS Non-Hazardous Retirement Fund**  
**Actuarial Analysis of SB 342**  
**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	\$ 16,324	\$ 2,736	\$ 13,588	17%	\$ 1,027	\$ 67	\$ 1,349	7.90%	\$ 920
2022	16,322	3,053	13,269	19%	1,012	67	1,349	7.82%	906
2023	16,296	3,338	12,958	21%	1,012	67	1,349	7.82%	906
2024	16,249	3,612	12,637	22%	991	67	1,349	7.29%	893
2025	16,180	3,878	12,302	24%	991	67	1,349	7.29%	893
2026	16,091	4,059	12,032	25%	971	67	1,349	6.82%	879
2027	15,981	4,219	11,762	26%	971	67	1,349	6.82%	879
2028	15,850	4,372	11,478	28%	965	67	1,349	6.38%	879
2029	15,700	4,521	11,179	29%	965	67	1,349	6.38%	879
2030	15,532	4,668	10,864	30%	959	67	1,349	5.98%	879
2031	15,347	4,814	10,533	31%	959	67	1,349	5.98%	879
2032	15,154	4,969	10,185	33%	955	67	1,349	5.62%	879
2033	14,947	5,129	9,818	34%	955	67	1,349	5.62%	879
2034	14,729	5,297	9,432	36%	950	67	1,349	5.31%	879
2035	14,499	5,474	9,025	38%	950	67	1,349	5.31%	879
2036	14,262	5,665	8,597	40%	947	67	1,349	5.05%	879
2037	14,020	5,873	8,147	42%	947	67	1,349	5.05%	879
2038	13,777	6,103	7,674	44%	944	67	1,349	4.86%	879
2039	13,535	6,360	7,175	47%	944	67	1,349	4.86%	879
2040	13,297	6,647	6,650	50%	945	67	1,349	4.72%	881
2041	13,063	6,969	6,094	53%	975	67	1,349	4.72%	911
2042	12,835	7,355	5,480	57%	980	67	1,349	4.62%	917
2043	12,613	7,786	4,827	62%	987	67	1,349	4.62%	924
2044	12,397	8,266	4,131	67%	992	67	1,349	4.52%	931
2045	12,189	8,795	3,394	72%	999	67	1,349	4.52%	938
2046	11,989	9,379	2,610	78%	998	67	1,349	4.45%	938
2047	11,797	10,013	1,784	85%	998	67	1,349	4.45%	938
2048	11,614	10,699	915	92%	997	67	1,349	4.38%	938
2049	11,440	11,440	-	100%	59	67	1,349	4.36%	-
2050	11,278	11,278	-	100%	59	67	1,349	4.34%	-

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 changes in the participation date to applicable members.



**Kentucky Public Pensions Authority**  
**Exhibit 3-4**  
**KERS Hazardous Retirement Fund**  
**Actuarial Analysis of SB 342**  
**Proposed Legislation**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (10)
2021	\$ 1,296	\$ 782	\$ 514	60%	\$ 54	\$ 13	\$ 163	33.43%	33.43%
2022	1,326	848	478	64%	52	13	163	31.84%	31.84%
2023	1,353	907	446	67%	52	13	163	31.84%	29.94%
2024	1,379	966	413	70%	46	13	163	28.20%	28.20%
2025	1,403	1,026	377	73%	46	13	163	28.20%	26.69%
2026	1,427	1,060	367	74%	40	13	163	24.70%	24.70%
2027	1,448	1,088	360	75%	40	13	163	24.70%	24.45%
2028	1,468	1,115	353	76%	39	13	163	24.17%	24.17%
2029	1,487	1,140	347	77%	39	13	163	24.17%	23.97%
2030	1,505	1,166	339	78%	39	13	163	23.81%	23.81%
2031	1,524	1,192	332	78%	39	13	163	23.81%	23.70%
2032	1,545	1,221	324	79%	38	13	163	23.60%	23.60%
2033	1,566	1,251	315	80%	38	13	163	23.60%	23.54%
2034	1,589	1,282	307	81%	38	13	163	23.47%	23.47%
2035	1,613	1,315	298	82%	38	13	163	23.47%	23.41%
2036	1,637	1,349	288	82%	38	13	163	23.32%	23.32%
2037	1,662	1,384	278	83%	38	13	163	23.32%	23.24%
2038	1,686	1,420	266	84%	38	13	163	23.13%	23.13%
2039	1,710	1,456	254	85%	38	13	163	23.13%	23.03%
2040	1,735	1,493	242	86%	36	13	163	21.88%	21.88%
2041	1,759	1,528	231	87%	36	13	163	21.88%	24.55%
2042	1,783	1,565	218	88%	43	13	163	26.28%	26.28%
2043	1,807	1,610	197	89%	43	13	163	26.28%	27.70%
2044	1,832	1,657	175	90%	47	13	163	29.07%	29.07%
2045	1,857	1,709	148	92%	47	13	163	29.07%	30.81%
2046	1,882	1,763	119	94%	50	13	163	30.97%	30.97%
2047	1,905	1,822	83	96%	50	13	163	30.97%	31.00%
2048	1,928	1,882	46	98%	50	13	163	31.01%	31.01%
2049	1,951	1,951	-	100%	10	13	163	6.29%	6.29%
2050	1,972	1,972	-	100%	10	13	163	6.29%	6.29%

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 changes in the participation date to applicable members.



**Kentucky Public Pensions Authority**  
**Exhibit 3-5**  
**SPRS Retirement Fund**  
**Actuarial Analysis of SB 342**  
**Proposed Legislation**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (10)
2021	\$ 1,053	\$ 323	\$ 730	31%	\$ 58	\$ 4	\$ 45	127.99%	127.99%
2022	1,055	348	707	33%	57	4	45	126.42%	126.42%
2023	1,055	371	684	35%	57	4	45	126.42%	123.45%
2024	1,054	392	662	37%	55	4	45	120.73%	120.73%
2025	1,051	413	638	39%	55	4	45	120.73%	118.31%
2026	1,046	424	622	41%	52	4	45	115.40%	115.40%
2027	1,040	432	608	42%	52	4	45	115.40%	114.68%
2028	1,034	441	593	43%	52	4	45	113.94%	113.94%
2029	1,026	448	578	44%	52	4	45	113.94%	113.27%
2030	1,018	457	561	45%	51	4	45	112.63%	112.63%
2031	1,009	465	544	46%	51	4	45	112.63%	112.18%
2032	1,000	474	526	47%	51	4	45	111.77%	111.77%
2033	990	483	507	49%	51	4	45	111.77%	111.48%
2034	981	494	487	50%	50	4	45	111.21%	111.21%
2035	972	506	466	52%	50	4	45	111.21%	110.92%
2036	962	518	444	54%	50	4	45	110.55%	110.55%
2037	952	531	421	56%	50	4	45	110.55%	110.15%
2038	942	546	396	58%	50	4	45	109.68%	109.68%
2039	931	560	371	60%	50	4	45	109.68%	109.19%
2040	920	576	344	63%	49	4	45	107.80%	107.80%
2041	908	592	316	65%	49	4	45	107.80%	110.48%
2042	896	609	287	68%	51	4	45	112.44%	112.44%
2043	883	630	253	71%	51	4	45	112.44%	114.18%
2044	871	652	219	75%	52	4	45	115.75%	115.75%
2045	858	678	180	79%	52	4	45	115.75%	117.70%
2046	844	705	139	84%	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	117.69%	117.69%
2049	801	801	-	100%	4	4	45	7.77%	7.77%
2050	787	787	-	100%	4	4	45	7.76%	7.76%

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 changes in the participation date to applicable members.



**Kentucky Public Pensions Authority**  
**Exhibit 3-6**  
**CERS Non-Hazardous Insurance Fund**  
**Actuarial Analysis of SB 342**  
**Proposed Legislation**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (10)
2021	\$ 3,452	\$ 2,947	\$ 505	85%	\$ 104	\$ 14	\$ 2,499	4.17%	4.17%
2022	3,597	3,196	401	89%	86	15	2,549	3.39%	3.39%
2023	3,739	3,415	324	91%	76	16	2,600	2.94%	2.94%
2024	3,874	3,624	250	94%	68	18	2,652	2.55%	2.55%
2025	4,003	3,849	154	96%	60	19	2,706	2.20%	2.20%
2026	4,124	3,966	158	96%	49	20	2,760	1.76%	1.76%
2027	4,237	4,065	172	96%	46	22	2,815	1.63%	1.63%
2028	4,340	4,153	187	96%	43	23	2,871	1.50%	1.50%
2029	4,434	4,231	203	95%	40	24	2,929	1.36%	1.36%
2030	4,520	4,299	221	95%	37	26	2,987	1.24%	1.24%
2031	4,598	4,356	242	95%	35	27	3,047	1.14%	1.14%
2032	4,671	4,407	264	94%	33	28	3,108	1.05%	1.05%
2033	4,738	4,450	288	94%	31	29	3,170	0.97%	0.97%
2034	4,803	4,488	315	93%	29	30	3,233	0.91%	0.91%
2035	4,868	4,524	344	93%	28	31	3,298	0.86%	0.86%
2036	4,934	4,559	375	92%	27	32	3,364	0.80%	0.80%
2037	5,003	4,594	409	92%	26	33	3,431	0.77%	0.77%
2038	5,074	4,629	445	91%	26	34	3,500	0.75%	0.75%
2039	5,149	4,665	484	91%	26	35	3,570	0.72%	0.72%
2040	5,227	4,701	526	90%	63	36	3,641	1.74%	1.74%
2041	5,308	4,777	531	90%	90	37	3,714	2.42%	2.42%
2042	5,393	4,883	510	91%	102	38	3,788	2.70%	2.70%
2043	5,481	5,007	474	91%	114	38	3,864	2.94%	2.94%
2044	5,574	5,148	426	92%	124	39	3,941	3.15%	3.15%
2045	5,669	5,307	362	94%	138	40	4,020	3.44%	3.44%
2046	5,767	5,486	281	95%	141	41	4,101	3.44%	3.44%
2047	5,867	5,675	192	97%	144	42	4,183	3.44%	3.44%
2048	5,969	5,874	95	98%	146	43	4,266	3.42%	3.42%
2049	6,071	6,071	-	100%	37	43	4,352	0.84%	0.84%
2050	6,173	6,173	-	100%	37	44	4,439	0.83%	0.83%

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 changes in the participation date to applicable members.



**Kentucky Public Pensions Authority**  
**Exhibit 3-7**  
**CERS Hazardous Insurance Fund**  
**Actuarial Analysis of SB 342**  
**Proposed Legislation**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (10)
2021	\$ 1,752	\$ 1,476	\$ 276	84%	\$ 50	\$ 3	\$ 573	8.73%	8.73%
2022	1,798	1,578	220	88%	40	3	585	6.79%	6.79%
2023	1,837	1,660	177	90%	34	4	597	5.64%	5.64%
2024	1,869	1,731	138	93%	29	4	609	4.72%	4.72%
2025	1,893	1,808	85	96%	24	5	621	3.89%	3.89%
2026	1,913	1,829	84	96%	19	5	633	2.94%	2.94%
2027	1,929	1,841	88	95%	18	5	646	2.71%	2.71%
2028	1,940	1,847	93	95%	16	6	659	2.50%	2.50%
2029	1,946	1,848	98	95%	16	6	672	2.32%	2.32%
2030	1,951	1,847	104	95%	15	6	685	2.20%	2.20%
2031	1,953	1,842	111	94%	15	6	699	2.10%	2.10%
2032	1,953	1,836	117	94%	14	7	713	2.01%	2.01%
2033	1,954	1,829	125	94%	14	7	727	1.95%	1.95%
2034	1,955	1,822	133	93%	14	7	742	1.89%	1.89%
2035	1,957	1,815	142	93%	14	7	757	1.86%	1.86%
2036	1,962	1,811	151	92%	14	8	772	1.83%	1.83%
2037	1,971	1,810	161	92%	14	8	787	1.80%	1.80%
2038	1,984	1,811	173	91%	14	8	803	1.79%	1.79%
2039	1,999	1,815	184	91%	14	8	819	1.77%	1.77%
2040	2,018	1,822	196	90%	20	8	835	2.37%	2.37%
2041	2,041	1,838	203	90%	32	9	852	3.77%	3.77%
2042	2,068	1,868	200	90%	39	9	869	4.45%	4.45%
2043	2,098	1,910	188	91%	44	9	887	4.97%	4.97%
2044	2,131	1,960	171	92%	49	9	904	5.47%	5.47%
2045	2,166	2,019	147	93%	57	9	922	6.14%	6.14%
2046	2,203	2,088	115	95%	58	9	941	6.13%	6.13%
2047	2,241	2,162	79	97%	59	10	960	6.11%	6.11%
2048	2,279	2,239	40	98%	60	10	979	6.10%	6.10%
2049	2,317	2,317	-	100%	16	10	998	1.62%	1.62%
2050	2,355	2,355	-	100%	16	10	1,018	1.60%	1.60%

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 changes in the participation date to applicable members.



**Kentucky Public Pensions Authority**  
**Exhibit 3-8**  
**KERS Non-Hazardous Insurance Fund**  
**Actuarial Analysis of SB 342**  
**Proposed Legislation**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Employer Contribution as % of Covered Payroll (Normal Cost) (9)	Employer Contribution (Amortization Cost) (10)
2021	\$ 2,575	\$ 1,291	\$ 1,284	50%	\$ 132	\$ 6	\$ 1,339	2.20%	\$ 102
2022	2,642	1,422	1,220	54%	117	7	1,339	2.15%	88
2023	2,707	1,535	1,172	57%	117	7	1,339	2.15%	88
2024	2,765	1,646	1,119	60%	107	8	1,339	1.92%	81
2025	2,817	1,755	1,062	62%	107	8	1,339	1.92%	81
2026	2,861	1,817	1,044	64%	96	9	1,339	1.67%	74
2027	2,897	1,864	1,033	64%	96	9	1,339	1.67%	74
2028	2,924	1,902	1,022	65%	93	10	1,339	1.41%	74
2029	2,942	1,933	1,009	66%	93	10	1,339	1.41%	74
2030	2,951	1,955	996	66%	89	11	1,339	1.16%	74
2031	2,952	1,970	982	67%	89	11	1,339	1.16%	74
2032	2,947	1,979	968	67%	87	11	1,339	0.95%	74
2033	2,935	1,983	952	68%	87	12	1,339	0.95%	74
2034	2,919	1,984	935	68%	85	12	1,339	0.80%	74
2035	2,899	1,981	918	68%	85	12	1,339	0.80%	74
2036	2,877	1,978	899	69%	83	13	1,339	0.68%	74
2037	2,855	1,976	879	69%	83	13	1,339	0.68%	74
2038	2,833	1,975	858	70%	82	13	1,339	0.60%	74
2039	2,812	1,977	835	70%	82	13	1,339	0.60%	74
2040	2,791	1,980	811	71%	103	13	1,339	0.54%	96
2041	2,773	2,011	762	73%	118	13	1,339	0.54%	111
2042	2,756	2,061	695	75%	121	13	1,339	0.50%	115
2043	2,742	2,121	621	77%	125	13	1,339	0.50%	118
2044	2,730	2,192	538	80%	128	13	1,339	0.47%	121
2045	2,720	2,273	447	84%	132	13	1,339	0.47%	126
2046	2,710	2,365	345	87%	132	13	1,339	0.44%	126
2047	2,700	2,463	237	91%	132	13	1,339	0.44%	126
2048	2,690	2,568	122	96%	131	13	1,339	0.43%	126
2049	2,678	2,678	-	100%	6	13	1,339	0.42%	-
2050	2,665	2,665	-	100%	5	13	1,339	0.41%	-

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 changes in the participation date to applicable members.





**Kentucky Public Pensions Authority**  
**Exhibit 3-9**  
**KERS Hazardous Insurance Fund**  
**Actuarial Analysis of SB 342**  
**Proposed Legislation**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (10)
2021	\$ 425	\$ 575	\$ (150)	135%	\$ -	\$ 1	\$ 162	0.00%	0.00%
2022	437	608	(171)	139%	-	1	162	0.00%	0.00%
2023	448	639	(191)	143%	-	1	162	0.00%	0.00%
2024	457	669	(212)	146%	-	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	483	771	(288)	160%	-	1	162	0.00%	0.00%
2030	485	788	(303)	163%	-	2	162	0.00%	0.00%
2031	487	805	(318)	165%	-	2	162	0.00%	0.00%
2032	489	824	(335)	169%	-	2	162	0.00%	0.00%
2033	491	843	(352)	172%	-	2	162	0.00%	0.00%
2034	493	864	(371)	175%	-	2	162	0.00%	0.00%
2035	495	886	(391)	179%	-	2	162	0.00%	0.00%
2036	498	910	(412)	183%	-	2	162	0.00%	0.00%
2037	502	936	(434)	187%	-	2	162	0.00%	0.00%
2038	506	964	(458)	191%	-	2	162	0.00%	0.00%
2039	510	994	(484)	195%	-	2	162	0.00%	0.00%
2040	515	1,026	(511)	199%	-	2	162	0.00%	0.00%
2041	521	1,060	(539)	204%	-	2	162	0.00%	0.00%
2042	527	1,096	(569)	208%	-	2	162	0.00%	0.00%
2043	533	1,136	(603)	213%	-	2	162	0.00%	0.00%
2044	540	1,177	(637)	218%	-	2	162	0.00%	0.00%
2045	547	1,221	(674)	223%	-	2	162	0.00%	0.00%
2046	554	1,267	(713)	229%	-	2	162	0.00%	0.00%
2047	561	1,315	(754)	234%	-	2	162	0.00%	0.00%
2048	567	1,366	(799)	241%	-	2	162	0.00%	0.00%
2049	573	1,418	(845)	248%	-	2	162	0.00%	0.00%
2050	579	1,474	(895)	255%	-	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 changes in the participation date to applicable members.



**Kentucky Public Pensions Authority**  
**Exhibit 3-10**  
**SPRS Insurance Fund**  
**Actuarial Analysis of SB 342**  
**Proposed Legislation**  
**(\$ in Millions)**

Fiscal Year Beginning July 1, (1)	Actuarial Accrued Liability (2)	Actuarial Value of Assets (3)	Unfunded Actuarial Accrued Liability (4)	Funded Ratio (3) / (2) (5)	Total Employer Contribution (6)	Member Contribution (7)	Covered Payroll (8)	Total Employer Contribution as % of Covered Payroll (9)	Employer Actuarial Determined Contribution Rate (10)
2021	\$ 272	\$ 223	\$ 49	82%	\$ 8	\$ -	\$ 45	18.07%	18.07%
2022	278	238	40	86%	6	-	45	14.12%	14.12%
2023	282	250	32	89%	6	-	45	14.12%	11.66%
2024	285	261	24	92%	4	-	45	9.43%	9.43%
2025	286	271	15	95%	4	-	45	9.43%	7.55%
2026	287	273	14	95%	2	-	45	5.18%	5.18%
2027	287	272	15	95%	2	-	45	5.18%	4.76%
2028	286	271	15	95%	2	-	45	4.40%	4.40%
2029	284	268	16	94%	2	-	45	4.40%	4.13%
2030	282	265	17	94%	2	-	45	3.89%	3.89%
2031	279	262	17	94%	2	-	45	3.89%	3.74%
2032	275	258	17	94%	2	-	45	3.60%	3.60%
2033	272	253	19	93%	2	-	45	3.60%	3.52%
2034	268	249	19	93%	2	-	45	3.47%	3.47%
2035	264	244	20	92%	2	-	45	3.47%	3.42%
2036	261	239	22	92%	2	-	45	3.38%	3.38%
2037	258	235	23	91%	2	-	45	3.38%	3.36%
2038	255	231	24	91%	2	-	45	3.34%	3.34%
2039	252	227	25	90%	2	-	45	3.34%	3.32%
2040	250	224	26	90%	2	-	45	4.57%	4.57%
2041	248	221	27	89%	2	-	45	4.57%	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%	15.49%
2048	246	238	8	97%	7	-	45	15.50%	15.50%
2049	246	246	-	100%	2	-	45	3.38%	3.38%
2050	246	246	-	100%	2	-	45	3.36%	3.36%

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 changes in the participation date to applicable members.

