



March 3, 2019

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

**Re: Actuarial Analysis of Proposed Pension Reform Legislation HB 358 GA and its Financial Impact on the Kentucky Employees Retirement System (KERS)
AA Statement 1 of 1**

Dear Mr. Eager:

We have reviewed the provisions in the proposed legislation HB 358 GA. The purpose of this letter is to communicate the fiscal analysis of the draft legislation on the KERS non-hazardous retirement and insurance funds as well as our comments regarding certain provisions in the proposed legislation.

Summary of Proposed Legislation

In summary, this proposed legislation would provide seven universities (Eastern Kentucky University, Kentucky State University, Morehead State University, Murray State University, Northern Kentucky University, Western Kentucky University, and Kentucky Community Technical College System) as well as the Kentucky Higher Education Student Loan Corporation a window to allow them to withdrawal from the KERS Non-Hazardous System using provisions that are somewhat different than those currently in effect in State Statute (KRS 61.522 as amended by HB 351). University employees who are earning benefits in the KERS Hazardous System are unaffected by the proposed legislation. Also, the proposed legislation would allow university employees hired prior to the effective cessation date of June 30, 2020 to elect to remain in KERS. Please see our comments on page 4 regarding the Internal Revenue Service cash-or-deferred arrangement (CODA) rules, with which this legislation is required to be in compliance.

This proposed legislation would provide that the fiscal year 2019/2020 contribution rate for the universities and certain quasi-governmental agencies (e.g. Mental Health, Health Districts, and Non P1 agencies) will be 49.47% of pay (41.06% retirement and 8.41% insurance). This proposed legislation would be another one-year extension of contribution rate relief for these quasi-governmental agencies. This provision is also in HB 268 and HB 307. Our analysis and discussion in this letter is consistent with our comments provided in the actuarial analysis in those proposed legislation bills (refer to GRS letter dated February 21, 2019).

Summary of Cost Impact

Cessation Window for Universities

If enacted, these proposed provisions are expected to result in the universities paying the same actuarial cost as the provisions currently in effect in State Statute, but would allow the universities to select how the actuarial cost will be paid to the System (subject to certain constraints). While the proposed provisions for determining the actuarial cost are slightly different, we do not believe the difference is material to have a measurable fiscal cost to the System.

One-Year Continuation of Contribution Rate for Quasi-Governmental Agencies

HB 265 enacted in the 2018 legislation session provided this contribution rate relief for these quasi-governmental agencies for fiscal year 2018/2019. The fiscal impact of HB 265, was \$135 million for fiscal year 2018/2019. If this provision is enacted then the KERS non-hazardous systems will receive \$121 million less in contributions than expected from these entities in fiscal year 2019/2020. Note, the dollar amount of the impact is projected to be smaller for fiscal year 2019/2020 because the covered payroll of these entities has decreased from the prior year.

When there is a pattern of legislation that provides a continual benefit or assistance, it is necessary to disclose to stakeholders the substantive impact if this persistent pattern continues. Ignoring this pattern greatly distorts the actual long-term impact on cost and financial security to the System. While some stakeholders may have different opinions regarding the time-period necessary to constitute a pattern, we believe the fact that there is already a long-term historical pattern of KRS not receiving the full actuarial determined amount and that a second year extension of this legislation is sufficient to constitute a pattern for this analysis.

Therefore, if this legislation is enacted, when the July 1, 2019 actuarial valuation is prepared, we will assume that these entities will continue to receive similar contribution rate relief each future year in order to ensure funds are receiving the necessary contributions to fund the system. This assumption will be necessary until there is future legislation enacted that breaks this pattern.

The enclosed fiscal analysis assumes all the universities (and their employees) will elect to withdraw from the System at June 30, 2020 under the proposed provisions. These withdrawing agencies make up approximately 35% of the covered payroll of all quasi agencies subject to the subsidized contribution rates. These agencies would only be subject to 49.47% contribution rate for one year. Providing a subsidized contribution rate to the non-university quasi employers is expected to increase the contribution rates for non-quasi agencies by 7.7% of pay from 84.0% of pay to 91.7% of pay (80.9% retirement and 10.8% insurance) in fiscal year 2020/2021.

However, if none of the university employers elect to withdrawal from KERS and also received a subsidized contribution rate each future year, then we project the employer contribution rate for the non-quasi employers to increase to 11.8% of pay (please refer to our actuarial analysis for HB 307 and HB 268 dated February 21, 2019).

Section 1 includes exhibits that show a comparison of the fiscal impact of the proposed legislation to the current plan over the next 30 years on the: (1) unfunded actuarial accrued liability, (2) funded ratio, (3) total employer contribution dollars, and (4) projected composite employer contribution rates. Section 2 provides additional detail regarding each projection under the current plan and Section 3 provides similar information under the proposed legislation.

Summary of Proposed Cessation Window

This proposed legislation would provide eight participating employers (including all seven universities who are currently participating in KRS) a temporary time period to elect to withdrawal from KERS under alternative employer cessation provisions. The effective cessation date will be June 30, 2020 and the eligible entity must submit their election to the KRS Board by April 1, 2020. If the universities elects to withdrawal during the window then:

- 1) The effective date of the withdrawal will be June 30, 2020. Current university employees will continue contributing to the System and earning benefits up to the effective cessation date.
- 2) Active members who were hired prior to the effective cessation date by a university electing to withdrawal from KERS may elect to continue participating in the System and continue to earn benefits in KERS. Absence this employee election, the employee's benefit accrual will cease on June 30, 2020 and their future benefits will be earned in the university sponsored retirement program.
- 3) The universities electing to withdrawal from KERS will pay the full actuarial cost of benefits accrued by its current and former employees in the System. The full actuarial cost will be based on the assumptions and methods based on the 2019 actuarial valuation, but using a discount rate that is the lesser of: (1) the valuation interest rate, or (2) the yield on 30-year Treasury securities, subject to a minimum discount rate of 3.0%.
- 4) The universities may pay for this cost in installment payments over a time period determined by the entity, but may not exceed twenty-five (25) years. The entity will be charged interest at the rate of 5.25% per year on the outstanding balance of their actuarial cost (6.25% per year for the outstanding balance of their retiree health costs).

GRS Comments on Proposed Employer Cessation Provisions

Determination of the Actuarial Cost

Based on current yields of 30-year Treasury securities, the effective discount rate used in determining the actuarial cost will continue to be based on the yield of 30-year Treasury securities. Therefore, there is no fiscal cost shown in this analysis due to this provision. There would only begin to be a cost difference if the actual 30-year Treasury rate at June 30, 2020 is less than the 3.00% discount rate floor.

As a technical comment, the proposed legislation states the assumptions and methods used in determining the actuarial cost will be the same as those used in the 2019 actuarial valuation. It would be more technically correct if the proposed provisions stated the 2020 actuarial valuation. However, from an administrative standpoint, we expect the actuarial assumptions used in the June 30, 2020 actuarial valuation to be the same as those used in the June 2019 actuarial valuation.

Allowing Entities the Choice of Payment Method

The proposed legislation will provide the universities the ability to select how to finance their actuarial cost, which may be as a lump-sum payment or installments over a defined period that is not to exceed 25 years. If the universities choose to make installments then the outstanding balance of their cost will be charged interest at the valuation interest rate of 5.25% per year (6.25% per year on the outstanding balance of the health insurance cost). There is no fiscal cost in the actuarial analysis resulting from the installment option because the interest charged on the outstanding balance is equal to the valuation interest rate for the plans.

However, from a policy perspective this legislation is requiring KRS to be a creditor to the universities without control to the terms and conditions of the financial arrangement. This may expose KRS to some increased financial risk if these entities were to become financially troubled and did not completely finance their actuarial cost. Also, allowing the universities this payment option could result in other employers lobbying for the enactment of legislation to provide a similar option of financing cessation liability in a manner other than a lump sum payment which will expose the System to increased financial risk.

Providing Active Members of the Universities the Choice to Elect to Remain in KERS

The proposed legislation would provide that if an employer elects to withdrawal from KERS then their active members will be provided a choice to remain in KERS and continue accruing additional benefits and service or to cease active membership in KERS and become a participant in the alternative retirement plan. The IRS will only permit this proposed feature if the alternative retirement plan requires the same mandatory pre-tax member contribution requirements as the members are contributing in KERS. Due to the potential qualification issues, we recommend KRS and/or the General Assembly obtain a legal opinion regarding this provision.

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, 2018. Except where noted otherwise, the projections assume no actuarial gains or losses will occur in the future, and that members will terminate, retire, become disabled, or die as predicted by the actuarial assumptions documented in the June 30, 2018 actuarial valuation report.

These projections also do not reflect the actual investment experience of the retirement system after the measurement date of June 30, 2018. The projections assume that the number of participating members in the KERS non-hazardous systems will remain constant each future year and that new members will enter the system to replace current active members who terminate or retire in future years.

This fiscal analysis assumes that all eligible employers (and active members of those employers) will elect to cease their participation in KRS. However, if none of the universities elect to withdraw from the system, then the actual fiscal cost to the System will be greater than shown in the enclosed exhibits due to the universities benefitting from the subsidized contribution rates modeled in this proposed legislation.

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

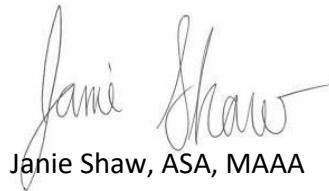
We are not attorneys, and we cannot provide a legal opinion regarding the changes in this proposed legislation. Nothing in this letter should be construed as providing legal, investment or tax advice.

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

Sincerely,



Daniel J. White, FSA, MAAA, EA



Janie Shaw, ASA, MAAA

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Enclosures

Section 1. Comparison of Fiscal Impact

Section 2. Projected Cost of the Retirement and Insurance Funds – Current Plan

Section 3. Projected Cost of the Retirement and Insurance Funds – Proposed Legislation

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

Kentucky Retirement Systems
KERS Non-Hazardous Retirement Fund
Exhibit 1-1
Comparison of Fiscal Impact
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			University Employer Contributions			Other Quasi Employer Contributions			Non-Quasi Employer Contributions			Total Employer Contribution			Non-Quasi Employer Contribution Rate		
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	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)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
2018	\$ 13,656	\$ 13,656	\$ -	13%	13%	0%	\$ 53	\$ 53	\$ -	\$ 92	\$ 92	\$ -	\$ 795	\$ 795	\$ -	\$ 940	\$ 940	\$ -	71.0%	71.0%	0.0%
2019	13,571	13,571	-	13%	13%	0%	92	53	(39)	161	93	(68)	805	805	-	1,058	951	(107)	71.0%	71.0%	0.0%
2020	13,240	13,350	110	15%	14%	-1%	959	68	(891)	169	94	(75)	849	932	83	1,977	1,094	(883)	73.7%	80.9%	7.2%
2021	11,957	13,004	1,047	23%	16%	-7%	-	68	68	172	95	(77)	864	948	84	1,036	1,111	75	73.7%	80.9%	7.2%
2022	11,617	12,641	1,024	25%	18%	-7%	-	68	68	169	98	(71)	849	928	79	1,018	1,094	76	71.2%	77.9%	6.7%
2023	11,282	12,281	999	26%	20%	-6%	-	68	68	172	99	(73)	864	945	81	1,036	1,112	76	71.2%	77.9%	6.7%
2024	10,909	11,882	973	28%	22%	-6%	-	68	68	166	100	(66)	841	915	74	1,007	1,083	76	68.1%	74.0%	5.9%
2025	10,542	11,488	946	30%	24%	-6%	-	68	68	169	102	(67)	857	932	75	1,026	1,102	76	68.1%	74.0%	5.9%
2026	10,135	11,053	918	32%	26%	-6%	-	68	68	165	104	(61)	833	902	69	998	1,074	76	65.0%	70.3%	5.3%
2027	9,733	10,620	887	34%	28%	-6%	-	68	68	167	106	(61)	849	918	69	1,016	1,092	76	65.0%	70.3%	5.3%
2028	9,287	10,143	856	37%	31%	-6%	-	68	68	162	108	(54)	825	887	62	987	1,063	76	61.9%	66.6%	4.7%
2029	8,847	9,670	823	39%	33%	-6%	-	68	68	165	110	(55)	841	904	63	1,006	1,082	76	61.9%	66.6%	4.7%
2030	8,363	9,150	787	42%	36%	-6%	-	68	68	160	111	(49)	817	873	56	977	1,052	75	59.0%	63.0%	4.0%
2031	7,880	8,631	751	44%	39%	-5%	-	68	68	163	114	(49)	834	891	57	997	1,073	76	59.0%	63.0%	4.0%
2032	7,349	8,061	712	47%	42%	-5%	-	68	68	158	116	(42)	808	858	50	966	1,042	76	56.0%	59.5%	3.5%
2033	6,821	7,493	672	50%	45%	-5%	-	68	68	161	119	(42)	826	876	50	987	1,063	76	56.0%	59.5%	3.5%
2034	6,242	6,870	628	54%	49%	-5%	-	68	68	156	120	(36)	799	842	43	955	1,030	75	53.1%	55.9%	2.8%
2035	5,664	6,248	584	57%	53%	-4%	-	68	68	160	123	(37)	816	860	44	976	1,051	75	53.1%	55.9%	2.8%
2036	5,034	5,570	536	61%	57%	-4%	-	68	68	154	126	(28)	790	825	35	944	1,019	75	50.2%	52.4%	2.2%
2037	4,403	4,889	486	66%	62%	-4%	-	68	68	158	130	(28)	809	845	36	967	1,043	76	50.2%	52.4%	2.2%
2038	3,714	4,148	434	70%	67%	-3%	-	68	68	151	133	(18)	779	805	26	930	1,006	76	47.1%	48.7%	1.6%
2039	3,028	3,407	379	76%	72%	-4%	-	68	68	156	136	(20)	798	825	27	954	1,029	75	47.1%	48.7%	1.6%
2040	2,282	2,604	322	81%	79%	-2%	-	68	68	148	139	(9)	760	776	16	908	983	75	43.7%	44.7%	1.0%
2041	1,545	1,805	260	87%	85%	-2%	-	68	68	152	142	(10)	778	795	17	930	1,005	75	43.7%	44.7%	1.0%
2042	746	943	197	94%	92%	-2%	-	68	68	139	139	-	708	714	6	847	921	74	38.9%	39.2%	0.3%
2043	-	123	123	100%	99%	-1%	-	68	68	12	12	-	59	59	-	71	139	68	3.2%	3.2%	0.0%
2044	-	63	63	100%	99%	-1%	-	68	68	11	11	-	60	60	-	71	139	68	3.1%	3.1%	0.0%
2045	-	-	-	100%	100%	0%	-	-	-	12	12	-	60	60	-	72	72	-	3.1%	3.1%	0.0%
2046	-	-	-	100%	100%	0%	-	-	-	12	12	-	61	61	-	73	73	-	3.1%	3.1%	0.0%
2047	-	-	-	100%	100%	0%	-	-	-	12	12	-	62	62	-	74	74	-	3.0%	3.0%	0.0%

Gabriel Roeder Smith & Company

Kentucky Retirement Systems
KERS Non-Hazardous Insurance Fund
Exhibit 1-2
Comparison of Fiscal Impact
(\$ in Millions)

Fiscal Year Beginning July 1,	Unfunded Actuarial Accrued Liability			Funded Ratio			University Employer Contributions			Other Quasi Employer Contributions			Non-Quasi Employer Contributions			Total Employer Contribution			Non-Quasi Employer Contribution Rate		
	Current	Proposed	Difference	Current	Proposed	Difference	Current	Proposed	Difference	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)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
2018	\$ 1,549	\$ 1,549	\$ -	36%	36%	0%	\$ 11	\$ 11	\$ -	\$ 19	\$ 19	\$ -	\$ 137	\$ 137	\$ -	\$ 167	\$ 167	\$ -	12.4%	12.4%	0.0%
2019	1,519	1,519	-	39%	39%	0%	16	11	(5)	28	19	(9)	139	139	-	183	169	(14)	12.4%	12.4%	0.0%
2020	1,452	1,467	15	43%	42%	-1%	195	15	(180)	23	19	(4)	119	124	5	337	158	(179)	10.3%	10.8%	0.5%
2021	1,209	1,415	206	53%	46%	-7%	-	15	15	23	20	(3)	120	125	5	143	160	17	10.3%	10.8%	0.5%
2022	1,166	1,367	201	56%	48%	-8%	-	15	15	21	19	(2)	108	111	3	129	145	16	9.1%	9.4%	0.3%
2023	1,134	1,332	198	58%	50%	-8%	-	15	15	22	20	(2)	110	113	3	132	148	16	9.1%	9.3%	0.2%
2024	1,098	1,290	192	60%	53%	-7%	-	15	15	21	21	-	105	106	1	126	142	16	8.6%	8.7%	0.1%
2025	1,063	1,251	188	61%	54%	-7%	-	15	15	21	21	-	107	108	1	128	144	16	8.6%	8.7%	0.1%
2026	1,022	1,205	183	63%	57%	-6%	-	15	15	20	20	-	102	103	1	122	138	16	8.0%	8.1%	0.1%
2027	984	1,161	177	65%	58%	-7%	-	15	15	20	20	-	104	105	1	124	140	16	8.0%	8.1%	0.1%
2028	939	1,111	172	66%	60%	-6%	-	15	15	19	20	1	99	99	-	118	134	16	7.5%	7.5%	0.0%
2029	897	1,063	166	68%	62%	-6%	-	15	15	20	20	-	100	101	1	120	136	16	7.5%	7.5%	0.0%
2030	848	1,008	160	70%	64%	-6%	-	15	15	19	19	-	95	96	1	114	130	16	6.9%	7.0%	0.1%
2031	801	954	153	71%	66%	-5%	-	15	15	19	19	-	97	98	1	116	132	16	6.9%	7.0%	0.1%
2032	748	893	145	73%	68%	-5%	-	15	15	18	18	-	92	93	1	110	126	16	6.4%	6.5%	0.1%
2033	697	834	137	75%	70%	-5%	-	15	15	19	19	-	94	95	1	113	129	16	6.4%	6.5%	0.1%
2034	638	768	130	77%	72%	-5%	-	15	15	17	17	-	90	91	1	107	123	16	6.0%	6.1%	0.1%
2035	582	703	121	79%	74%	-5%	-	15	15	18	18	-	92	93	1	110	126	16	6.0%	6.1%	0.1%
2036	518	629	111	81%	77%	-4%	-	15	15	17	17	-	88	89	1	105	121	16	5.6%	5.7%	0.1%
2037	455	557	102	83%	79%	-4%	-	15	15	18	18	-	90	91	1	108	124	16	5.6%	5.7%	0.1%
2038	386	477	91	86%	82%	-4%	-	15	15	17	17	-	86	87	1	103	119	16	5.2%	5.3%	0.1%
2039	316	396	80	88%	85%	-3%	-	15	15	18	18	-	88	89	1	106	122	16	5.2%	5.3%	0.1%
2040	240	308	68	91%	88%	-3%	-	15	15	17	17	-	84	85	1	101	117	16	4.9%	4.9%	0.0%
2041	164	220	56	94%	92%	-2%	-	15	15	17	17	-	86	87	1	103	119	16	4.9%	4.9%	0.0%
2042	81	123	42	97%	95%	-2%	-	15	15	16	15	(1)	79	80	1	95	110	15	4.4%	4.4%	0.0%
2043	-	29	29	100%	99%	-1%	-	15	15	2	2	-	9	9	-	11	26	15	0.5%	0.5%	0.0%
2044	-	16	16	100%	99%	-1%	-	15	15	2	2	-	9	9	-	11	26	15	0.5%	0.5%	0.0%
2045	-	-	-	100%	100%	0%	-	-	-	1	1	-	10	10	-	11	11	-	0.5%	0.5%	0.0%
2046	-	-	-	100%	100%	0%	-	-	-	1	1	-	10	10	-	11	11	-	0.5%	0.5%	0.0%
2047	-	-	-	100%	100%	0%	-	-	-	1	1	-	10	10	-	11	11	-	0.5%	0.5%	0.0%

Gabriel Roeder Smith & Company

Section 2.
Projected Cost of the Retirement and Insurance
Current Plan

Kentucky Retirement Systems
KERS Non-Hazardous Retirement Fund
Exhibit 2-1
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	University Employer Contribution	Other Quasi Employer Contribution	Non-Quasi Employer Contribution	Total Employer Contribution	Member Contribution	Covered Payroll	Quasi Employer Contribution as % of Covered Payroll	Non-Quasi Employer Contribution as % of Covered Payroll	Weighted Avg Employer Contribution as % of Covered Payroll	Weighted Avg Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2018	\$ 15,675	\$ 2,019	\$ 13,656	13%	\$ 53	\$ 92	\$ 795	\$ 940	\$ 74	\$ 1,471	41.06%	71.03%	63.86%	71.03%
2019	15,677	2,106	13,571	13%	92	161	805	1,058	74	1,490	71.03%	71.03%	71.03%	74.54%
2020	15,577	2,337	13,240	15%	959	169	849	1,977	69	1,382	73.71%	73.71%	73.71%	73.71%
2021	15,515	3,558	11,957	23%	-	172	864	1,036	70	1,405	73.71%	73.71%	73.71%	72.99%
2022	15,440	3,823	11,617	25%	-	169	849	1,018	71	1,429	71.24%	71.24%	71.24%	71.24%
2023	15,349	4,067	11,282	26%	-	172	864	1,036	73	1,454	71.24%	71.24%	71.24%	69.70%
2024	15,243	4,334	10,909	28%	-	166	841	1,007	74	1,480	68.06%	68.06%	68.06%	68.06%
2025	15,122	4,580	10,542	30%	-	169	857	1,026	75	1,508	68.06%	68.06%	68.06%	66.59%
2026	14,988	4,853	10,135	32%	-	165	833	998	77	1,536	64.97%	64.97%	64.97%	64.97%
2027	14,839	5,106	9,733	34%	-	167	849	1,016	78	1,564	64.97%	64.97%	64.97%	63.51%
2028	14,675	5,388	9,287	37%	-	162	825	987	80	1,594	61.94%	61.94%	61.94%	61.94%
2029	14,504	5,657	8,847	39%	-	165	841	1,006	81	1,624	61.94%	61.94%	61.94%	60.52%
2030	14,320	5,957	8,363	42%	-	160	817	977	83	1,656	58.98%	58.98%	58.98%	58.98%
2031	14,124	6,244	7,880	44%	-	163	834	997	85	1,691	58.98%	58.98%	58.98%	57.59%
2032	13,919	6,570	7,349	47%	-	158	808	966	86	1,726	56.00%	56.00%	56.00%	56.00%
2033	13,707	6,886	6,821	50%	-	161	826	987	88	1,763	56.00%	56.00%	56.00%	54.64%
2034	13,487	7,245	6,242	54%	-	156	799	955	90	1,800	53.06%	53.06%	53.06%	53.06%
2035	13,261	7,597	5,664	57%	-	160	816	976	92	1,839	53.06%	53.06%	53.06%	51.73%
2036	13,032	7,998	5,034	61%	-	154	790	944	94	1,882	50.15%	50.15%	50.15%	50.15%
2037	12,805	8,402	4,403	66%	-	158	809	967	96	1,928	50.15%	50.15%	50.15%	48.79%
2038	12,584	8,870	3,714	70%	-	151	779	930	99	1,977	47.07%	47.07%	47.07%	47.07%
2039	12,373	9,345	3,028	76%	-	156	798	954	101	2,026	47.07%	47.07%	47.07%	45.69%
2040	12,173	9,891	2,282	81%	-	148	760	908	104	2,077	43.73%	43.73%	43.73%	43.73%
2041	11,985	10,440	1,545	87%	-	152	778	930	106	2,127	43.73%	43.73%	43.73%	42.27%
2042	11,810	11,064	746	94%	-	139	708	847	109	2,178	38.87%	38.87%	38.87%	38.87%
2043	11,648	11,648	-	100%	-	12	59	71	111	2,230	3.17%	3.17%	3.17%	3.17%
2044	11,499	11,499	-	100%	-	11	60	71	114	2,282	3.13%	3.13%	3.13%	3.13%
2045	11,364	11,364	-	100%	-	12	60	72	117	2,335	3.09%	3.09%	3.09%	3.09%
2046	11,244	11,244	-	100%	-	12	61	73	119	2,389	3.06%	3.06%	3.06%	3.06%
2047	11,138	11,138	-	100%	-	12	62	74	122	2,443	3.03%	3.03%	3.03%	3.03%

Notes and assumptions:

All eligible employers ("University" employers) are assumed to cease participating from the system effective June 30, 2020 under the current cessation provisions.

The University employer contributions shown for FY 20/21 reflect the cessation payments made by these employers.

Except where noted, the projection is based on the results of the June 30, 2018 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.

The total active population is assumed to remain flat through the entire projection.

The contribution rate established in the Commonwealth's biennium budget is based on the calculated actuarial determined contribution rate.

The 63.86% employer contribution rate for FY 2018 is the effective contribution rate after reflecting HB 265 which provided that 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 the KERS to contribute a 49.47% of pay contribution rate for FY 2019. Collectively these entities reflect approximately 25% of the covered payroll in the System.

Kentucky Retirement Systems
KERS Non-Hazardous Insurance Fund
Exhibit 2-2
Current Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	University Employer Contribution	Other Quasi Employer Contribution	Non-Quasi Employer Contribution	Total Employer Contribution	Member Contribution	Covered Payroll	Quasi Employer Contribution as % of Covered Payroll	Non-Quasi Employer Contribution as % of Covered Payroll	Weighted Avg Employer Contribution as % of Covered Payroll	Weighted Avg Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2018	\$ 2,436	\$ 887	\$ 1,549	36%	\$ 11	\$ 19	\$ 137	\$ 167	\$ 6	\$ 1,461	8.41%	12.40%	11.45%	12.40%
2019	2,497	978	1,519	39%	16	28	139	183	7	1,480	12.40%	12.40%	12.40%	10.65%
2020	2,549	1,097	1,452	43%	195	23	119	337	7	1,373	10.28%	10.28%	10.28%	10.28%
2021	2,599	1,390	1,209	53%	-	23	120	143	7	1,396	10.28%	10.28%	10.28%	9.53%
2022	2,644	1,478	1,166	56%	-	21	108	129	8	1,419	9.11%	9.11%	9.11%	9.11%
2023	2,684	1,550	1,134	58%	-	22	110	132	9	1,445	9.11%	9.11%	9.11%	8.83%
2024	2,719	1,621	1,098	60%	-	21	105	126	9	1,471	8.55%	8.55%	8.55%	8.55%
2025	2,748	1,685	1,063	61%	-	21	107	128	10	1,498	8.55%	8.55%	8.55%	8.29%
2026	2,772	1,750	1,022	63%	-	20	102	122	11	1,526	7.99%	7.99%	7.99%	7.99%
2027	2,790	1,806	984	65%	-	20	104	124	12	1,554	7.99%	7.99%	7.99%	7.73%
2028	2,801	1,862	939	66%	-	19	99	118	12	1,583	7.45%	7.45%	7.45%	7.45%
2029	2,805	1,908	897	68%	-	20	100	120	13	1,614	7.45%	7.45%	7.45%	7.20%
2030	2,802	1,954	848	70%	-	19	95	114	14	1,646	6.91%	6.91%	6.91%	6.91%
2031	2,793	1,992	801	71%	-	19	97	116	14	1,680	6.91%	6.91%	6.91%	6.69%
2032	2,780	2,032	748	73%	-	18	92	110	15	1,715	6.44%	6.44%	6.44%	6.44%
2033	2,764	2,067	697	75%	-	19	94	113	16	1,752	6.44%	6.44%	6.44%	6.23%
2034	2,745	2,107	638	77%	-	17	90	107	17	1,789	6.00%	6.00%	6.00%	6.00%
2035	2,725	2,143	582	79%	-	18	92	110	17	1,828	6.00%	6.00%	6.00%	5.82%
2036	2,704	2,186	518	81%	-	17	88	105	18	1,871	5.62%	5.62%	5.62%	5.62%
2037	2,686	2,231	455	83%	-	18	90	108	19	1,917	5.62%	5.62%	5.62%	5.45%
2038	2,671	2,285	386	86%	-	17	86	103	19	1,965	5.24%	5.24%	5.24%	5.24%
2039	2,658	2,342	316	88%	-	18	88	106	20	2,014	5.24%	5.24%	5.24%	5.10%
2040	2,650	2,410	240	91%	-	17	84	101	20	2,064	4.88%	4.88%	4.88%	4.88%
2041	2,647	2,483	164	94%	-	17	86	103	21	2,115	4.88%	4.88%	4.88%	4.72%
2042	2,648	2,567	81	97%	-	16	79	95	22	2,165	4.37%	4.37%	4.37%	4.37%
2043	2,654	2,654	-	100%	-	2	9	11	22	2,217	0.51%	0.51%	0.51%	0.51%
2044	2,665	2,665	-	100%	-	2	9	11	23	2,268	0.50%	0.50%	0.50%	0.50%
2045	2,680	2,680	-	100%	-	1	10	11	23	2,321	0.49%	0.49%	0.49%	0.49%
2046	2,698	2,698	-	100%	-	1	10	11	24	2,375	0.48%	0.48%	0.48%	0.48%
2047	2,718	2,718	-	100%	-	1	10	11	24	2,429	0.47%	0.47%	0.47%	0.47%

Notes and assumptions:

All eligible employers ("University" employers) are assumed to cease participating from the system effective June 30, 2020 under the current cessation provisions.

The University employer contributions shown for FY 20/21 reflect the cessation payments made by these employers.

Except where noted, the projection is based on the results of the June 30, 2018 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.

The total active population is assumed to remain flat through the entire projection.

The contribution rate established in the Commonwealth's biennium budget is based on the calculated actuarial determined contribution rate.

The 11.45% employer contribution rate for FY 2018 is the effective contribution rate after reflecting HB 265 which provided that 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 the KERS to contribute a 49.47% of pay contribution rate for FY 2019. Collectively these entities reflect approximately 25% of the covered payroll in the System.

Section 3.
Projected Cost of the Retirement and Insurance
Proposed Legislation

Kentucky Retirement Systems
KERS Non-Hazardous Retirement Fund
Exhibit 3-1
Proposed Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	University Employer Contribution	Other Quasi Employer Contribution	Non-Quasi Employer Contribution	Total Employer Contribution	Member Contribution	Covered Payroll	Quasi Employer Contribution as % of Covered Payroll	Non-Quasi Employer Contribution as % of Covered Payroll	Weighted Avg Employer Contribution as % of Covered Payroll	Weighted Avg Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2018	\$ 15,675	\$ 2,019	\$ 13,656	13%	\$ 53	\$ 92	\$ 795	\$ 940	\$ 74	\$ 1,471	41.06%	71.03%	63.86%	71.03%
2019	15,677	2,106	13,571	13%	53	93	805	951	74	1,490	41.06%	71.03%	63.86%	74.54%
2020	15,577	2,227	13,350	14%	68	94	932	1,094	69	1,382	41.06%	80.89%	74.27%	74.27%
2021	15,515	2,511	13,004	16%	68	95	948	1,111	70	1,405	41.06%	80.88%	74.27%	73.54%
2022	15,440	2,799	12,641	18%	68	98	928	1,094	71	1,429	41.06%	77.90%	71.79%	71.79%
2023	15,349	3,068	12,281	20%	68	99	945	1,112	73	1,454	41.06%	77.89%	71.79%	70.23%
2024	15,243	3,361	11,882	22%	68	100	915	1,083	74	1,480	41.06%	74.03%	68.58%	68.58%
2025	15,122	3,634	11,488	24%	68	102	932	1,102	75	1,508	41.06%	74.02%	68.58%	67.10%
2026	14,988	3,935	11,053	26%	68	104	902	1,074	77	1,536	41.06%	70.29%	65.47%	65.47%
2027	14,839	4,219	10,620	28%	68	106	918	1,092	78	1,564	41.06%	70.28%	65.47%	64.00%
2028	14,675	4,532	10,143	31%	68	108	887	1,063	80	1,594	41.06%	66.62%	62.42%	62.42%
2029	14,504	4,834	9,670	33%	68	110	904	1,082	81	1,624	41.06%	66.62%	62.42%	60.99%
2030	14,320	5,170	9,150	36%	68	111	873	1,052	83	1,656	41.06%	63.04%	59.43%	59.43%
2031	14,124	5,493	8,631	39%	68	114	891	1,073	85	1,691	41.06%	63.03%	59.43%	58.03%
2032	13,919	5,858	8,061	42%	68	116	858	1,042	86	1,726	41.06%	59.45%	56.44%	56.44%
2033	13,707	6,214	7,493	45%	68	119	876	1,063	88	1,763	41.06%	59.45%	56.44%	55.07%
2034	13,487	6,617	6,870	49%	68	120	842	1,030	90	1,800	41.06%	55.89%	53.47%	53.47%
2035	13,261	7,013	6,248	53%	68	123	860	1,051	92	1,839	41.06%	55.89%	53.47%	52.13%
2036	13,032	7,462	5,570	57%	68	126	825	1,019	94	1,882	41.06%	52.39%	50.54%	50.54%
2037	12,805	7,916	4,889	62%	68	130	845	1,043	96	1,928	41.06%	52.39%	50.54%	49.17%
2038	12,584	8,436	4,148	67%	68	133	805	1,006	99	1,977	41.06%	48.68%	47.44%	47.44%
2039	12,373	8,966	3,407	72%	68	136	825	1,029	101	2,026	41.06%	48.68%	47.44%	46.04%
2040	12,173	9,569	2,604	79%	68	139	776	983	104	2,077	41.06%	44.65%	44.06%	44.06%
2041	11,985	10,180	1,805	85%	68	142	795	1,005	106	2,127	41.06%	44.65%	44.06%	42.60%
2042	11,810	10,867	943	92%	68	139	714	921	109	2,178	39.18%	39.18%	39.18%	39.18%
2043	11,648	11,525	123	99%	68	12	59	139	111	2,230	3.17%	3.17%	3.17%	3.17%
2044	11,499	11,436	63	99%	68	11	60	139	114	2,282	3.13%	3.13%	3.13%	3.13%
2045	11,364	11,364	-	100%	-	12	60	72	117	2,335	3.09%	3.09%	3.09%	3.09%
2046	11,244	11,244	-	100%	-	12	61	73	119	2,389	3.06%	3.06%	3.06%	3.06%
2047	11,138	11,138	-	100%	-	12	62	74	122	2,443	3.03%	3.03%	3.03%	3.03%

Notes and assumptions:

All eligible employers ("University" employers) are assumed to cease participating from the system effective June 30, 2020 under the proposed cessation provisions.

The University employer contributions shown for FY 20/21 and later reflect the cessation payments made by these employers.

Kentucky Retirement Systems
KERS Non-Hazardous Insurance Fund
Exhibit 3-2
Proposed Plan
(\$ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio (3) / (2)	University Employer Contribution	Other Quasi Employer Contribution	Non-Quasi Employer Contribution	Total Employer Contribution	Member Contribution	Covered Payroll	Quasi Employer Contribution as % of Covered Payroll	Non-Quasi Employer Contribution as % of Covered Payroll	Weighted Avg Employer Contribution as % of Covered Payroll	Weighted Avg Actuarial Determined Contribution Rate
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
2018	\$ 2,436	\$ 887	\$ 1,549	36%	\$ 11	\$ 19	\$ 137	\$ 167	\$ 6	\$ 1,461	8.41%	12.40%	11.45%	12.40%
2019	2,497	978	1,519	39%	11	19	139	169	7	1,480	8.41%	12.40%	11.45%	10.65%
2020	2,549	1,082	1,467	42%	15	19	124	158	7	1,373	8.41%	10.76%	10.37%	10.37%
2021	2,599	1,184	1,415	46%	15	20	125	160	7	1,396	8.41%	10.76%	10.37%	9.61%
2022	2,644	1,277	1,367	48%	15	19	111	145	8	1,419	8.41%	9.35%	9.19%	9.19%
2023	2,684	1,352	1,332	50%	15	20	113	148	9	1,445	8.41%	9.34%	9.19%	8.90%
2024	2,719	1,429	1,290	53%	15	21	106	142	9	1,471	8.41%	8.66%	8.62%	8.62%
2025	2,748	1,497	1,251	54%	15	21	108	144	10	1,498	8.41%	8.66%	8.62%	8.36%
2026	2,772	1,567	1,205	57%	15	20	103	138	11	1,526	8.06%	8.06%	8.06%	8.06%
2027	2,790	1,629	1,161	58%	15	20	105	140	12	1,554	8.06%	8.06%	8.06%	7.80%
2028	2,801	1,690	1,111	60%	15	20	99	134	12	1,583	7.51%	7.51%	7.51%	7.51%
2029	2,805	1,742	1,063	62%	15	20	101	136	13	1,614	7.51%	7.51%	7.51%	7.26%
2030	2,802	1,794	1,008	64%	15	19	96	130	14	1,646	6.98%	6.98%	6.98%	6.98%
2031	2,793	1,839	954	66%	15	19	98	132	14	1,680	6.98%	6.98%	6.98%	6.76%
2032	2,780	1,887	893	68%	15	18	93	126	15	1,715	6.50%	6.50%	6.50%	6.50%
2033	2,764	1,930	834	70%	15	19	95	129	16	1,752	6.50%	6.50%	6.50%	6.29%
2034	2,745	1,977	768	72%	15	17	91	123	17	1,789	6.06%	6.06%	6.06%	6.06%
2035	2,725	2,022	703	74%	15	18	93	126	17	1,828	6.06%	6.06%	6.06%	5.88%
2036	2,704	2,075	629	77%	15	17	89	121	18	1,871	5.68%	5.68%	5.68%	5.68%
2037	2,686	2,129	557	79%	15	18	91	124	19	1,917	5.68%	5.68%	5.68%	5.50%
2038	2,671	2,194	477	82%	15	17	87	119	19	1,965	5.29%	5.29%	5.29%	5.29%
2039	2,658	2,262	396	85%	15	18	89	122	20	2,014	5.29%	5.29%	5.29%	5.15%
2040	2,650	2,342	308	88%	15	17	85	117	20	2,064	4.93%	4.93%	4.93%	4.93%
2041	2,647	2,427	220	92%	15	17	87	119	21	2,115	4.93%	4.93%	4.93%	4.76%
2042	2,648	2,525	123	95%	15	15	80	110	22	2,165	4.39%	4.39%	4.39%	4.39%
2043	2,654	2,625	29	99%	15	2	9	26	22	2,217	0.51%	0.51%	0.51%	0.51%
2044	2,665	2,649	16	99%	15	2	9	26	23	2,268	0.50%	0.50%	0.50%	0.50%
2045	2,680	2,680	-	100%	-	1	10	11	23	2,321	0.49%	0.49%	0.49%	0.49%
2046	2,698	2,698	-	100%	-	1	10	11	24	2,375	0.48%	0.48%	0.48%	0.48%
2047	2,718	2,718	-	100%	-	1	10	11	24	2,429	0.47%	0.47%	0.47%	0.47%

Notes and assumptions:

All eligible employers ("University" employers) are assumed to cease participating from the system effective June 30, 2020 under the proposed cessation provisions.

The University employer contributions shown for FY 20/21 and later reflect the cessation payments made by these employers.