Actuarial Analysis Summary

Statement 1 of 1

BR or Bill Ref.	HB 259 (22 RS HB 259/SCS 2)	**Actuarial Analysis Conducted For:**	
Date:	3/30/2022	☐ KERS NH ☐ KERS Haz ☒ SPRS ☐ TRS	
Actuary:	GRS	☐ 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:

Sections two through ten of the proposed legislation will increase the benefits in the Tier 3 cash balance plan by converting unused sick leave into cash balance pay credits. We have scored the benefit change as making the System less actuarially sound because the change will significantly increase benefits in a System that is currently 31% funded as of June 30, 2021. The actuarially determined contribution rate for the fiscal year ending June 30, 2023 will increase by 2.01% of pay for the SPRS fund if this legislation is enacted. **However, as long as the actuarially determined contribution rates are consistently paid by the State each future year, then we do not believe this benefit change will impact the current actuarial soundness of the funds.**

Section eight of the proposed legislation provides that the cost associated with the revised sick leave provisions for Tier 3 members be identified separately in the SPRS employer contribution rate; therefore, it has been requested the analysis provided herein only provide the actuarial analysis associated with Sections two through ten. **However, section one of this proposed legislation will also materially increase the salary for State Troopers, which will also increase the SPRS contribution rate. The analysis provided in this letter does not include the liability or contribution impact associated with these salary increases.**

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					
	SPRS*		N/A		N/A	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected Employer Cost* ($ in Millions)						
30-Yr Nominal $	$1,572	$1,637				
30-Yr Net Present Value $	$836	$864				
Proj. Normal Cost for New Hire	9.96% of pay	16.03% 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					
	SPRS*		N/A		N/A	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected UAL ($ in Millions)						
Baseline (Year 1)	$730	$733				
5 Years	$638	$641				
10 Years	$561	$564				
20 Years	$344	$346				
30 Years	$0	$0				
Projected Funding Ratio (%)						
Baseline (Year 1)	31%	31%				
5 Years	39%	39%				
10 Years	45%	46%				
20 Years	63%	64%				
30 Years	100%	100%				

	Retiree Health Plan					
	SPRS*		N/A		N/A	
	Current	Proposed	Current	Proposed	Current	Proposed
Projected UAL ($ in Millions)						
Baseline (Year 1)	$49	$49				
5 Years	$15	$15				
10 Years	$17	$17				
20 Years	$26	$26				
30 Years	$0	$0				
Projected Funding Ratio (%)						
Baseline (Year 1)	82%	82%				
5 Years	95%	95%				
10 Years	94%	94%				
20 Years	90%	90%				
30 Years	100%	100%				

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

Section III: Brief Summary of Bill

Sections two through ten of the proposed legislation converts unused sick leave in excess of 480 hours (i.e. 60 days) to cash balance pay credits at the end of each fiscal year for members earning benefits in the SPRS Tier 3 cash balance plan. Similarly, the proposed legislation will also convert the member's balance of unused sick leave at to cash balance pay credits upon termination of employment.

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:

There were no assumption changes from that used to prepare the June 30, 2021 actuarial valuation. However, since the conversion of unused sick leave to cash balance pay credits is a new benefit, we were required to make an assumption of the anticipated average conversion of unused sick leave to cash balance pay credit for members earning Tier 3 retirement benefits.

We have assumed the proposed plan change will result, on average, an additional 7.5% of pay in employer pay credit due to the conversion of unused sick leave after the member attains five years of service. This analysis also assumes that a member will have 480 hours of unused sick leave to convert to pay credit at the time of their retirement. These assumptions were determined based on information we received regarding the annual leave and sick leave benefits provided to members in the System.

Section V: Comment from Actuary

Unused sick leave balances will vary from member to member. This legislation will provide a larger retirement benefit to members who minimally utilize their sick leave benefit while employed. On the other hand, this proposed change will not provide a material increase in retirement benefits for members that utilize their sick leave benefits consistently from year to year while active and do not have large unused sick leave balances left at retirement. Based on our analysis of the expected unused sick leave, we expect that a member's Tier 3 cash balance account will accumulate, on average, about 50% more than the current benefit as the unused sick leave conversion credits are expected to be in the comparative range of the 8.0% of pay member contribution and the 7.5% of pay employer pay credit.

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

Please see attached.

P: 469.524.0000 | www.grsconsulting.com

March 30, 2022

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

Re: Actuarial Analysis of Proposed Legislation HB 259 and its Financial Impact on the State Police Retirement System

Dear Mr. Eager:

We have reviewed the proposed legislation HB 259 (22 RS HB 259/SCS 2) and the purpose of this letter is to communicate the actuarial analysis of this proposed legislation in regards to the State Police Retirement System (SPRS).

Summary of Provisions of Proposed Legislation and Cost Impact

Sections two through ten of the proposed legislation convert unused sick leave in excess of 480 hours (i.e. 60 days) to cash balance pay credits at the end of each fiscal year for members earning benefits in the SPRS Tier 3 cash balance plan. Similarly, the proposed legislation will also convert the member's balance of unused sick leave to cash balance pay credits upon termination of employment. There is no change in benefits for members earning Tier 1 and Tier 2 benefits.

Section eight of the proposed legislation provides that the cost associated with the revised sick leave provisions for Tier 3 members be identified separately in the SPRS employer contribution rate; therefore, it has been requested the analysis provided herein only provide the actuarial analysis associated with Sections two through ten. **However, section one of this proposed legislation will also materially increase the salary for State Troopers, which will also increase the SPRS contribution rate. The analysis provided in this letter does not include the liability or contribution impact associated with these salary increases.** The impact of sections two through eight on the required employer contributions for the SPRS is provided below.

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

Plan	Current based on June 30, 2021 Valuation	Proposed Legislation	Impact on Contribution Rate	Increase in Annual Contribution
Pension	126.40%	128.41%	2.01%	$911,000
Insurance	14.11%	14.11%	0.00%	0
Total	140.51%	142.52%	2.01%	$911,000

In addition to an immediate increase in the employer contribution requirement, the proposed legislation results in an increase in the long-term cost of SPRS. This long-term cost is greater than the increase in the FYE2023 contribution rate because the current active population is still comprised of a large percentage of Tier 1 members. As the number of members earnings Tier 3 benefits increases (218 of 775 active members are earning Tier 3 benefits as of June 30, 2021), employer contribution rates will increase by 6% of pay, or the increase in the Tier 3 pension employer normal cost rate from the current 7.28% of pay to 13.35% of pay if this proposed legislation is enacted.

Comments Regarding the Proposed Legislation

Unused sick leave balances will vary from member to member. This legislation will provide a larger retirement benefit to members who minimally utilize their sick leave benefit while employed. On the other hand, this proposed change will not provide a material increase in retirement benefits for members that utilize their sick leave benefits consistently from year to year while active and do not have large unused sick leave balances left at retirement. Based on our analysis of the expected unused sick leave, we expect that a member's Tier 3 cash balance account will accumulate, on average, about 50% more than the current benefit as the unused sick leave conversion credits are expected to be in the comparative range of the 8.0% of pay member contribution and the 7.5% of pay employer pay credit.

There are no material changes in insurance plan provisions due to this proposed legislation. The change in retirement benefits may slightly change the retirement pattern, which could impact the cost of the insurance funds. However, we do not believe this to have a measurable impact on the liabilities or contribution requirements of the insurance funds at this time.

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.

For purposes of this analysis we have assumed the proposed plan change will result, on average, an additional 7.5% of pay in employer pay credit due to the conversion of unused sick leave after the member attains five years of service. This analysis also assumes that a member will have 480 hours of unused sick leave to convert to pay credit at the time of their retirement. These assumptions were determined based on information we received regarding the annual leave and sick leave benefits provided to members in the System.

Closing

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,

Daniel J. White, FSA, EA, MAAA

Janie Shaw, ASA, EA, MAAA

Enclosures

Actuarial Analysis of HB 259
Section 1.
Comparison of Fiscal Impact
Current Plan vs. Proposed Changes

Kentucky Public Pensions Authority
Exhibit 1-1
SPRS Retirement Fund
Actuarial Analysis of HB 259
Comparison of Current Plan and Proposed Legislation
($ in Millions)

Fiscal Year Beginning	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions			Employer Contribution Rate		
July 1,	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	$ 733	$ 3	31%	31%	0%	$ 58	$ 58	$ -	128.0%	128.0%	0.0%
2022	707	711	4	33%	33%	0%	57	58	1	126.4%	128.4%	2.0%
2023	684	687	3	35%	35%	0%	57	58	1	126.4%	128.4%	2.0%
2024	662	665	3	37%	37%	0%	55	56	1	120.7%	123.4%	2.7%
2025	638	641	3	39%	39%	0%	55	56	1	120.7%	123.4%	2.7%
2026	622	625	3	41%	41%	0%	52	54	2	115.4%	118.7%	3.3%
2027	608	611	3	42%	42%	0%	52	54	2	115.4%	118.7%	3.3%
2028	593	597	4	43%	43%	0%	52	53	1	113.9%	117.9%	4.0%
2029	578	581	3	44%	44%	0%	52	53	1	113.9%	117.9%	4.0%
2030	561	564	3	45%	46%	1%	51	53	2	112.6%	117.1%	4.5%
2031	544	547	3	46%	47%	1%	51	53	2	112.6%	117.1%	4.5%
2032	526	529	3	47%	48%	1%	51	53	2	111.8%	116.6%	4.8%
2033	507	510	3	49%	50%	1%	51	53	2	111.8%	116.6%	4.8%
2034	487	490	3	50%	51%	1%	50	53	3	111.2%	116.2%	5.0%
2035	466	469	3	52%	53%	1%	50	53	3	111.2%	116.2%	5.0%
2036	444	446	2	54%	55%	1%	50	53	3	110.5%	115.9%	5.4%
2037	421	424	3	56%	57%	1%	50	53	3	110.5%	115.9%	5.4%
2038	397	399	2	58%	60%	2%	50	52	2	109.7%	115.4%	5.7%
2039	371	373	2	60%	62%	2%	50	52	2	109.7%	115.4%	5.7%
2040	344	346	2	63%	64%	1%	49	52	3	107.8%	114.0%	6.2%
2041	316	317	1	65%	67%	2%	49	52	3	107.8%	114.0%	6.2%
2042	287	288	1	68%	70%	2%	51	54	3	112.5%	118.4%	5.9%
2043	253	254	1	71%	73%	2%	51	54	3	112.5%	118.4%	5.9%
2044	219	219	-	75%	77%	2%	52	55	3	115.8%	122.0%	6.2%
2045	179	180	1	79%	81%	2%	52	55	3	115.8%	122.0%	6.2%
2046	140	140	-	83%	85%	2%	53	56	3	117.8%	124.1%	6.3%
2047	96	96	-	88%	90%	2%	53	56	3	117.8%	124.1%	6.3%
2048	50	51	1	94%	94%	0%	53	56	3	117.7%	124.1%	6.4%
2049	-	-	-	100%	100%	0%	4	6	2	7.8%	14.1%	6.3%
2050	-	-	-	100%	100%	0%	4	6	2	7.8%	14.1%	6.3%

Kentucky Public Pensions Authority
Exhibit 1-2
SPRS Insurance Fund
Actuarial Analysis of HB 259
Comparison of Current Plan and Proposed Legislation
($ in Millions)

Fiscal Year Beginning	Unfunded Actuarial Accrued Liability			Funded Ratio			Employer Contributions			Employer Contribution Rate		
July 1,	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 HB 259
Section 2.
Projected Cost of the Retirement and Insurance
Current Plan

Kentucky Public Pensions Authority
Exhibit 2-1
SPRS Retirement Fund
Actuarial Analysis of HB 259
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 2-2
SPRS Insurance Fund
Actuarial Analysis of HB 259
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 HB 259
Section 3.
Projected Cost of the Retirement and Insurance Proposed Legislation

Kentucky Public Pensions Authority
Exhibit 3-1
SPRS Retirement Fund
Actuarial Analysis of HB 259
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	$ 1,056	$ 323	$ 733	31%	$ 58	$ 4	$ 45	127.99%	127.99%
2022	1,059	348	711	33%	58	4	45	128.41%	128.41%
2023	1,059	372	687	35%	58	4	45	128.41%	125.82%
2024	1,059	394	665	37%	56	4	45	123.41%	123.41%
2025	1,057	416	641	39%	56	4	45	123.41%	121.31%
2026	1,054	429	625	41%	54	4	45	118.74%	118.74%
2027	1,050	439	611	42%	54	4	45	118.74%	118.31%
2028	1,046	449	597	43%	53	4	45	117.85%	117.85%
2029	1,040	459	581	44%	53	4	45	117.85%	117.45%
2030	1,034	470	564	46%	53	4	45	117.07%	117.07%
2031	1,028	481	547	47%	53	4	45	117.07%	116.79%
2032	1,022	493	529	48%	53	4	45	116.55%	116.55%
2033	1,015	505	510	50%	53	4	45	116.55%	116.37%
2034	1,009	519	490	51%	53	4	45	116.20%	116.20%
2035	1,003	534	469	53%	53	4	45	116.20%	116.05%
2036	997	551	446	55%	53	4	45	115.85%	115.85%
2037	992	568	424	57%	53	4	45	115.85%	115.66%
2038	986	587	399	60%	52	4	45	115.43%	115.43%
2039	979	606	373	62%	52	4	45	115.43%	115.18%
2040	973	627	346	64%	52	4	45	114.02%	114.02%
2041	966	649	317	67%	52	4	45	114.02%	116.36%
2042	959	671	288	70%	54	4	45	118.43%	118.43%
2043	952	698	254	73%	54	4	45	118.43%	120.26%
2044	945	726	219	77%	55	4	45	121.95%	121.95%
2045	937	757	180	81%	55	4	45	121.95%	123.94%
2046	929	789	140	85%	56	4	45	124.06%	124.06%
2047	920	824	96	90%	56	4	45	124.06%	124.07%
2048	912	861	51	94%	56	4	45	124.06%	124.06%
2049	902	902	-	100%	6	4	45	14.13%	14.13%
2050	893	893	-	100%	6	4	45	14.13%	14.13%

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 changes in sections two through ten of HB 259.
Section one of this proposed legislation will also materially increase the salary for State Troopers, which will also increase the SPRS contribution rate.
The analysis provided above does not include the impact associated with these salary increases.

Kentucky Public Pensions Authority
Exhibit 3-2
SPRS Insurance Fund
Actuarial Analysis of HB 259
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	14.11%	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:

There are no material changes in insurance plan provisions due to this proposed legislation. The change in retirement benefits may slightly change the retirement pattern, which could impact the cost of the insurance funds. However, we do not believe this to have a measurable impact on the liabilities or contribution requirements of the insurance funds at this time.