Actuarial Analysis Summary –Senate Committee Substitute 1 to HB 8 (Providing a Reduced Cessation Cost for Northern Kentucky University)

BR or Bill Ref.	HB 8 / SCS 1 AA Statement 1 of 1	**Actuarial Analysis Conducted For:**
Date:	March 9, 2021	■ KERS NH ❑ KERS Haz ❑ SPRS ❑ TRS
Actuary:	GRS	❑ CERS NH ❑ CERS Haz ❑ LRP ❑ JRP

Section I: Executive Summary

This summary only addresses the amendment to HB 8 that provides a reduction in the cessation cost for universities (Sections 3 and 4 of the proposed legislation). Please see our prior Actuarial Analysis of HB 8 GA (BR 424) dated December 23, 2020 for comments related to the remaining sections of the proposed legislation, where we provided the opinion that the retirement system would be more actuarially sound under the proposed funding methodology changes.

It is of the opinion of the actuary that the proposed change in Senate Committee Substitute 1 (SCS 1), would make the affected state-administered retirement system(s) actuarially less sound, compared to the original and GA version of HB 8:

❑ MORE SOUND ■ LESS SOUND ❑ NO IMPACT

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

The proposed Senate Committee Substitute 1 (SCS 1) provides university agencies a significant reduction in their cost to cease participation in the KERS Non-Hazardous System under the cessation window that was enacted by HB 1 (2019 Special Session). The deadline for universities to make their HB 1 election was December, 31, 2020, and Northern Kentucky University (NKU) was the only university to cease under this option. As a result, other universities do not benefit from the proposed amendment. This provision violates financial economic principals as it provides NKU a cessation cost that is calculated using an interest rate on an on-going basis (i.e. 5.25%), which is inappropriate for use in determining their cessation liability.

Additionally, and more significantly, if this provision is enacted, the System is exposed to significant financial risk that the other 106 quasi-governmental employers will demand the legislators provide the same favorable provision to them as they make their HB 1 election by their April 30, 2021 deadline.

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.

The proposed amendment to HB 8 will reduce NKU's cessation cost by approximately $73 million, from a current estimated cost of $277 million to an estimated cost of $204 million. The reduction in NKU's cost will result in a collective $6.4 million increase in annual contributions for the remaining participating employers in the System, including the State, for each of the next 20 years.

Section II: Financial Projections

	Combined Pension and Retiree Health Plan					
	KERS NH		N/A		N/A	
	Current[1]	Proposed[2]	Current	Proposed	Current	Proposed
Projected Employer Cost ($Millions) *						
30-Yr Nominal	**$32,794**	**$32,850**	N/A	N/A	N/A	N/A
30-Yr Net Present Value	**$16,998**	**$17,003**	N/A	N/A	N/A	N/A
Proj. Normal Cost for New Hire	**4.0% of pay**	**4.0% of pay**	N/A	N/A	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 taking into account employee contributions.*

	Pension Plan					
	KERS NH		N/A		N/A	
	Current[1]	Proposed[2]	Current	Proposed	Current	Proposed
Projected UAL ($Millions)						
Baseline (Year 1)	**$14,026**	**$14,026**	N/A	N/A	N/A	N/A
5 Years	**$13,035**	**$13,093**	N/A	N/A	N/A	N/A
10 Years	**$11,608**	**$11,654**	N/A	N/A	N/A	N/A
20 Years	**$7,316**	**$7,326**	N/A	N/A	N/A	N/A
30 Years	**$0**	**$0**	N/A	N/A	N/A	N/A
Projected Funding Ratio (%)						
Baseline (Year 1)	**14%**	**14%**	N/A	N/A	N/A	N/A
5 Years	**20%**	**20%**	N/A	N/A	N/A	N/A
10 Years	**26%**	**26%**	N/A	N/A	N/A	N/A
20 Years	**46%**	**46%**	N/A	N/A	N/A	N/A
30 Years	**100%**	**100%**	N/A	N/A	N/A	N/A

	Retiree Health Plan					
	KERS NH		N/A		N/A	
	Current[1]	Proposed[2]	Current	Proposed	Current	Proposed
Projected UAL ($Millions)						
Baseline (Year 1)	**$1,469**	**$1,469**	N/A	N/A	N/A	N/A
5 Years	**$1,393**	**$1,407**	N/A	N/A	N/A	N/A
10 Years	**$1,278**	**$1,289**	N/A	N/A	N/A	N/A
20 Years	**$916**	**$919**	N/A	N/A	N/A	N/A
30 Years	**$0**	**$0**	N/A	N/A	N/A	N/A
Projected Funding Ratio (%)						
Baseline (Year 1)	**43%**	**43%**	N/A	N/A	N/A	N/A
5 Years	**51%**	**50%**	N/A	N/A	N/A	N/A
10 Years	**57%**	**57%**	N/A	N/A	N/A	N/A
20 Years	**68%**	**68%**	N/A	N/A	N/A	N/A
30 Years	**100%**	**100%**	N/A	N/A	N/A	N/A

[1] Projected cost with NKU contributing a cessation liability cost based on a 3.50% interest rate.

[2] Projected cost with NKU contributing a cessation liability cost based on a 5.25% interest rate.

Section III: Brief Summary of Bill

The original version of HB 8 provides a fixed allocation method for collecting the amortization cost from participating employers in the System. We previously provided an analysis of HB 8 (BR 424) dated December 23, 2020, where we gave the opinion that the proposed legislation would be more actuarially sound.

However, the proposed Senate Committee Substitute 1 (SCS 1) provides that Northern Kentucky University's cost to cease participation in the KERS Non-Hazardous System is reduced by an estimated $73 million, from the current estimated cost of $277 million to an estimated $204 million under this HB 8 amendment, by imposing the use of a higher interest rate for the cessation calculation (i.e. 3.50% as currently required versus 5.25% in the proposed SCS 1).

If enacted, NKU's cessation cost will decrease by $77 million and the collective contribution requirement for the remaining participating employers in the System, including the State, will increase by $6.4 million per year for the next 20 years.

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:

Amendment SCS 1 to HB 8 requires NKU's cessation liability be calculated using the 5.25% valuation interest rate versus the current 3.50% specified by the cessation window provided to NKU under HB 1.

Section V: Comment from Actuary

HB 1 (2019 Special Session) provides universities and quasi-governmental employees a window to elect to cease participation in the KERS Non-Hazardous System under various methods and payment options that are more favorable to the employers than the provisions previously available. The universities were required to make their HB 1 cessation election by December 31, 2020 and only NKU elected to cease their participation in the System. NKU elected a soft-freeze method (i.e. Tier 1 and Tier 2 members would continue to accrue service in the System) and elected to pay their cessation cost in a lump-sum payment. HB 1 already provided NKU a $28 million reduction in their cessation cost compared to the current cessation provisions provided in KRS Section 61.522. Current cessation provisions require the cessation cost calculation to use a discount rate based on the 30-Year Treasury Rates, whereas HB1 set a floor on the discount rate at 3.50% for the option chosen by NKU. The use of a higher discount rate will decrease NKU's cessation cost by $28 million.

This amendment specifies that cessation cost for a university under the option chosen by NKU is to be determined using the pension valuation interest rate assumption of 5.25%, which results in an additional $73 million reduction in NKU's cessation cost. Unless the State immediately makes a contribution to the System to offset NKU's reduced contribution, then the remaining participating

employers in the System, including the State, will be required to contribute the difference, or about $6.4 million annually, payable for 20 years.

We are concerned about this amendment for two reasons. First, if this provision is enacted then the Retirement System is exposed to significant financial risk that the other 106 quasi-governmental employers will demand the legislators provide the same favorable provisions to them before they make their HB 1 election by their April 30, 2021 deadline, resulting in significant additional financial risk to the System. Secondly, this provision violates financial economic principals as it provides NKU a cessation cost that is calculated an interest rate for use on an on-going basis (i.e. 5.25%) which is inappropriate for use in determining a cessation liability.

Rather, if the legislature wants to reduce NKU's cessation cost, then we recommend that the State make an appropriation directly to NKU for the sole purpose of subsidizing their required cessation contribution to the System so that the Retirement System receives the full cessation cost related to NKU's withdrawal their participation in KRS.

The KERS Non-Hazardous System is only 14% funded and it is critical the System receives the appropriate funding each and every year.

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

Please see attached.

P: 469.524.0000 | www.grsconsulting.com

March 9, 2021

Mr. David Eager
Executive Director
Kentucky Retirement Systems
1260 Louisville Road
Frankfort, KY 40601

Re: Actuarial Analysis of Proposed Legislation HB 8 / SCS 1 and its Financial Impact on the Kentucky Employees Retirement System (Non-Hazardous funds)

Dear Mr. Eager:

We have reviewed the proposed legislation HB 8 / SCS 1 and the purpose of this letter is to communicate the actuarial analysis of this proposed legislation on the KERS Non-Hazardous System. **This letter provides only the actuarial analysis related to Senate Committee Substitute 1 that provides Northern Kentucky University (NKU) a significant reduction in the cost to cease participation in the KERS Non-Hazardous System (Section 3 and Section 4 of the proposed legislation).**

Please see our Actuarial Analysis dated December 23, 2020 for comments related to the remaining sections of the proposed legislation. Additional administrative language and employer contribution subsidy language has been added to the proposed legislation since our Actuarial Analysis was provided in December. This language does not have an actuarial impact on the System as a whole, as it is our understanding that the provisions in Section 7 of the proposed legislation, which address the appropriations and subsidies that are provided by the state to eligible employers to assist their pension cost, are not intended to reduce the contributions that these eligible employers are required to pay to the System.

Provisions of Proposed Legislation and Summary of Cost Impact

The proposed amendment to HB 8 provides university agencies a significant reduction in their cost to cease participation in the KERS Non-Hazardous System under the cessation window that was enacted by HB 1 (2019 Special Session). However, the deadline for universities to make their HB 1 election was December, 31, 2020, and NKU was the only university to cease under this option. As a result, other universities do not benefit from the proposed amendment. This provision violates financial economic principals as it provides NKU a cessation cost that is calculated using an interest rate on an on-going basis (i.e. 5.25%), which is inappropriate for use in determining cessation liabilities. **Additionally, and more significantly, if this provision is enacted, the System is exposed to significant financial risk that the other 106 quasi-governmental employers will demand the legislators provide the same favorable provision to them as they make their HB 1 election by the April 30, 2021 deadline.**

The proposed amendment to HB 8 will reduce NKU's cessation cost by approximately $73 million, from a current estimated cost of $277 million to an estimated cost of $204 million. This results in an annual increase of $6.4 million to the contribution requirement, payable for 20 years, for the remaining participating employers in the System, including the State.

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 funding, as well as a summary of the fiscal impact of the proposed legislation.

Comments regarding the Proposed Legislation

HB 1 (2019 Special Session) provides universities and quasi-governmental employees a window to elect to cease participation in the KERS Non-Hazardous System under various methods and payment options that are more favorable to the employers than the provisions previously available. The universities were required to make their HB 1 cessation election by December 31, 2020 and only NKU elected to cease their participation in the System. NKU elected a soft-freeze method (i.e. Tier 1 and Tier 2 members would continue to accrue service in the System) and elected to pay their cessation cost in a lump-sum payment. HB 1 already provided NKU a $28 million reduction in their cessation cost compared to the current cessation provisions provided in KRS Section 61.522. Current cessation provisions require the cessation cost calculation to use a discount rate based on the 30-Year Treasury Rates, whereas HB1 set a floor on the discount rate at 3.50% for the option chosen by NKU. The use of a higher discount rate decreased the cost paid by NKU to the System by $28 million.

This amendment specifies that cessation cost for a university under the option chosen by NKU is to be determined using the pension valuation interest rate assumption of 5.25%, which results in an additional $73 million reduction in NKU's cessation cost. Unless the State immediately makes a contribution to the System to offset NKU's reduced contribution, then the remaining participating employers in the System, including the State, will be required to contribute the difference, or about $6.4 million annually, payable for 20 years.

We are concerned about this amendment for two reasons. First, if this provision is enacted then the Retirement System is exposed to significant financial risk that the other 106 quasi-governmental employers will demand the legislators provide the same favorable provisions to them before they make their HB 1 election by their April 30, 2021 deadline, resulting in significant additional financial risk to the System.

Secondly, this provision violates financial economic principals as it provides NKU a cessation cost that is calculated at an interest rate for use on an on-going basis (i.e. 5.25%), which is inappropriate for use in determining cessation liabilities. When an agency ceases participation in the System, their cost payable to the Retirement System is a fixed amount. If the Retirement System experiences future adverse experience related to that agency's employees (i.e. employees living longer than expected or investment returns being lower than expected), the Retirement System cannot collect additional contributions from the ceased agency and the additional cost is left to be paid by the remaining employers. Therefore, it is recommended to charge a risk premium when an agency ceases participation, such as calculating the liability at a lower discount rate. **The proposed amendment eliminates the risk premium from NKU's cessation payment, leaving the risk with the remaining participating employers in the System, which includes the State.**

Rather, if the legislature wants to reduce NKU's cessation cost, then we recommend that the State make an appropriation directly to NKU for the sole purpose of subsidizing their required cessation contribution to the System so that the Retirement System receives the full cessation cost related to NKU's withdrawal their participation in KRS.

Basis of Calculations

GRS based the calculations and analysis in this letter on the member and financial data provided by KRS for use in performing the actuarial valuation as of June 30, 2019 and June 30, 2020. 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, 2020 actuarial valuation. The analysis and projections were performed without regard to HB 1 that was enacted during the 2019 special legislative session (and amended by SB 249 passed during the 2020 legislative session), except that both the Current Plan and Proposed Plan provisions assume that Northern Kentucky University ceases participation and elects a soft-freeze option and to pay their cost as a lump sum. Non-university agencies have until April 30, 2021 to make an election and as such the remaining individual employer elections regarding their future cessation from participating in KERS is unknown at this time.

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.

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 8 / SCS 1

Section 1.

Comparison of Fiscal Impact

Current Plan vs. Proposed Changes

Kentucky Retirement Systems
Exhibit 1-1
KERS Non-Hazardous Retirement Fund
Actuarial Analysis of HB 8 / SCS 1
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)
2020	$ 14,026	$ 14,026	$ -	14%	14%	0%	$ 923	$ 923	$ -	66.5%	66.5%	0.0%
2021	13,915	13,915	-	15%	15%	0%	1,245	1,185	(60)	75.3%	75.3%	0.0%
2022	13,474	13,537	63	18%	17%	-1%	1,013	1,018	5	76.0%	76.3%	0.3%
2023	13,260	13,320	60	19%	18%	-1%	1,008	1,013	5	76.0%	76.3%	0.3%
2024	13,035	13,093	58	20%	20%	0%	1,009	1,015	6	76.4%	76.8%	0.4%
2025	12,780	12,837	57	21%	21%	0%	1,006	1,011	5	76.4%	76.8%	0.4%
2026	12,511	12,565	54	22%	22%	0%	1,005	1,011	6	76.6%	77.0%	0.4%
2027	12,226	12,277	51	24%	23%	-1%	1,002	1,007	5	76.6%	77.0%	0.4%
2028	11,925	11,974	49	25%	25%	0%	1,000	1,005	5	76.7%	77.1%	0.4%
2029	11,608	11,654	46	26%	26%	0%	998	1,003	5	76.7%	77.1%	0.4%
2030	11,274	11,317	43	28%	27%	-1%	996	1,001	5	76.7%	77.1%	0.4%
2031	10,922	10,962	40	29%	29%	0%	995	1,000	5	76.7%	77.1%	0.4%
2032	10,549	10,586	37	31%	30%	-1%	993	998	5	76.6%	77.0%	0.4%
2033	10,157	10,191	34	32%	32%	0%	993	998	5	76.6%	77.0%	0.4%
2034	9,743	9,773	30	34%	34%	0%	990	995	5	76.3%	76.7%	0.4%
2035	9,309	9,335	26	36%	36%	0%	991	996	5	76.3%	76.7%	0.4%
2036	8,849	8,871	22	38%	38%	0%	989	994	5	76.0%	76.4%	0.4%
2037	8,365	8,384	19	41%	40%	-1%	992	997	5	76.0%	76.4%	0.4%
2038	7,852	7,867	15	43%	43%	0%	988	993	5	75.3%	75.7%	0.4%
2039	7,316	7,326	10	46%	46%	0%	992	997	5	75.3%	75.7%	0.4%
2040	6,747	6,752	5	50%	50%	0%	989	994	5	74.7%	75.1%	0.4%
2041	6,151	6,152	1	53%	53%	0%	993	998	5	74.7%	75.1%	0.4%
2042	5,519	5,514	(5)	57%	57%	0%	1,006	1,006	-	75.4%	75.4%	0.0%
2043	4,840	4,835	(5)	62%	62%	0%	1,009	1,009	-	75.4%	75.4%	0.0%
2044	4,121	4,116	(5)	67%	67%	0%	1,000	1,000	-	74.5%	74.5%	0.0%
2045	3,374	3,370	(4)	73%	73%	0%	1,003	1,003	-	74.5%	74.5%	0.0%
2046	2,585	2,581	(4)	79%	79%	0%	998	998	-	74.0%	74.0%	0.0%
2047	1,758	1,754	(4)	85%	85%	0%	1,000	1,000	-	74.0%	74.0%	0.0%
2048	885	882	(3)	93%	93%	0%	996	996	-	73.5%	73.5%	0.0%
2049	-	-	-	100%	100%	0%	51	51	-	3.8%	3.8%	0.0%
2050	-	-	-	100%	100%	0%	51	51	-	3.8%	3.8%	0.0%

Kentucky Retirement Systems
Exhibit 1-2
KERS Non-Hazardous Insurance Fund
Actuarial Analysis of HB 8 / SCS 1
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)
2020	$ 1,469	$ 1,469	$ -	43%	43%	0%	$ 146	$ 146	$ -	10.6%	10.6%	0.0%
2021	1,446	1,446	-	45%	45%	0%	171	158	(13)	9.7%	9.7%	0.0%
2022	1,400	1,415	15	48%	48%	0%	127	128	1	9.6%	9.7%	0.1%
2023	1,398	1,413	15	49%	49%	0%	126	128	2	9.6%	9.7%	0.1%
2024	1,393	1,407	14	51%	50%	-1%	126	128	2	9.7%	9.8%	0.1%
2025	1,373	1,387	14	52%	52%	0%	126	127	1	9.7%	9.8%	0.1%
2026	1,352	1,365	13	54%	53%	-1%	124	125	1	9.5%	9.7%	0.2%
2027	1,329	1,342	13	55%	54%	-1%	123	125	2	9.5%	9.7%	0.2%
2028	1,303	1,315	12	56%	56%	0%	120	122	2	9.3%	9.4%	0.1%
2029	1,278	1,289	11	57%	57%	0%	120	121	1	9.3%	9.4%	0.1%
2030	1,249	1,260	11	58%	58%	0%	117	118	1	9.1%	9.2%	0.1%
2031	1,221	1,231	10	59%	59%	0%	117	118	1	9.1%	9.2%	0.1%
2032	1,189	1,198	9	60%	60%	0%	114	115	1	8.9%	9.0%	0.1%
2033	1,157	1,165	8	61%	61%	0%	114	115	1	8.9%	9.0%	0.1%
2034	1,122	1,129	7	62%	62%	0%	112	113	1	8.8%	8.9%	0.1%
2035	1,086	1,092	6	63%	63%	0%	112	114	2	8.8%	8.9%	0.1%
2036	1,046	1,052	6	64%	64%	0%	111	112	1	8.6%	8.7%	0.1%
2037	1,006	1,010	4	65%	65%	0%	111	112	1	8.6%	8.7%	0.1%
2038	962	965	3	66%	66%	0%	110	111	1	8.5%	8.6%	0.1%
2039	916	919	3	68%	68%	0%	110	112	2	8.5%	8.6%	0.1%
2040	867	868	1	69%	69%	0%	131	133	2	10.1%	10.2%	0.1%
2041	792	792	-	72%	72%	0%	132	133	1	10.1%	10.2%	0.1%
2042	712	710	(2)	74%	74%	0%	133	133	-	10.1%	10.1%	0.0%
2043	625	624	(1)	77%	77%	0%	134	134	-	10.1%	10.1%	0.0%
2044	533	532	(1)	81%	81%	0%	130	130	-	9.8%	9.8%	0.0%
2045	438	436	(2)	84%	84%	0%	131	131	-	9.8%	9.8%	0.0%
2046	337	335	(2)	88%	88%	0%	130	130	-	9.8%	9.8%	0.0%
2047	229	228	(1)	92%	92%	0%	130	130	-	9.8%	9.8%	0.0%
2048	115	113	(2)	96%	96%	0%	130	130	-	9.7%	9.7%	0.0%
2049	-	-	-	100%	100%	0%	3	3	-	0.2%	0.2%	0.0%
2050	-	-	-	100%	100%	0%	3	3	-	0.2%	0.2%	0.0%

Actuarial Analysis of HB 8 / SCS 1
Section 2.
Projected Cost of the Retirement and Insurance
Current Plan

Kentucky Retirement Systems
Exhibit 2-1
KERS Non-Hazardous Retirement Fund
Actuarial Analysis of HB 8 / SCS 1
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)
2020	$ 16,349	$ 2,323	$ 14,026	14%	$ 923	$ 69	$ 1,388	66.51%	73.28%
2021	16,361	2,446	13,915	15%	1,245	69	1,341	75.32%	75.32%
2022	16,351	2,877	13,474	18%	1,013	68	1,334	75.95%	75.95%
2023	16,321	3,061	13,260	19%	1,008	68	1,327	75.95%	76.16%
2024	16,271	3,236	13,035	20%	1,009	68	1,321	76.40%	76.40%
2025	16,202	3,422	12,780	21%	1,006	67	1,316	76.40%	76.57%
2026	16,112	3,601	12,511	22%	1,005	67	1,312	76.64%	76.64%
2027	16,003	3,777	12,226	24%	1,002	67	1,308	76.64%	76.67%
2028	15,874	3,949	11,925	25%	1,000	67	1,304	76.72%	76.72%
2029	15,726	4,118	11,608	26%	998	67	1,301	76.72%	76.74%
2030	15,561	4,287	11,274	28%	996	67	1,298	76.73%	76.73%
2031	15,385	4,463	10,922	29%	995	66	1,297	76.73%	76.70%
2032	15,195	4,646	10,549	31%	993	66	1,296	76.59%	76.59%
2033	14,993	4,836	10,157	32%	993	66	1,296	76.59%	76.48%
2034	14,779	5,036	9,743	34%	990	66	1,297	76.33%	76.33%
2035	14,556	5,247	9,309	36%	991	67	1,298	76.33%	76.18%
2036	14,325	5,476	8,849	38%	989	67	1,301	75.98%	75.98%
2037	14,090	5,725	8,365	41%	992	67	1,306	75.98%	75.69%
2038	13,855	6,003	7,852	43%	988	67	1,312	75.32%	75.32%
2039	13,622	6,306	7,316	46%	992	68	1,318	75.32%	74.92%
2040	13,394	6,647	6,747	50%	989	68	1,323	74.70%	74.70%
2041	13,171	7,020	6,151	53%	993	68	1,329	74.70%	75.76%
2042	12,953	7,434	5,519	57%	1,006	68	1,334	75.42%	75.42%
2043	12,743	7,903	4,840	62%	1,009	69	1,338	75.42%	74.95%
2044	12,539	8,418	4,121	67%	1,000	69	1,342	74.51%	74.51%
2045	12,344	8,970	3,374	73%	1,003	69	1,346	74.51%	74.23%
2046	12,157	9,572	2,585	79%	998	69	1,349	73.96%	73.96%
2047	11,978	10,220	1,758	85%	1,000	69	1,353	73.96%	73.71%
2048	11,809	10,924	885	93%	996	69	1,356	73.49%	73.49%
2049	11,651	11,651	-	100%	51	70	1,359	3.76%	3.76%
2050	11,503	11,503	-	100%	51	70	1,362	3.75%	3.75%

Notes and assumptions:

The projection is based on the results of the June 30, 2020 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 to replace the current active members as they are assumed to terminate employment or retire at a rate such that the total active population is assumed to decrease 2% each year for each of the next 30 years.

The analysis was performed without regard to HB 1 (enacted during the 2019 special session and amended by SB 249 during the 2020 legislative session), except that Northern Kentucky University is assumed to withdrawal under the cessation window allowed by HB1 and elect to make a lump-sum payment and to have their employees continue to earn service in KERS, where allowable. All non-university agencies have until May 1, 2021 to make an election, and as such, other individual employer elections regarding future cessation is unknown at this time.

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

The 2020 legislative session did not set the employer contribution rates for FYE 2022. Employer contribution rates for FYE 2022 are assumed to be based on the June 30, 2020 actuarial valuation.

The 66.51% employer contribution rate for FYE 2021 is the effective contribution rate after reflecting HB 352 (passed during the 2020 legislative session) which allowed Regional Mental Health/Mental Retardation Boards, Local and District Health Departments, State Universities, Community Colleges and any other agency eligible to voluntarily cease participating in KERS to contribute 41.06% of pay to the pension fund for FY 2021. Collectively these entities reflect approximately 21% of the covered payroll in the System.

Kentucky Retirement Systems
Exhibit 2-2
KERS Non-Hazardous Insurance Fund
Actuarial Analysis of HB 8 / SCS 1
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)
2020	$ 2,565	$ 1,096	$ 1,469	43%	$ 146	$ 6	$ 1,377	10.57%	11.15%
2021	2,633	1,187	1,446	45%	171	6	1,330	9.71%	9.71%
2022	2,700	1,300	1,400	48%	127	7	1,322	9.61%	9.61%
2023	2,763	1,365	1,398	49%	126	7	1,315	9.61%	9.62%
2024	2,820	1,427	1,393	51%	126	8	1,309	9.66%	9.66%
2025	2,870	1,497	1,373	52%	126	8	1,303	9.66%	9.64%
2026	2,913	1,561	1,352	54%	124	9	1,299	9.54%	9.54%
2027	2,948	1,619	1,329	55%	123	9	1,294	9.54%	9.44%
2028	2,973	1,670	1,303	56%	120	10	1,290	9.32%	9.32%
2029	2,989	1,711	1,278	57%	120	10	1,286	9.32%	9.23%
2030	2,996	1,747	1,249	58%	117	10	1,283	9.10%	9.10%
2031	2,995	1,774	1,221	59%	117	11	1,282	9.10%	9.01%
2032	2,987	1,798	1,189	60%	114	11	1,281	8.91%	8.91%
2033	2,973	1,816	1,157	61%	114	11	1,280	8.91%	8.84%
2034	2,955	1,833	1,122	62%	112	12	1,280	8.76%	8.76%
2035	2,933	1,847	1,086	63%	112	12	1,281	8.76%	8.69%
2036	2,909	1,863	1,046	64%	111	12	1,284	8.61%	8.61%
2037	2,885	1,879	1,006	65%	111	13	1,289	8.61%	8.56%
2038	2,862	1,900	962	66%	110	13	1,294	8.47%	8.47%
2039	2,840	1,924	916	68%	110	13	1,300	8.47%	8.41%
2040	2,819	1,952	867	69%	131	13	1,305	10.07%	10.07%
2041	2,800	2,008	792	72%	132	13	1,311	10.07%	10.25%
2042	2,784	2,072	712	74%	133	13	1,316	10.12%	10.12%
2043	2,770	2,145	625	77%	134	13	1,320	10.12%	9.97%
2044	2,759	2,226	533	81%	130	13	1,324	9.84%	9.84%
2045	2,749	2,311	438	84%	131	14	1,327	9.84%	9.81%
2046	2,741	2,404	337	88%	130	14	1,330	9.76%	9.76%
2047	2,732	2,503	229	92%	130	14	1,333	9.76%	9.74%
2048	2,723	2,608	115	96%	130	14	1,336	9.71%	9.71%
2049	2,713	2,713	-	100%	3	14	1,339	0.24%	0.24%
2050	2,701	2,701	-	100%	3	14	1,342	0.24%	0.24%

Notes and assumptions:

The projection is based on the results of the June 30, 2020 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 to replace the current active members as they are assumed to terminate employment or retire at a rate such that the total active population is assumed to decrease 2% each year for each of the next 30 years.

The analysis was performed without regard to HB 1 (enacted during the 2019 special session and amended by SB 249 during the 2020 legislative session), except that Northern Kentucky University is assumed to withdrawal under the cessation window allowed by HB1 and elect to make a lump-sum payment and to have their employees continue to earn service in KERS, where allowable. All non-university agencies have until May 1, 2021 to make an election, and as such, other individual employer elections regarding future cessation is unknown at this time.

The contribution rate established in the Commonwealth's biennium budget is assumed to be equal to the full actuarially determined contribution rate.
The 2020 legislative session did not set the employer contribution rates for FYE 2022. Employer contribution rates for FYE 2022 are assumed to be based on the June 30, 2020 actuarial valuation.
The 10.57% employer contribution rate for FYE 2021 is the effective contribution rate after reflecting HB 352 (passed during the 2020 legislative session) which allowed Regional Mental Health/Mental Retardation Boards, Local and District Health Departments, State Universities, Community Colleges and any other agency eligible to voluntarily cease participating in KERS to contribute 8.41% of pay to the insurance fund for FY 2021. Collectively these entities reflect approximately 21% of the covered payroll in the System.

Actuarial Analysis of HB 8 / SCS 1
Section 3.
Projected Cost of the Retirement and Insurance Proposed Legislation

Kentucky Retirement Systems
Exhibit 3-1
KERS Non-Hazardous Retirement Fund
Actuarial Analysis of HB 8 / SCS 1
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)
2020	$ 16,349	$ 2,323	$ 14,026	14%	$ 923	$ 69	$ 1,388	66.51%	73.28%
2021	16,361	2,446	13,915	15%	1,185	69	1,341	75.32%	75.32%
2022	16,351	2,814	13,537	17%	1,018	68	1,334	76.33%	76.33%
2023	16,321	3,001	13,320	18%	1,013	68	1,327	76.33%	76.55%
2024	16,271	3,178	13,093	20%	1,015	68	1,321	76.79%	76.79%
2025	16,202	3,365	12,837	21%	1,011	67	1,316	76.79%	76.96%
2026	16,112	3,547	12,565	22%	1,011	67	1,312	77.04%	77.04%
2027	16,003	3,726	12,277	23%	1,007	67	1,308	77.04%	77.06%
2028	15,874	3,900	11,974	25%	1,005	67	1,304	77.11%	77.11%
2029	15,726	4,072	11,654	26%	1,003	67	1,301	77.11%	77.13%
2030	15,561	4,244	11,317	27%	1,001	67	1,298	77.12%	77.12%
2031	15,385	4,423	10,962	29%	1,000	66	1,297	77.12%	77.10%
2032	15,195	4,609	10,586	30%	998	66	1,296	76.99%	76.99%
2033	14,993	4,802	10,191	32%	998	66	1,296	76.99%	76.88%
2034	14,779	5,006	9,773	34%	995	66	1,297	76.72%	76.72%
2035	14,556	5,221	9,335	36%	996	67	1,298	76.72%	76.58%
2036	14,325	5,454	8,871	38%	994	67	1,301	76.37%	76.37%
2037	14,090	5,706	8,384	40%	997	67	1,306	76.37%	76.09%
2038	13,855	5,988	7,867	43%	993	67	1,312	75.71%	75.71%
2039	13,622	6,296	7,326	46%	997	68	1,318	75.71%	75.32%
2040	13,394	6,642	6,752	50%	994	68	1,323	75.09%	75.09%
2041	13,171	7,019	6,152	53%	998	68	1,329	75.09%	75.76%
2042	12,953	7,439	5,514	57%	1,006	68	1,334	75.42%	75.42%
2043	12,743	7,908	4,835	62%	1,009	69	1,338	75.42%	74.95%
2044	12,539	8,423	4,116	67%	1,000	69	1,342	74.51%	74.51%
2045	12,344	8,974	3,370	73%	1,003	69	1,346	74.51%	74.23%
2046	12,157	9,576	2,581	79%	998	69	1,349	73.96%	73.96%
2047	11,978	10,224	1,754	85%	1,000	69	1,353	73.96%	73.71%
2048	11,809	10,927	882	93%	996	69	1,356	73.49%	73.49%
2049	11,651	11,651	-	100%	51	70	1,359	3.76%	3.76%
2050	11,503	11,503	-	100%	51	70	1,362	3.75%	3.75%

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 to the provisions of the cessation window from HB 1 (enacted during the 2019 special session and amended by SB 249 during the 2020 legislative session). The proposed changes only impact university agencies.

Since university agencies had to make an election regarding cessation under this window by December 31, 2020, it was known at the time of this analysis that only the cessation cost for Northern Kentucky University would by reduced under the proposed provisions. As such, the analysis under both the Current Plan and the Proposed Plan assume only Northern Kentucky University elects to withdrawal from the System under this cessation window.

While the funding policy changes in the proposed legislation modifies the method for allocating the employer contribution requirement among agencies, there is no impact on the employer contribution requirement for the Retirement System as a whole.

Kentucky Retirement Systems
Exhibit 3-2
KERS Non-Hazardous Insurance Fund
Actuarial Analysis of HB 8 / SCS 1
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)
2020	$ 2,565	$ 1,096	$ 1,469	43%	$ 146	$ 6	$ 1,377	10.57%	11.15%
2021	2,633	1,187	1,446	45%	158	6	1,330	9.71%	9.71%
2022	2,700	1,285	1,415	48%	128	7	1,322	9.71%	9.71%
2023	2,763	1,350	1,413	49%	128	7	1,315	9.71%	9.72%
2024	2,820	1,413	1,407	50%	128	8	1,309	9.75%	9.75%
2025	2,870	1,483	1,387	52%	127	8	1,303	9.75%	9.74%
2026	2,913	1,548	1,365	53%	125	9	1,299	9.65%	9.65%
2027	2,948	1,606	1,342	54%	125	9	1,294	9.65%	9.54%
2028	2,973	1,658	1,315	56%	122	10	1,290	9.43%	9.43%
2029	2,989	1,700	1,289	57%	121	10	1,286	9.43%	9.33%
2030	2,996	1,736	1,260	58%	118	10	1,283	9.20%	9.20%
2031	2,995	1,764	1,231	59%	118	11	1,282	9.20%	9.11%
2032	2,987	1,789	1,198	60%	115	11	1,281	9.01%	9.01%
2033	2,973	1,808	1,165	61%	115	11	1,280	9.01%	8.94%
2034	2,955	1,826	1,129	62%	113	12	1,280	8.86%	8.86%
2035	2,933	1,841	1,092	63%	114	12	1,281	8.86%	8.79%
2036	2,909	1,857	1,052	64%	112	12	1,284	8.71%	8.71%
2037	2,885	1,875	1,010	65%	112	13	1,289	8.71%	8.66%
2038	2,862	1,897	965	66%	111	13	1,294	8.58%	8.58%
2039	2,840	1,921	919	68%	112	13	1,300	8.58%	8.51%
2040	2,819	1,951	868	69%	133	13	1,305	10.17%	10.17%
2041	2,800	2,008	792	72%	133	13	1,311	10.17%	10.25%
2042	2,784	2,074	710	74%	133	13	1,316	10.12%	10.12%
2043	2,770	2,146	624	77%	134	13	1,320	10.12%	9.97%
2044	2,759	2,227	532	81%	130	13	1,324	9.84%	9.84%
2045	2,749	2,313	436	84%	131	14	1,327	9.84%	9.81%
2046	2,741	2,406	335	88%	130	14	1,330	9.76%	9.76%
2047	2,732	2,504	228	92%	130	14	1,333	9.76%	9.74%
2048	2,723	2,610	113	96%	130	14	1,336	9.71%	9.71%
2049	2,713	2,713	-	100%	3	14	1,339	0.24%	0.24%
2050	2,701	2,701	-	100%	3	14	1,342	0.24%	0.24%

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 to the provisions of the cessation window from HB 1 (enacted during the 2019 special session and amended by SB 249 during the 2020 legislative session). The proposed changes only impact university agencies.

Since university agencies had to make an election regarding cessation under this window by December 31, 2020, it was known at the time of this analysis that only the cessation cost for Northern Kentucky University would by reduced under the proposed provisions. As such, the analysis under both the Current Plan and the Proposed Plan assume only Northern Kentucky University elects to withdrawal from the System under this cessation window.

While the funding policy changes in the proposed legislation modifies the method for allocating the employer contribution requirement among agencies, there is no impact on the employer contribution requirement for the Retirement System as a whole.