Kentucky Employees Retirement System (KERS)

Actuarial Valuation Report
as of June 30, 2023

P: 469.524.0000 | www.grsconsulting.com

December 5, 2023

Board of Trustees
Kentucky Retirement Systems
Perimeter Park West
1260 Louisville Road
Frankfort, KY 40601

Subject: Actuarial Valuation as of June 30, 2023

Dear Trustees of the Board:

This report describes the current actuarial condition of the Kentucky Employees Retirement System (KERS) and provides the actuarially determined employer contribution for fiscal years ending June 30, 2025 and June 30, 2026. In addition, the report analyzes changes in KERS's financial condition and provides various summaries of the data.

Separate reports are issued with regard to valuation results determined in accordance with Governmental Accounting Standards Board (GASB) Statements 67, 68, 74 and 75. Results of this report should not be used for any other purpose without consultation with the undersigned. Valuations are prepared annually as of June 30, the first day of the plan year for KERS. This report was prepared at the request of the Board of Trustees of the Kentucky Retirement Systems (Board) and is intended for use by the Kentucky Public Pensions Authority (KPPA) staff and those designated or approved by the Board.

FINANCING OBJECTIVES AND FUNDING POLICY

The contributions determined by these actuarial valuations are intended to become effective twelve months after the valuation date and, as such, are intended to be used by the Board for recommending required contribution rates effective July 1, 2024, as well as the subsequent fiscal year beginning July 1, 2025 and ending June 30, 2026.

The employer contribution is determined in accordance with Section 61.565 of Kentucky Statute. As specified by the Statute, the employer contribution is comprised of a normal cost contribution and an actuarial accrued liability contribution. The actuarial accrued liability contribution is calculated by amortizing the unfunded accrued liability as of June 30, 2019 over a closed 30-year amortization period (26 years remaining as of June 30, 2023). Gains and losses incurring in years after June 30, 2019 are amortized as separate closed 20-year amortization bases.

If the contributions made are equal to the Actuarially Determined Contribution (ADC), and if all actuarial assumptions are met, there will not be an unfunded accrued liability at the end of the 26-year period remaining from the original closed 30-year amortization base. Accordingly, the ADC under the funding policy can be considered a "Reasonable Actuarially Determined Contribution" as required by the Actuarial Standards of Practice.

House Bill 8 passed during the 2021 legislative session and specified the method for allocating and collecting contributions from the participating employers in the non-hazardous fund. Each employer will pay a normal cost contribution on the payroll of their covered employees and contribute to the fund an allocated share of the cost required to amortize the unfunded liability.

HB 1 and HB 604 were enacted in the 2022 legislative session and provided an additional $135 million and $105 million in appropriations to finance the unfunded actuarial accrued liability in the KERS non-hazardous retirement fund in FY 2023 and FY 2024. The previous year's valuation reflected the appropriations for FY 2023 in the calculated contribution requirement, and the appropriations for FY 2024 have been reflected in the contribution requirement in this year's valuation.

Assumptions and Methods

The Board of Trustees, in consultation with the actuary, sets the actuarial assumptions and methods used in the actuarial valuation. Except where noted in this report, the assumptions used in this actuarial valuation are based on an experience study conducted with experience through June 30, 2022, adopted by the Board of Trustees on June 5, 2023 for first use in this June 30, 2023 actuarial valuation.

The results of the actuarial valuation are dependent on the actuarial assumptions used. Actual results can, and almost certainly will, differ as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contributions, and funding periods. The actuarial calculations are intended to provide information for rational decision making.

Benefit Provisions

The benefit provisions reflected in these valuations are those which were in effect on June 30, 2023. House Bill 506 passed during the 2023 legislative session and reinstated the Partial Lump Sum Option Form of payment for members who retire on and after January 1, 2024, and adjusted the minimum required separation period before a retiree may become reemployed and continue to receive their retirement allowance to one month for all circumstances. There were no other material benefit provision changes since the prior valuation.

DATA

Member data for retired, active and inactive members was supplied as of June 30, 2023, by KPPA staff. The staff also supplied asset information as of June 30, 2023. We did not audit this data, but we did apply a number of tests to the data, and we concluded that it was reasonable and consistent with the prior year's data. GRS is not responsible for the accuracy or completeness of the information provided to us by KPPA.

CERTIFICATION

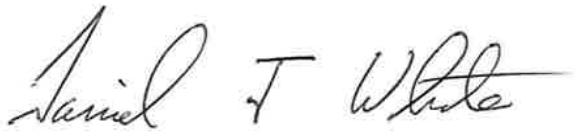
We certify that the information presented herein is accurate and fairly portrays the actuarial position of KERS as of June 30, 2023.

All of our work conforms with generally accepted actuarial principles and practices, and is in conformity with the Actuarial Standards of Practice issued by the Actuarial Standards Board. In our opinion, our calculations also comply with the requirements of Kentucky Code of Laws and, where applicable, the Internal Revenue Code, ERISA, and the Statements of the Governmental Accounting Standards Board.

To the best of our knowledge, this report is complete and accurate and is in accordance with generally recognized actuarial practices and methods. Mr. White and Ms. Shaw are Enrolled Actuaries. All three of the undersigned are 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 herein. In addition, all three are independent of KPPA and are experienced in performing valuations for large public retirement systems. This communication shall not be construed to provide tax advice, legal advice or investment advice.

Sincerely,

Gabriel, Roeder, Smith & Company



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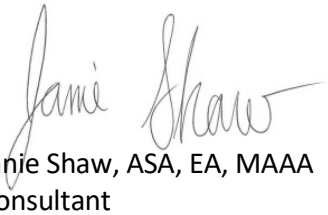
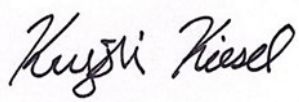


Janie Shaw, ASA, EA, MAAA
Consultant



Krysti Kiesel, ASA, MAAA
Senior Analyst and Actuary

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SECTION 1

EXECUTIVE SUMMARY

Summary of Principal Results

(Dollar amounts expressed in thousands)

	Non-Hazardous		Hazardous		Total	
	June 30, 2023	June 30, 2022	June 30, 2023	June 30, 2022	June 30, 2023	June 30, 2022
Contribution Rate, payable on covered payroll[1]:						
Retirement	6.99%	7.74%	23.74%	30.12%		
Insurance	1.45%	1.86%	0.00%	0.00%		
Total	8.44%	9.60%	23.74%	30.12%	N/A	N/A
Amortization Cost to be allocated amongst employers	$856,561	$905,893	N/A	N/A	N/A	N/A
Assets:						
Retirement						
• Actuarial value (AVAR)	$3,552,471	$3,065,263	$891,460	$832,436	$4,443,931	$3,897,699
• Market value (MVAR)	$3,539,943	$3,013,845	$893,533	$810,978	$4,433,476	$3,824,823
• Ratio of actuarial to market value of assets	100.4%	101.7%	99.8%	102.6%	100.2%	101.9%
Insurance						
• Actuarial value (AVAI)	$1,532,895	$1,409,553	$619,519	$597,701	$2,152,414	$2,007,254
• Market value (MVAI)	$1,532,752	$1,364,419	$625,356	$588,162	$2,158,108	$1,952,581
• Ratio of actuarial to market value of assets	100.0%	103.3%	99.1%	101.6%	99.7%	102.8%
Funded Status:						
Retirement						
• Actuarial accrued liability	$16,304,278	$16,576,631	$1,363,036	$1,316,825	$17,667,314	$17,893,456
• Unfunded accrued liability on AVAR	$12,751,807	$13,511,368	$471,576	$484,389	$13,223,383	$13,995,757
• Funded ratio on AVAR	21.8%	18.5%	65.4%	63.2%	25.2%	21.8%
• Unfunded accrued liability on MVAR	$12,764,335	$13,562,786	$469,503	$505,847	$13,233,838	$14,068,633
• Funded ratio on MVAR	21.7%	18.2%	65.6%	61.6%	25.1%	21.4%
Insurance						
• Actuarial accrued liability	$1,877,109	$1,782,386	$363,512	$347,044	$2,240,621	$2,129,430
• Unfunded accrued liability on AVAI	$344,214	$372,833	($256,007)	($250,657)	$88,207	$122,176
• Funded ratio on AVAI	81.7%	79.1%	170.4%	172.2%	96.1%	94.3%
• Unfunded accrued liability on MVAI	$344,357	$417,967	($261,844)	($241,118)	$82,513	$176,849
• Funded ratio on MVAI	81.7%	76.6%	172.0%	169.5%	96.3%	91.7%
Membership:						
• Number of						
- Active Members	31,383	29,551	3,886	3,617	35,269	33,168
- Retirees and Beneficiaries	48,409	48,195	4,887	4,850	53,296	53,045
- Inactive Members	55,980	55,510	8,577	8,154	64,557	63,664
- Total	135,772	133,256	17,350	16,621	153,122	149,877
• Projected payroll of active members	$1,615,868	$1,355,267	$211,602	$165,637	$1,827,470	$1,520,904
• Average salary of active members	$51,489	$45,862	$54,452	$45,794	$51,815	$45,855

[1] Reflects contribution rate payable as a percentage of covered payroll. For the non-hazardous fund, this includes the normal cost portion of the contribution requirement only. For the hazardous fund, this includes both the normal cost and unfunded liability portion of the contribution requirement.

[1] Contribution rates calculated with the June 30, 2023 valuation are effective for fiscal years ending June 30, 2025 and June 30 2026.

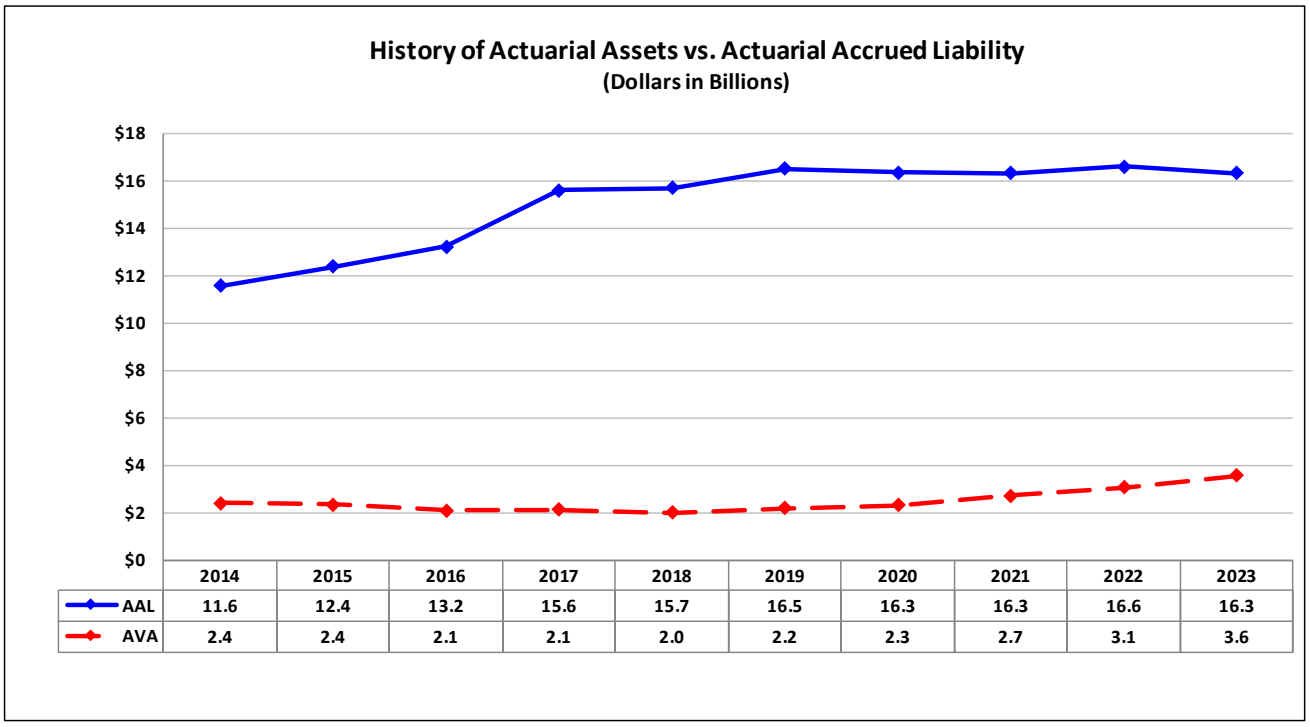
Executive Summary (Continued)

Non-Hazardous Retirement Fund

The unfunded actuarial accrued liability of the non-hazardous retirement fund decreased by $760 million since the prior year's valuation to $12.752 billion. This decrease was approximately $251 million more than expected, primarily due to lower liabilities due to the assumption changes based on the 2022 experience study. The decrease in the liability due to the assumption changes was offset by liability losses as a result of salary increases for individual members being greater than assumed.

For FYE 2023, the non-hazardous retirement fund distributed $1,049 million in benefit payments and administrative expenses, and received $1,360 million in employer and employee contributions. As of June 30, 2023, plan assets for this system were $3,540 million (excluding assets in the 401(h) account). To stabilize the financial condition of this system, it is imperative that contributions to the system continue to exceed the benefit payments.

Below is a chart with the historical actuarial value of assets and actuarial accrued liability. The divergence in the assets and liability at the beginning of the ten-year period was generally due to: (1) actual contributions being insufficient to finance the unfunded actuarial accrued liability, and (2) assumption changes.



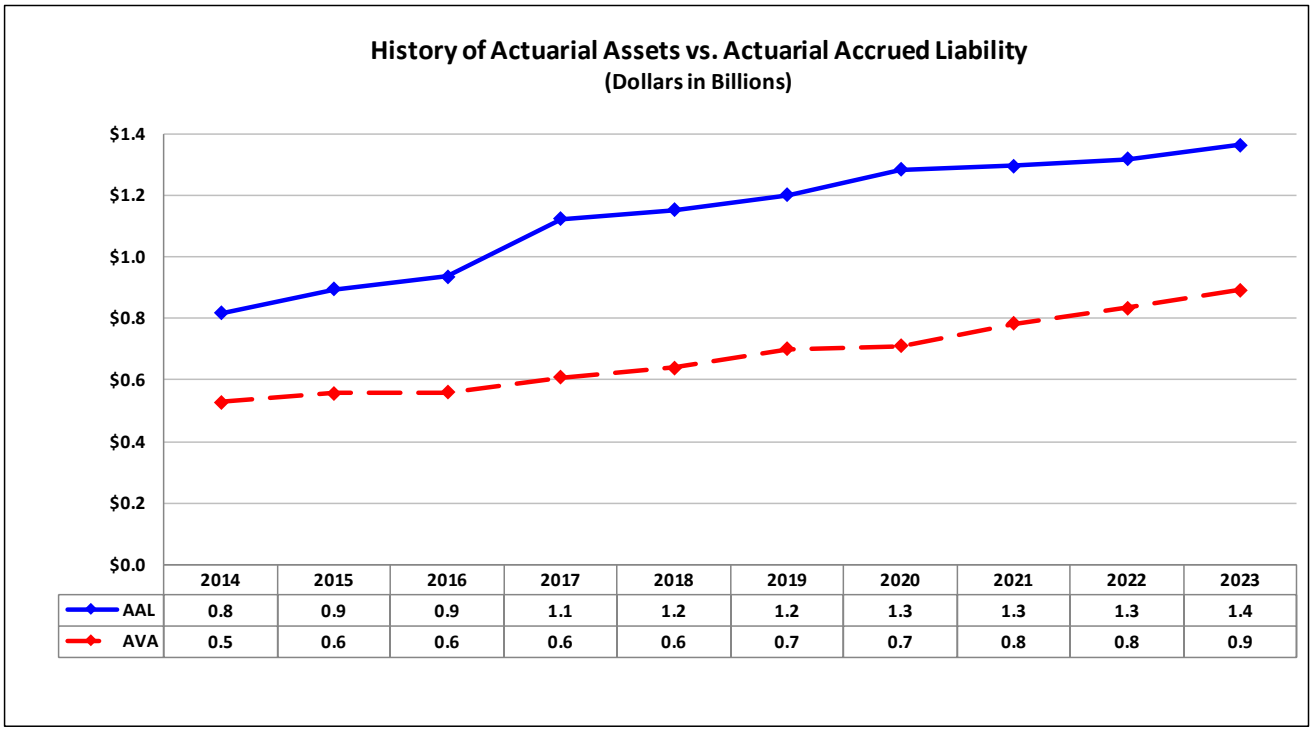
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AAL	11.6	12.4	13.2	15.6	15.7	16.5	16.3	16.3	16.6	16.3
AVA	2.4	2.4	2.1	2.1	2.0	2.2	2.3	2.7	3.1	3.6

Executive Summary (Continued)

Hazardous Retirement Fund

The unfunded actuarial accrued liability of the hazardous retirement fund decreased by $13 million since the prior year's valuation to $472 million. This decrease was approximately $22 million less than expected, primarily due to liability losses as a result of salary increases for individual members being greater than assumed. The increase in the liability due to demographic losses was offset by a decrease in liabilities due to the assumption changes based on the 2022 experience study.

Below is a chart with the historical actuarial value of assets and actuarial accrued liability. The divergence in the assets and liability at the beginning of the ten-year period was generally due to: (1) actual contributions being insufficient to finance the unfunded actuarial accrued liability, and (2) assumption changes.



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
AAL	0.8	0.9	0.9	1.1	1.2	1.2	1.3	1.3	1.3	1.4
AVA	0.5	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.8	0.9

Executive Summary (Continued)

Summary of Change in Financial Condition of the Insurance Funds

The unfunded actuarial accrued liability of the non-hazardous insurance fund decreased by $29 million since the prior year's valuation to $344 million. This decrease was approximately $57 million less than expected, primarily due to liability losses related to the 2024 premium experience and retiree contribution changes discussed below. The increase in the liability due to demographic losses was offset by a decrease in liabilities due to the assumption changes based on the 2022 experience study.

Similarly, the funding surplus (actuarial accrued liability in excess of assets) of the hazardous insurance fund increased by $5 million since the prior year's valuation to $256 million. This increase was approximately $6 million less than expected.

On average, pre-Medicare premiums were approximately 7% higher than expected and Medicare premiums were approximately 4% lower than expected. In conjunction with the review of the healthcare per capita claims cost, the assumed increase in future healthcare costs, or trend assumption, is also reviewed on an annual basis. The trend assumption for the pre-Medicare Plans was increased in the 2023 actuarial valuation as a result of our review. These changes increased liability for the non-hazardous and hazardous insurance funds by approximately $38 million and $13 million, respectively.

Additionally, the Board of Trustees adopted to lower the retiree contribution for the Medicare Advantage plans from $252.51 to be based on the Humana premiums ($93.35 as of January 1, 2024). The Board also adopted the Medical Only plan as the KPPA "contribution plan", which further lowered member contributions for those with less than 20 years of service. These changes increased liability for the non-hazardous and hazardous insurance funds by approximately $123 million and $14 million, respectively.

SECTION 2

DISCUSSION

Discussion

The Kentucky Employees Retirement System (KERS) is a defined benefit pension plan that provides coverage for employees of state government, non-teaching staff at regional state supported universities, local health departments, regional mental health/mental retardation agencies, and other quasi-state agencies. KERS includes both non-hazardous and hazardous duty benefits. This report presents the results of the June 30, 2023 actuarial funding valuation for both the Retirement Funds and Insurance Funds.

The primary purposes of the valuation report are to describe the current actuarial condition of KERS and provide the actuarially determined employer contributions for fiscal years ending June 30, 2025 and June 30, 2026. In addition, the report analyzes changes in KERS's financial condition, and provides various summaries of the data.

The actuarially determined contribution consist of two components: a normal cost rate and an amortization cost to finance the unfunded actuarial accrued liability. The normal cost rate is the theoretical amount which would be required to pay the members' benefits, based on the current plan provisions, if this amount had been contributed from each member's entry date and if the fund's experience exactly followed the actuarial assumptions. This is the amount that it should cost to provide the benefits for an average member. Since members contribute to the fund, only the excess of the normal cost rate over the member contribution rate is included in the employer contribution. The amortization cost is the amount necessary to amortize the unfunded actuarial accrued liability. The payroll growth rate and discount rate assumptions are selected by the Board. The funding period is specified in Section 61.565 of Kentucky Statute.

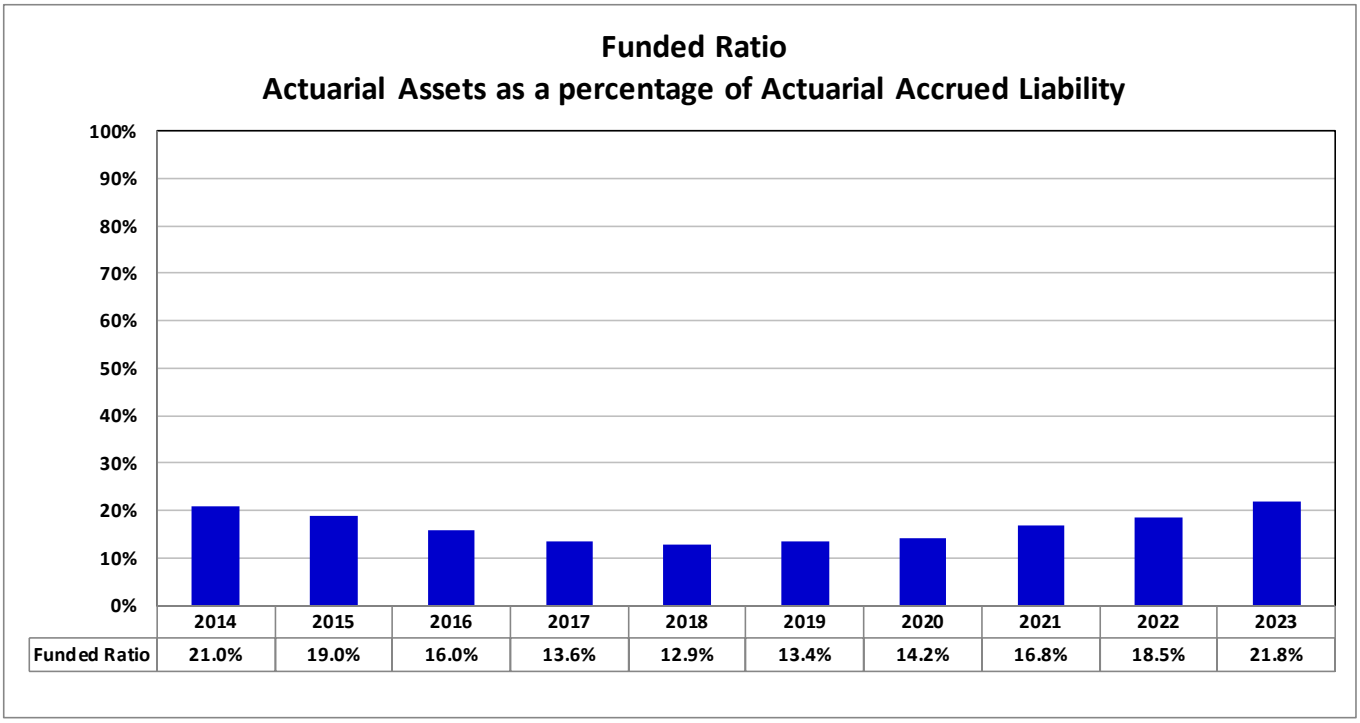
All of the actuarial and financial tables referenced by the other sections of this Report appear in Section 3. Section 4 provides additional details related to the calculation of the amortization of the unfunded actuarial accrued liability. Section 5 provides member data and statistical information. Section 6 provides a discussion of various risk measures, which are intended to aid stakeholders in understanding the effects of future experience differing from the assumptions used in performing an actuarial valuation. Appendices A and B provide summaries of the principle actuarial assumptions and methods and plan provisions. Appendix C provides a glossary of technical terms that are used throughout this report. Finally, Appendix D provides the allocation of the amortization cost amongst KERS Non-Hazardous employers in accordance with Statutes enacted with the passing of House Bill 8 during the 2021 legislation session.

Funding Progress

The following charts provide a ten-year history of the retirement funds' funded ratio (i.e. the Actuarial Value of Assets divided by the Actuarial Accrued Liability). The decline in the funded ratio in the first half of this ten-year period was generally due to: (1) actual contributions being insufficient to finance the unfunded actuarial accrued liability, and (2) decreases in the assumed rate of return.

The funded ratio has been gradually increasing for the past several years for both the non-hazardous and hazardous funds. Assuming the full actuarially determined contributions are paid in future years and absent material future unfavorable experience, the funded ratio is expected to continue improving. Also, the dollar amount of the unfunded actuarial accrued liability, or the difference between the actuarial accrued liability and the actuarial value of assets, is also expected to continue a decreasing trend. Table 9, Schedule of Funding Progress, in the following section of the report provides additional detail regarding the funding progress of the retirement funds.

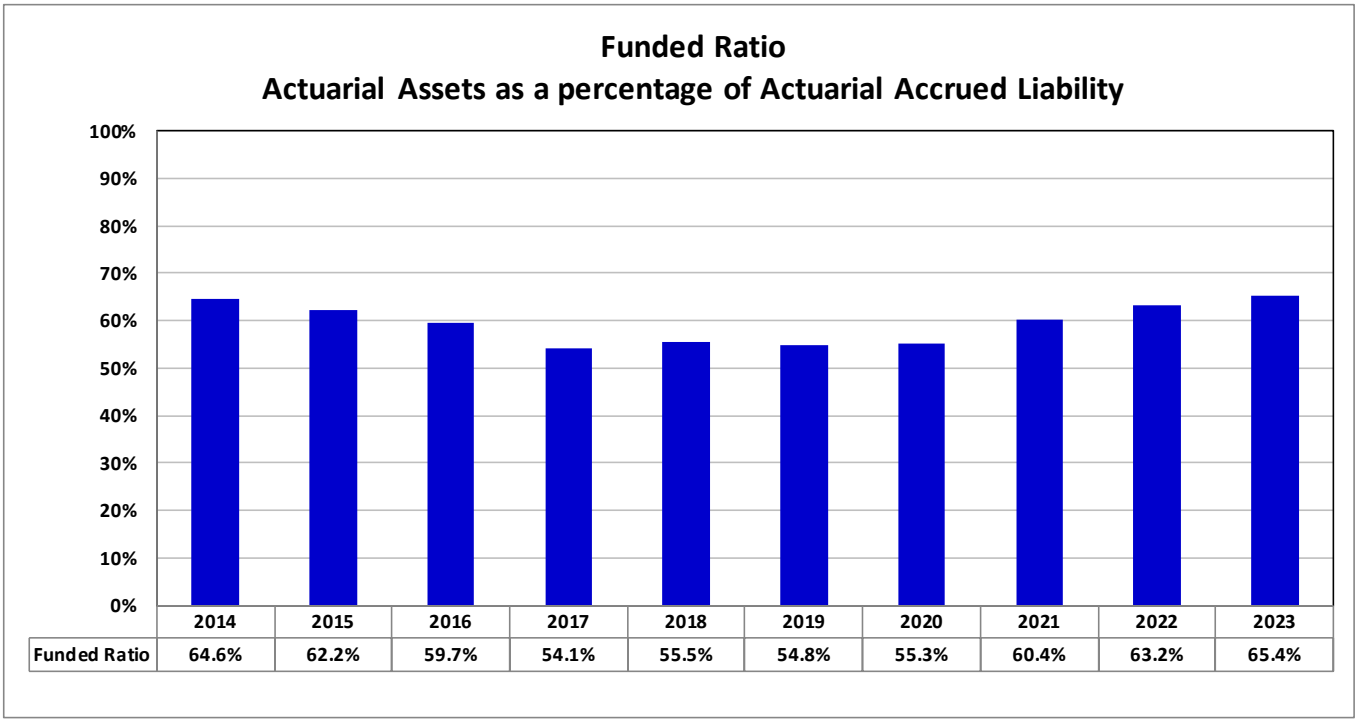
Non-Hazardous Retirement Fund



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Funded Ratio	21.0%	19.0%	16.0%	13.6%	12.9%	13.4%	14.2%	16.8%	18.5%	21.8%

Funding Progress (Continued)

Hazardous Retirement Fund



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Funded Ratio	64.6%	62.2%	59.7%	54.1%	55.5%	54.8%	55.3%	60.4%	63.2%	65.4%

Asset Gains/ (Losses)

The actuarial value of assets ("AVA") is based on a smoothed market value of assets, using a systematic approach to phase-in the difference between the actual and expected investment return on the market value of assets (adjusted for receipts and disbursements during the year). This is appropriate because it dampens the short-term volatility inherent in investment markets. The return is computed net of investment expenses.

Non-Hazardous Retirement Fund

The actuarial value of assets for the retirement fund increased from $3.065 billion to $3.552 billion since the prior valuation. The rate of return on the market value of assets on a dollar-weighted basis for the prior fiscal year was 6.8% which is greater than the 5.25% expected annual return. The return on an actuarial (smoothed) asset value was 5.5%, which resulted in a $8 million gain for the fiscal year. The market value of assets is $13 million less than the actuarial value of assets, which signifies that the retirement fund is in a position of net deferred investment losses to be realized in future years.

Hazardous Retirement Fund

Likewise, the actuarial value of assets for the hazardous retirement fund increased from $832 million to $891 million since the prior valuation. The rate of return on the market value of assets on a dollar-weighted basis for the prior fiscal year was 9.4% which is greater than the 6.25% expected annual return. The return on an actuarial (smoothed) asset value was 6.3%, which resulted in a $0.7 million gain for the fiscal year. The market value of assets is $2 million more than the actuarial value of assets, which signifies that the retirement fund is in a position of net deferred investment gains to be realized in future years.

Table 6 in the following section of this report provides asset information that was included in the annual financial statements of the funds, as well as the estimated yield on a market value basis. Tables 7 and 8 provide the development of the actuarial value of assets and the estimated yield on an actuarial value basis.

Actuarial Gains/ (Losses)

The annual actuarial valuation is a snapshot analysis of the benefit liabilities, assets and funded position of the funds as of the first day of the plan year. In any one fiscal year, the experience can be better or worse from that which is assumed or expected. The actuarial assumptions do not necessarily attempt to model what the experience will be for any one given fiscal year, but instead try to model the overall experience over many years. Therefore, as long as the actual experience of a retirement system is reasonably close to the current assumptions, the long-term funding requirements of the system will remain relatively consistent.

Below are tables that separately show a reconciliation of the unfunded liability since the prior actuarial valuation for the retirement and health insurance funds, which include the effect of asset and liability gains and losses, changes in assumptions, and changes in plan provisions. See the discussion in the Executive Summary for additional information related to the liability experience and additional information in this section of the report related to the asset experience, plan changes, and assumption changes.

Retirement Experience Gain or (Loss)
(Dollar amounts expressed in thousands)

	Non-Hazardous	Hazardous
A. Calculation of total actuarial gain or loss		
1. Unfunded actuarial accrued liability (UAAL), previous year	$ 13,511,368	$ 484,389
2. Normal cost and administrative expenses	172,661	27,496
3. Less: contributions for the year	(1,359,585)	(90,266)
4. Interest accrual	678,190	28,313
5. Expected UAAL (Sum of Items 1 - 4)	$ 13,002,634	$ 449,932
6. Actual UAAL as of June 30,2023	$ 12,751,807	$ 471,576
7. Total gain (loss) for the year (Item 5 - Item 6)	$ 250,827	$ (21,644)
B. Source of gains and losses		
8. Asset gain (loss) for the year	$ 7,922	$ 731
9. Liability experience gain (loss) for the year	(446,156)	(46,572)
10. Plan Change	(2,073)	—
11. Assumption change	691,134	24,197
12. Total	$ 250,827	$ (21,644)

Actuarial Gains/ (Losses) (Continued)

Insurance Experience Gain or (Loss)
(Dollar amounts expressed in thousands)

	Non-Hazardous	Hazardous
A. Calculation of total actuarial gain or loss		
1. Unfunded actuarial accrued liability (UAAL), previous year	$ 372,833	$ (250,657)
2. Normal cost and administrative expenses	31,633	6,839
3. Less: contributions for the year	(137,466)	(3,074)
4. Interest accrual	19,995	(15,548)
5. Expected UAAL (Sum of Items 1 - 4)	286,995	(262,440)
6. Actual UAAL as of June 30,2023	$ 344,214	(256,007)
7. Total gain (loss) for the year (Item 5 - Item 6)	$ (57,219)	$ (6,433)
B. Source of gains and losses		
8. Asset gain (loss) for the year	$ (1,780)	$ 1,558
9. Liability experience gain (loss) for the year	(163,089)	(22,782)
10. Plan Change	(2,161)	—
11. Assumption change	109,811	14,791
12. Total	$ (57,219)	$ (6,433)

Actuarial Assumptions and Methods

In determining costs and liabilities, actuaries use assumptions about the future, such as rates of salary increase, probabilities of retirement, termination, death and disability, and an annual investment return assumption. The Board of Trustees, in consultation with the actuary, sets the actuarial assumptions and methods used in the actuarial valuation.

An experience study was conducted after the June 30, 2022 actuarial valuation and the Board adopted updated assumptions for use in this actuarial valuation. The updated assumptions include:

Demographic Assumptions:

- Post-retirement mortality rates were updated based on KPPA experience.
- Mortality improvement assumption was updated to the ultimate rates of the MP-2020 mortality improvement scale.
- Rates of termination prior to retirement were increased based on KERS experience.
- Rates of disability incidence for the non-hazardous fund were decreased based on KERS experience.

Economic Assumptions:

- The rate of inflation was increased from 2.30% to 2.50%.
- The salary productivity assumption was reduced by 0.20%, resulting in no change in the salary increase assumption for long-service employees of 3.30% in the non-hazardous fund and 3.55% in the hazardous fund.
- The investment return assumption for each insurance fund was increased from 6.25% to 6.50%.
- The Tier 3 cash balance interest crediting rate assumption was increased to 5.90% for the non-hazardous fund and to 6.75% for the hazardous fund.

In conjunction with the review of the healthcare per capita claims cost, the assumed increase in future healthcare costs, or trend assumption, is reviewed on an annual basis. All other assumptions were adopted by the Board and are based on an experience study conducted based on experience through June 30, 2022. It is our opinion that the assumptions are internally consistent, reasonable, and reflect anticipated future experience of the System. Appendix A includes a summary of the actuarial assumptions and methods used in this valuation.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); and changes in plan provisions or applicable law. This report does not include a more robust assessment of the risks of future experience not meeting the actuarial assumptions. Additional assessment of risks was outside the scope of this assignment.

This report was prepared using our proprietary valuation model and related software which in our professional judgment has the capability to provide results that are consistent with the purposes of the valuation. We performed tests to ensure that the model reasonably represents that which is intended to be modeled.

Benefit Provisions

Appendix B of this report includes a summary of the major benefit provisions for System. The following is a summary of the changes in benefits enacted since the last actuarial valuation.

House Bill 506 passed during the 2023 legislative session and reinstated the Partial Lump Sum Option Form of payment for members who retire on and after January 1, 2024, with the lump-sum options expanded to include 48 or 60 times the member's monthly retirement allowance. Since this optional form of payment results in a reduced, actuarial equivalent, monthly retirement allowance for members who elect a partial lump-sum option, this provision does not have a fiscal impact to the accrued liability.

House Bill 506 also adjusted the minimum required separation period before a retiree may become reemployed and continue to receive their retirement allowance to one month for all circumstances for each plan. This is a minimal change for members in the hazardous plan, as the minimum separation period is currently one month for members who become reemployed on a full-time basis in a hazardous position. The requirement was previously three months only for members who become reemployed on a part-time basis or in any non-hazardous position. We believe this provision of House Bill 506 will have an insignificant impact on the retirement pattern of hazardous members.

Similarly, this is a relatively small change for future retirees in the non-hazardous plan. But as the minimum separation period was previously three months in almost every circumstance, we have assumed that there would be a 1.0% increase in the rate of retirement for each of the first two years a non-hazardous member becomes retirement eligible under the age of 65, in order to reflect a shift in the retirement pattern.

There were no other material plan provision changes since the prior valuation.

SECTION 3

ACTUARIAL TABLES

Actuarial Tables

RETIREMENT BENEFITS

ACTUARIAL TABLES

Development of Unfunded Actuarial Accrued Liability
Retirement Benefits

(Dollar amounts expressed in thousands)

		June 30, 2023	
		Non-Hazardous (1)	Hazardous (2)
1.	Projected payroll of active members	$ 1,615,868	$ 211,602
2.	Present value of future pay	$ 12,142,967	$ 1,450,768
3.	Normal cost rate		
	a. Total normal cost rate	11.13%	15.00%
	b. Less: member contribution rate	-5.00%	-8.00%
	c. Employer normal cost rate	6.13%	7.00%
4.	Actuarial accrued liability for active members		
	a. Present value of future benefits	$ 5,585,999	$ 646,412
	b. Less: present value of future normal costs	(1,295,406)	(212,696)
	c. Actuarial accrued liability	$ 4,290,593	$ 433,716
5.	Total actuarial accrued liability		
	a. Retirees and beneficiaries	$ 11,316,494	$ 868,920
	b. Inactive members	697,191	60,400
	c. Active members (Item 4c)	4,290,593	433,716
	d. Total	$ 16,304,278	$ 1,363,036
6.	Actuarial value of assets	$ 3,552,471	$ 891,460
7.	Unfunded actuarial accrued liability (UAAL) (Item 5d - Item 6)	$ 12,751,807	$ 471,576
8.	Funded Ratio	21.8%	65.4%

Actuarial Present Value of Future Benefits
Retirement Benefits
(Dollar amounts expressed in thousands)

		June 30, 2023	
		Non-Hazardous (1)	Hazardous (2)
1.	Active members		
	a. Service retirement	$ 4,934,964	$ 560,252
	b. Deferred termination benefits and refunds	427,537	61,225
	c. Survivor benefits	70,846	5,583
	d. Disability benefits	152,652	19,352
	e. Total	$ 5,585,999	$ 646,412
2.	Retired members		
	a. Service retirement	$ 10,300,830	$ 792,519
	b. Disability retirement	232,690	16,936
	c. Beneficiaries	782,974	59,465
	d. Total	$ 11,316,494	$ 868,920
3.	Inactive members		
	a. Vested terminations	$ 643,058	$ 47,294
	b. Nonvested terminations	54,133	13,106
	c. Total	$ 697,191	$ 60,400
4.	Total actuarial present value of future benefits	$ 17,599,684	$ 1,575,732

Development of Actuarially Determined Contribution Rate
Retirement Benefits

		June 30, 2023	
		Non-Hazardous (1)	Hazardous (2)
1.	Total normal cost rate		
	a. Service retirement	7.14%	9.36%
	b. Deferred termination benefits and refunds	3.18%	4.76%
	c. Survivor benefits	0.30%	0.27%
	d. Disability benefits	0.51%	0.61%
	e. Total	11.13%	15.00%
2.	Less: member contribution rate	-5.00%	-8.00%
3.	Total employer normal cost rate	6.13%	7.00%
4.	Administrative expenses	0.86%	0.71%
5.	Net employer normal cost rate	6.99%	7.71%
6.	UAAL amortization contribution rate	N/A	16.03%
7.	Total calculated employer contribution payable as a percentage of covered payroll	6.99%	23.74%
8.	Total amortization cost to be allocated amongst employers	$ 854,588	N/A

Note: Per House Bill 8 (passed during the 2021 legislative session), amortization cost for the KERS Non-Hazardous fund is allocated amongst employers based on their 2019 Actuarial Accrued Liabilit See appendix D for more information. Amortization cost for the hazardous fund is included in the contribution rate, payable as a percentage of payroll.

Actuarial Balance Sheet

Non-Hazardous Members Retirement

(Dollar amounts expressed in thousands)

		June 30, 2023 (1)	June 30, 2022 (2)
1.	Assets - Present and Expected Future Resources		
	a. Current assets (actuarial value)	$ 3,552,471	$ 3,065,263
	b. Present value of future member contributions	$ 607,148	$ 525,509
	c. Present value of future employer contributions		
	i. Normal cost contributions	$ 688,258	$ 644,919
	ii. Unfunded accrued liability contributions	12,751,807	13,511,368
	iii. Total future employer contributions	$ 13,440,065	$ 14,156,287
	d. Total assets	$ 17,599,684	$ 17,747,059
2.	Liabilities - Present Value of Expected Future Benefit Payments		
	a. Active members		
	i. Present value of future normal costs	$ 1,295,406	$ 1,170,428
	ii. Accrued liability	4,290,593	3,876,036
	iii. Total present value of future benefits	$ 5,585,999	$ 5,046,464
	b. Present value of benefits payable on account of current retired members and beneficiaries	$ 11,316,494	$ 11,991,589
	c. Present value of benefits payable on account of current inactive members	$ 697,191	$ 709,006
	d. Total liabilities	$ 17,599,684	$ 17,747,059

Actuarial Balance Sheet

Hazardous Members Retirement

(Dollar amounts expressed in thousands)

		June 30, 2023 (1)	June 30, 2022 (2)
1.	Assets - Present and Expected Future Resources		
	a. Current assets (actuarial value)	$ 891,460	$ 832,436
	b. Present value of future member contributions	$ 116,061	$ 100,732
	c. Present value of future employer contributions		
	i. Normal cost contributions	$ 96,635	$ 87,873
	ii. Unfunded accrued liability contributions	471,576	484,389
	iii. Total future employer contributions	$ 568,211	$ 572,262
	d. Total assets	$ 1,575,732	$ 1,505,430
2.	Liabilities - Present Value of Expected Future Benefit Payments		
	a. Active members		
	i. Present value of future normal costs	$ 212,696	$ 188,605
	ii. Accrued liability	433,716	370,497
	iii. Total present value of future benefits	$ 646,412	$ 559,102
	b. Present value of benefits payable on account of current retired members and beneficiaries	$ 868,920	$ 889,452
	c. Present value of benefits payable on account of current inactive members	$ 60,400	$ 56,876
	d. Total liabilities	$ 1,575,732	$ 1,505,430

Reconciliation of Retirement Net Assets

(Dollar amounts expressed in thousands)[1]

	Year Ending June 30, 2023 (1) Non-Hazardous	Year Ending June 30, 2023 (2) Hazardous
1. Value of assets at beginning of year	$ 3,013,845	$ 810,978
2. Revenue for the year		
a. Contributions		
i. Member contributions	$ 84,579	$ 17,459
ii. Employer contributions	1,034,991	72,778
iii. Other contributions (less 401h)	240,016	29
iv. Total	$ 1,359,585	$ 90,266
b. Income		
i. Interest, dividends, and other income	$ 102,553	$ 26,482
ii. Investment expenses	(17,072)	(5,824)
iii. Net	$ 85,481	$ 20,658
c. Net realized and unrealized gains (losses)	130,399	55,822
d. Total revenue	$ 1,575,465	$ 166,746
3. Expenditures for the year		
a. Disbursements		
i. Refunds	$ 11,847	$ 4,041
ii. Regular annuity benefits	1,023,704	78,636
iii. Other benefit payments	0	0
iv. Transfers to other systems	0	0
v. Total	$ 1,035,551	$ 82,677
b. Administrative expenses and depreciation	13,817	1,513
c. Total expenditures	$ 1,049,368	$ 84,190
4. Increase in net assets (Item 2. - Item 3.)	$ 526,097	$ 82,556
5. Value of assets at end of year (Item 1. + Item 4.)	$ 3,539,943	$ 893,533
6. Net external cash flow		
a. Dollar amount	$ 310,217	$ 6,076
b. Percentage of market value	9.5%	0.7%
7. Estimated annual return on net assets	6.8%	9.4%

[1] Amounts may not add due to rounding

[1] Excludes 401h assets

Development of Actuarial Value of Assets

Non-Hazardous Members Retirement

(Dollar amounts expressed in thousands)*

	Year Ending	June 30, 2023
1.	Actuarial value of assets at beginning of year	$ 3,065,263
2.	Market value of assets at beginning of year	$ 3,013,845
3.	Net new investments	
	a. Contributions	$ 1,359,585
	b. Benefit payments	(1,035,551)
	c. Administrative expenses	(13,817)
	d. Subtotal	$ 310,217
4.	Market value of assets at end of year	$ 3,539,943
5.	Net earnings (Item 4. - Item 2. - Item 3.d.)	$ 215,880
6.	Assumed investment return rate for fiscal year	5.25%
7.	Expected return for immediate recognition	$ 166,370
8.	Excess return for phased recognition	$ 49,510

9. Phased-in recognition, 20% of excess return on assets for prior years:

	Fiscal Year Ending June 30,	Excess Return	Recognized Amount
a.	2023	$ 49,510	$ 9,902
b.	2022	(325,078)	(65,016)
c.	2021	389,946	77,989
d.	2020	(65,343)	(13,069)
e.	2019	4,070	814
f.	Total		$ 10,621

10.	Actuarial value of assets as of June 30, 2023 (Item 1. + Item 3.d. + Item 7.+ Item 9.f.)	$ 3,552,471
11.	Ratio of actuarial value to market value	100.4%
12.	Estimated annual return on actuarial value of assets	5.5%

* Amounts may not add due to rounding

Development of Actuarial Value of Assets

Hazardous Members Retirement

(Dollar amounts expressed in thousands)*

	Year Ending		June 30, 2023
1.	Actuarial value of assets at beginning of year	$	832,436
2.	Market value of assets at beginning of year	$	810,978
3.	Net new investments		
	a. Contributions	$	90,266
	b. Benefit payments		(82,677)
	c. Administrative expenses		(1,513)
	d. Subtotal	$	6,076
4.	Market value of assets at end of year	$	893,533
5.	Net earnings (Item 4. - Item 2. - Item 3.d.)	$	76,480
6.	Assumed investment return rate for fiscal year		6.25%
7.	Expected return for immediate recognition	$	50,876
8.	Excess return for phased recognition	$	25,604

9. Phased-in recognition, 20% of excess return on assets for prior years:

	Fiscal Year Ending June 30,		Excess Return		Recognized Amount
a.	2023	$	25,604	$	5,121
b.	2022		(105,331)		(21,066)
c.	2021		129,924		25,985
d.	2020		(35,903)		(7,181)
e.	2019		(3,933)		(787)
f.	Total			$	2,072

10.	Actuarial value of assets as of June 30, 2023 (Item 1. + Item 3.d. + Item 7.+ Item 9.f.)	$	891,460
11.	Ratio of actuarial value to market value		99.8%
12.	Estimated annual return on actuarial value of assets		6.3%

* Amounts may not add due to rounding

Schedule of Funding Progress
Retirement Benefits
(Dollar amounts expressed in thousands)

June 30,	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Covered Payroll	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
		Non-Hazardous Members				
2014	$ 2,423,957	$ 11,550,110	$ 9,126,153	21.0%	$ 1,577,496	578.5%
2015	2,350,990	12,359,673	10,008,683	19.0%	1,544,234	648.1%
2016	2,112,286	13,224,698	11,112,412	16.0%	1,529,249	726.7%
2017	2,123,623	15,591,641	13,468,018	13.6%	1,531,535	879.4%
2018	2,019,278	15,675,232	13,655,954	12.9%	1,471,477	928.0%
2019	2,206,280	16,466,428	14,260,148	13.4%	1,437,647	991.9%
2020	2,323,298	16,348,961	14,025,663	14.2%	1,387,761	1010.7%
2021	2,735,876	16,321,372	13,585,496	16.8%	1,349,330	1006.8%
2022	3,065,263	16,576,631	13,511,368	18.5%	1,355,267	997.0%
2023	3,552,471	16,304,278	12,751,807	21.8%	1,615,868	789.2%
		Hazardous Members				
2014	$ 527,897	$ 816,850	$ 288,953	64.6%	$ 129,076	223.9%
2015	556,688	895,433	338,745	62.2%	128,680	263.2%
2016	559,487	936,706	377,219	59.7%	147,563	255.6%
2017	607,159	1,121,420	514,261	54.1%	162,418	316.6%
2018	639,262	1,151,923	512,661	55.5%	158,213	324.0%
2019	671,647	1,226,195	554,548	54.8%	150,446	368.6%
2020	709,587	1,283,769	574,182	55.3%	170,826	336.1%
2021	782,496	1,295,243	512,747	60.4%	162,836	314.9%
2022	832,436	1,316,825	484,389	63.2%	165,637	292.4%
2023	891,460	1,363,036	471,576	65.4%	211,602	222.9%
		Total KERS Members				
2014	$ 2,951,854	$ 12,366,960	$ 9,415,106	23.9%	$ 1,706,572	551.7%
2015	2,907,678	13,255,106	10,347,428	21.9%	1,672,914	618.5%
2016	2,671,773	14,161,404	11,489,631	18.9%	1,676,812	685.2%
2017	2,730,782	16,713,061	13,982,279	16.3%	1,693,953	825.4%
2018	2,658,540	16,827,155	14,168,615	15.8%	1,629,690	869.4%
2019	2,877,927	17,692,623	14,814,696	16.3%	1,588,093	932.9%
2020	3,032,885	17,632,730	14,599,845	17.2%	1,558,587	936.7%
2021	3,518,372	17,616,615	14,098,243	20.0%	1,512,166	932.3%
2022	3,897,699	17,893,456	13,995,757	21.8%	1,520,904	920.2%
2023	4,443,931	17,667,314	13,223,383	25.2%	1,827,470	723.6%

Summary of Principal Assumptions and Methods

Below is a summary of the principal economic assumptions, cost method, and the method for financing the unfunded actuarial accrued liability:

	Non-Hazardous	Hazardous
Valuation date:	June 30, 2023	June 30, 2023
Actuarial cost method:	Entry Age Normal	Entry Age Normal
Amortization method:	Level percentage of payroll (0% payroll growth assumed)	Level percentage of payroll (0% payroll growth assumed)
Amortization period for contribution rate:	30-year closed period at June 30, 2019 Gains/losses incurring after 2019 will be amortized over separate closed 20-year amortization bases	30-year closed period at June 30, 2019 Gains/losses incurring after 2019 will be amortized over separate closed 20-year amortization bases
Asset valuation method:	5-Year Smoothed Market	5-Year Smoothed Market
Actuarial assumptions:		
Investment rate of return	5.25%	6.25%
Projected salary increases	3.30% to 15.30% (varies by service)	3.55% to 20.05% (varies by service)
Inflation	2.50%	2.50%
Post-retirement benefit adjustments	0.00%	0.00%
Retiree Mortality	System-specific mortality table based on mortality experience from 2013 to 2022, projected with the ultimate rates from MP-2020 mortality improvement scale using a base year of 2023.	System-specific mortality table based on mortality experience from 2013 to 2022, projected with the ultimate rates from MP-2020 mortality improvement scale using a base year of 2023.

Solvency Test
Retirement Benefits
(Dollar amounts expressed in thousands)

June 30,	Actuarial Accrued Liability: Active Member Contributions	Actuarial Accrued Liability: Retired Members & Beneficiaries	Actuarial Accrued Liability: Active Members (Employer Financed)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets: Active	Portion of Aggregate Accrued Liabilities Covered by Assets: Retired	Portion of Aggregate Accrued Liabilities Covered by Assets: ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-Hazardous Members							
2014	$ 928,558	$ 8,870,693	$ 1,750,860	$ 2,423,957	100.0%	16.9%	0.0%
2015	925,934	9,437,468	1,996,271	2,350,990	100.0%	15.1%	0.0%
2016	920,120	10,010,168	2,294,410	2,112,286	100.0%	11.9%	0.0%
2017	934,559	11,608,346	3,048,736	2,123,623	100.0%	10.2%	0.0%
2018	892,033	11,929,019	2,854,180	2,019,278	100.0%	9.4%	0.0%
2019	881,020	12,513,231	3,072,177	2,206,280	100.0%	10.6%	0.0%
2020	869,196	12,467,522	3,012,243	2,323,298	100.0%	11.7%	0.0%
2021	877,142	12,425,951	3,018,279	2,735,876	100.0%	15.0%	0.0%
2022	859,591	12,700,595	3,016,445	3,065,263	100.0%	17.4%	0.0%
2023	889,146	12,013,685	3,401,447	3,552,471	100.0%	22.2%	0.0%
Hazardous Members							
2014	$ 83,664	$ 581,231	$ 151,955	$ 527,897	100.0%	76.4%	0.0%
2015	83,606	633,189	178,638	556,688	100.0%	74.7%	0.0%
2016	86,705	648,482	201,519	559,487	100.0%	72.9%	0.0%
2017	93,350	746,350	281,720	607,159	100.0%	68.8%	0.0%
2018	89,106	810,311	252,506	639,262	100.0%	67.9%	0.0%
2019	86,663	879,818	259,714	671,647	100.0%	66.5%	0.0%
2020	95,528	898,128	290,113	709,587	100.0%	68.4%	0.0%
2021	97,559	916,431	281,253	782,496	100.0%	74.7%	0.0%
2022	94,538	946,328	275,959	832,436	100.0%	78.0%	0.0%
2023	103,310	929,320	330,406	891,460	100.0%	84.8%	0.0%

INSURANCE BENEFITS

ACTUARIAL TABLES

Development of Unfunded Actuarial Accrued Liability
Insurance Benefits

(Dollar amounts expressed in thousands)

		June 30, 2023	
		Non-Hazardous (1)	Hazardous (2)
1.	Projected payroll of active members	$ 1,615,868	$ 211,602
2.	Present value of future pay	$ 11,122,094	$ 1,423,305
3.	Normal cost rate		
	a. Total normal cost rate	1.94%	2.77%
	b. Less: member contribution rate	-0.54%	-0.75%
	c. Employer normal cost rate	1.40%	2.02%
4.	Actuarial accrued liability for active members		
	a. Present value of future benefits	$ 1,029,739	$ 148,296
	b. Less: present value of future normal costs	(192,974)	(34,973)
	c. Actuarial accrued liability	$ 836,765	$ 113,323
5.	Total actuarial accrued liability		
	a. Retirees and beneficiaries	$ 886,696	$ 235,809
	b. Inactive members	153,648	14,380
	c. Active members (Item 4c)	836,765	113,323
	d. Total	$ 1,877,109	$ 363,512
6.	Actuarial value of assets	$ 1,532,895	$ 619,519
7.	Unfunded actuarial accrued liability (UAAL) (Item 5d - Item 6)	$ 344,214	$ (256,007)
8.	Funded Ratio	81.7%	170.4%

Development of Actuarially Determined Contribution Rate
Insurance Benefits

		June 30, 2023	
		Non-Hazardous (1)	Hazardous (2)
1.	Total normal cost rate	1.94%	2.77%
2.	Less: member contribution rate	-0.54%	-0.75%
3.	Total employer normal cost rate	1.40%	2.02%
4.	Administrative expenses	0.05%	0.06%
5.	Net employer normal cost rate	1.45%	2.08%
6.	UAAL amortization contribution rate	N/A	-11.29%
7.	Total calculated employer contribution payable as a percentage of covered payroll Max (0%, item 5. + item6.)	1.45%	0.00%
8.	Total amortization cost to be allocated amongst employers	$ 1,973	N/A

Note: Per House Bill 8 (passed during the 2021 legislative session), amortization cost for the KERS Non-Hazardous fund is allocated amongst employers based on their 2019 Actuarial Accrued Liability See appendix D for more information. Amortization cost for the hazardous fund is included in the contribution rate, payable as a percentage of payroll.

Actuarial Balance Sheet

Non-Hazardous Members Insurance

(Dollar amounts expressed in thousands)

		June 30, 2023 (1)	June 30, 2022 (2)
1.	Assets - Present and Expected Future Resources		
	a. Current assets (actuarial value)	$ 1,532,895	$ 1,409,553
	b. Present value of future member contributions	$ 71,426	$ 58,444
	c. Present value of future employer contributions		
	i. Normal cost contributions	$ 121,548	$ 151,638
	ii. Unfunded accrued liability contributions	344,214	372,833
	iii. Total future employer contributions	$ 465,762	$ 524,471
	d. Total assets	$ 2,070,083	$ 1,992,468
2.	Liabilities - Present Value of Expected Future Benefit Payments		
	a. Active members		
	i. Present value of future normal costs	$ 192,974	$ 210,082
	ii. Accrued liability	836,765	815,335
	iii. Total present value of future benefits	$ 1,029,739	$ 1,025,417
	b. Present value of benefits payable on account of current retired members and beneficiaries	$ 886,696	$ 881,211
	c. Present value of benefits payable on account of current inactive members	$ 153,648	$ 85,840
	d. Total liabilities	$ 2,070,083	$ 1,992,468

Actuarial Balance Sheet

Hazardous Members Insurance

(Dollar amounts expressed in thousands)

		June 30, 2023 (1)	June 30, 2022 (2)
1.	Assets - Present and Expected Future Resources		
	a. Current assets (actuarial value)	$ 619,519	$ 597,701
	b. Present value of future member contributions	$ 12,197	$ 10,480
	c. Present value of future employer contributions		
	i. Normal cost contributions	$ 22,776	$ 35,517
	ii. Unfunded accrued liability contributions	(256,007)	(250,657)
	iii. Total future employer contributions	$ (233,231)	$ (215,140)
	d. Total assets	$ 398,485	$ 393,041
2.	Liabilities - Present Value of Expected Future Benefit Payments		
	a. Active members		
	i. Present value of future normal costs	$ 34,973	$ 45,997
	ii. Accrued liability	113,323	114,459
	iii. Total present value of future benefits	$ 148,296	$ 160,456
	b. Present value of benefits payable on account of current retired members and beneficiaries	$ 235,809	$ 223,706
	c. Present value of benefits payable on account of current inactive members	$ 14,380	$ 8,879
	d. Total liabilities	$ 398,485	$ 393,041

Reconciliation of Insurance Net Assets

(Dollar amounts expressed in thousands)[1]

	Year Ending June 30, 2023 (1) Non-Hazardous	Year Ending June 30, 2023 (2) Hazardous
1. Value of assets at beginning of year	$ 1,364,419	$ 588,162
2. Revenue for the year		
a. Contributions		
i. Member contributions	$ 8,358	$ 1,584
ii. Employer contributions	123,223	37
iii. Other contributions (less 401h)	5,885	1,452
iv. Total	$ 137,466	$ 3,074
b. Income		
i. Interest, dividends, and other income	$ 42,390	$ 17,853
ii. Investment expenses	(10,321)	(4,765)
iii. Net	$ 32,069	$ 13,089
c. Net realized and unrealized gains (losses)	100,361	40,684
d. Total revenue	$ 269,896	$ 56,846
3. Expenditures for the year		
a. Disbursements		
i. Refunds	$ 0	$ 0
ii. Healthcare premium subsidies	103,952	19,748
iii. Other benefit payments[2]	(3,160)	(220)
iv. Transfers to other systems	0	0
v. Total	$ 100,792	$ 19,528
b. Administrative expenses and depreciation	771	123
c. Total expenditures	$ 101,563	$ 19,652
4. Increase in net assets (Item 2. - Item 3.)	$ 168,333	$ 37,194
5. Value of assets at end of year (Item 1. + Item 4.)	$ 1,532,752	$ 625,356
6. Net external cash flow		
a. Dollar amount	$ 35,903	$ (16,578)
b. Percentage of market value	2.5%	-2.7%
7. Estimated annual return on net assets	9.6%	9.3%

[1] Amounts may not add due to rounding and include 401h assets

[2] Benefit payments have been offset by Medicare Drug Reimbursements, Insurance Premiums, and Humana Gain Share Payments

Development of Actuarial Value of Assets

Non-Hazardous Members Insurance

(Dollar amounts expressed in thousands)*

	Year Ending	June 30, 2023
1.	Actuarial value of assets at beginning of year	$ 1,409,553
2.	Market value of assets at beginning of year	$ 1,364,419
3.	Net new investments	
	a. Contributions	$ 137,466
	b. Benefit payments	(100,792)
	c. Administrative expenses	(771)
	d. Subtotal	$ 35,903
4.	Market value of assets at end of year	$ 1,532,752
5.	Net earnings (Item 4. - Item 2. - Item 3.d.)	$ 132,430
6.	Assumed investment return rate for fiscal year	6.25%
7.	Expected return for immediate recognition	$ 86,398
8.	Excess return for phased recognition	$ 46,032
9.	Phased-in recognition, 20% of excess return on assets for prior years:	

	Fiscal Year Ending June 30,	Excess Return	Recognized Amount
a.	2023	$ 46,032	$ 9,206
b.	2022	(178,776)	(35,755)
c.	2021	201,770	40,354
d.	2020	(52,052)	(10,410)
e.	2019	(11,768)	(2,354)
f.	Total		$ 1,041

10.	Actuarial value of assets as of June 30, 2023 (Item 1. + Item 3.d. + Item 7.+ Item 9.f.)	$ 1,532,895
11.	Ratio of actuarial value to market value	100.0%
12.	Estimated annual return on actuarial value of assets	6.1%

* Amounts may not add due to rounding

Development of Actuarial Value of Assets

Hazardous Members Insurance

(Dollar amounts expressed in thousands)*

	Year Ending		June 30, 2023
1.	Actuarial value of assets at beginning of year	$	597,701
2.	Market value of assets at beginning of year	$	588,162
3.	Net new investments		
	a. Contributions	$	3,074
	b. Benefit payments		(19,528)
	c. Administrative expenses		(123)
	d. Subtotal	$	(16,578)
4.	Market value of assets at end of year	$	625,356
5.	Net earnings (Item 4. - Item 2. - Item 3.d.)	$	53,772
6.	Assumed investment return rate for fiscal year		6.25%
7.	Expected return for immediate recognition	$	36,242
8.	Excess return for phased recognition	$	17,530

9. Phased-in recognition, 20% of excess return on assets for prior years:

	Fiscal Year Ending June 30,		Excess Return		Recognized Amount
a.	2023	$	17,530	$	3,506
b.	2022		(66,985)		(13,397)
c.	2021		96,144		19,229
d.	2020		(32,268)		(6,454)
e.	2019		(3,651)		(730)
f.	Total			$	2,154

10.	Actuarial value of assets as of June 30, 2023 (Item 1. + Item 3.d. + Item 7.+ Item 9.f.)	$	619,519
11.	Ratio of actuarial value to market value		99.1%
12.	Estimated annual return on actuarial value of assets		6.5%

* Amounts may not add due to rounding

Schedule of Funding Progress
Insurance Benefits
(Dollar amounts expressed in thousands)

June 30,	Actuarial Value of Assets (AVA)	Actuarial Accrued Liability (AAL)	Unfunded Actuarial Accrued Liability (UAAL) (3) - (2)	Funded Ratio (2)/(3)	Annual Covered Payroll	UAAL as % of Payroll (4)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Non-Hazardous Members						
2014	$ 621,237	$ 2,226,760	$ 1,605,523	27.9%	$ 1,577,496	101.8%
2015	695,018	2,413,705	1,718,687	28.8%	1,544,234	111.3%
2016	743,270	2,456,678	1,713,408	30.3%	1,529,249	112.0%
2017	823,918	2,683,496	1,859,578	30.7%	1,531,535	121.4%
2018	887,121	2,435,505	1,548,384	36.4%	1,471,477	105.2%
2019	991,427	2,733,065	1,741,638	36.3%	1,437,647	121.1%
2020	1,095,959	2,564,788	1,468,829	42.7%	1,387,761	105.8%
2021	1,291,472	2,574,112	1,282,640	50.2%	1,349,330	95.1%
2022	1,409,553	1,782,386	372,833	79.1%	1,355,267	27.5%
2023	1,532,895	1,877,109	344,214	81.7%	1,615,868	21.3%
Hazardous Members						
2014	$ 419,396	$ 396,987	$ (22,409)	105.6%	$ 129,076	-17.4%
2015	451,514	374,904	(76,610)	120.4%	128,680	-59.5%
2016	473,160	377,745	(95,415)	125.3%	147,563	-64.7%
2017	493,458	419,439	(74,019)	117.6%	162,418	-45.6%
2018	511,441	393,481	(117,960)	130.0%	158,213	-74.6%
2019	525,315	426,704	(98,611)	123.1%	150,446	-65.5%
2020	539,251	427,977	(111,274)	126.0%	170,826	-65.1%
2021	575,025	424,455	(150,570)	135.5%	162,836	-92.5%
2022	597,701	347,044	(250,657)	172.2%	165,637	-151.3%
2023	619,519	363,512	(256,007)	170.4%	211,602	-121.0%
Total KERS Members						
2014	$ 1,040,633	$ 2,623,747	$ 1,583,114	39.7%	$ 1,706,572	92.8%
2015	1,146,532	2,788,609	1,642,077	41.1%	1,672,914	98.2%
2016	1,216,430	2,834,423	1,617,993	42.9%	1,676,812	96.5%
2017	1,317,376	3,102,935	1,785,559	42.5%	1,693,953	105.4%
2018	1,398,562	2,828,986	1,430,424	49.4%	1,629,690	87.8%
2019	1,516,742	3,159,769	1,643,027	48.0%	1,588,093	103.5%
2020	1,635,210	2,992,765	1,357,555	54.6%	1,558,587	87.1%
2021	1,866,497	2,998,567	1,132,070	62.2%	1,512,166	74.9%
2022	2,007,254	2,129,430	122,176	94.3%	1,520,904	8.0%
2023	2,152,414	2,240,621	88,207	96.1%	1,827,470	4.8%

Solvency Test
Insurance Benefits
(Dollar amounts expressed in thousands)

June 30,	Actuarial Accrued Liability: Active Member Contributions	Actuarial Accrued Liability: Retired Members & Beneficiaries	Actuarial Accrued Liability: Active Members (Employer Financed)	Valuation Assets	Portion of Aggregate Accrued Liabilities Covered by Assets: Active	Portion of Aggregate Accrued Liabilities Covered by Assets: Retired	Portion of Aggregate Accrued Liabilities Covered by Assets: ER Financed
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Non-Hazardous Members							
2014	$ -	$ 1,425,605	$ 801,155	$ 621,237	100.0%	43.6%	0.0%
2015	-	1,428,350	985,355	695,018	100.0%	48.7%	0.0%
2016	-	1,483,636	973,042	743,270	100.0%	50.1%	0.0%
2017	-	1,575,294	1,108,202	823,918	100.0%	52.3%	0.0%
2018	-	1,475,953	959,552	887,121	100.0%	60.1%	0.0%
2019	-	1,686,604	1,046,461	991,427	100.0%	58.8%	0.0%
2020	-	1,589,743	975,045	1,095,959	100.0%	68.9%	0.0%
2021	-	1,609,775	964,337	1,291,472	100.0%	80.2%	0.0%
2022	-	967,051	815,335	1,409,553	100.0%	100.0%	54.3%
2023	-	1,040,344	836,765	1,532,895	100.0%	100.0%	58.9%
Hazardous Members							
2014	$ -	$ 206,477	$ 190,509	$ 419,396	100.0%	100.0%	100.0%
2015	-	221,115	153,789	451,514	100.0%	100.0%	100.0%
2016	-	228,361	149,384	473,160	100.0%	100.0%	100.0%
2017	-	243,816	175,623	493,458	100.0%	100.0%	100.0%
2018	-	248,775	144,706	511,441	100.0%	100.0%	100.0%
2019	-	282,069	144,635	525,315	100.0%	100.0%	100.0%
2020	-	281,924	146,053	539,251	100.0%	100.0%	100.0%
2021	-	288,014	136,441	575,025	100.0%	100.0%	100.0%
2022	-	232,585	114,459	597,701	100.0%	100.0%	100.0%
2023	-	250,189	113,323	619,519	100.0%	100.0%	100.0%

SECTION 4

AMORTIZATION BASES

Amortization of Unfunded Liability

Non-Hazardous Members Retirement

Valuation Year Base Established	Original Amortization Base	Remaining at June 30, 2023	Payments for FYE 2025	Funding Period at June 30, 2023
June 30, 2019	$ 14,260,148	$ 13,488,943	$ 938,364	26
June 30, 2020	(153,145)	(30,739)	(2,708)	17
June 30, 2021	(342,123)	(348,582)	(29,636)	18
June 30, 2022	172,536	(64,626)	(5,319)	19
June 30, 2023	(293,189)	(293,189)	(46,113)	20
Total		$ 12,751,807	$ 854,588	

Projected Payroll for FYE 2025	N/A
Amortization Payments as a Percentage of Payroll	N/A

Hazardous Members Retirement

Valuation Year Base Established	Original Amortization Base	Remaining at June 30, 2023	Payments for FYE 2025	Funding Period at June 30, 2023
June 30, 2019	$ 554,548	$ 527,304	$ 40,306	26
June 30, 2020	24,023	18,101	1,706	17
June 30, 2021	(49,498)	(49,198)	(4,491)	18
June 30, 2022	(19,031)	(21,188)	(1,878)	19
June 30, 2023	(3,443)	(3,443)	(1,729)	20
Total		$ 471,576	$ 33,914	

Projected Payroll for FYE 2025	$ 211,602
Amortization Payments as a Percentage of Payroll	16.03%

Note:
Budgeted contribution rates for FYE 2024 were known at the time of the June 30, 2023 Valuation.
Amortization bases established at this valuation date were adjusted accordingly.
Per House Bill 8 (passed during the 2021 legislative session), amortization cost for the KERS Non-Hazardous fund is allocated amongst employers based on their 2019 Actuarial Accrued Liability. See appendix D for more information. Amortization cost for the hazardous fund is included in the contribution rate, payable as a percentage of payroll.

Amortization of Unfunded Liability

Non-Hazardous Members Insurance

Valuation Year Base Established	Original Amortization Base	Remaining at June 30, 2023	Payments for FYE 2025	Funding Period at June 30, 2023
June 30, 2019	$ 1,741,638	$ 1,644,445	$ 128,822	26
June 30, 2020	(246,890)	(236,611)	(22,715)	17
June 30, 2021	(159,148)	(164,212)	(15,279)	18
June 30, 2022	(883,398)	(938,609)	(84,872)	19
June 30, 2023	39,201	39,201	(3,983)	20
Total		$ 344,214	$ 1,973	

Projected Payroll for FYE 2025	N/A
Amortization Payments as a Percentage of Payroll	N/A

Hazardous Members Insurance

Valuation Year Base Established	Original Amortization Base	Remaining at June 30, 2023	Payments for FYE 2025	Funding Period at June 30, 2023
June 30, 2019	$ (98,611)	$ (97,539)	$ (7,641)	26
June 30, 2020	(9,508)	(10,035)	(963)	17
June 30, 2021	(39,458)	(42,842)	(3,986)	18
June 30, 2022	(97,145)	(110,047)	(9,951)	19
June 30, 2023	4,456	4,456	(1,220)	20
Total		$ (256,007)	$ (23,761)	

Projected Payroll for FYE 2025	$ 210,488
Amortization Payments as a Percentage of Payroll	-11.29%

Note:
Budgeted contribution rates for FYE 2024 were known at the time of the June 30, 2023 Valuation.
Amortization bases established at this valuation date were adjusted accordingly.
Per House Bill 8 (passed during the 2021 legislative session), amortization cost for the KERS Non-Hazardous fund is allocated amongst employers based on their 2019 Actuarial Accrued Liability. See appendix D for more information. Amortization cost for the hazardous fund is included in the contribution rate, payable as a percentage of payroll.

SECTION 5

MEMBERSHIP INFORMATION

Membership Tables

Summary of Membership Data

(Total dollar amounts expressed in thousands)

		Non-Hazardous June 30, 2023 (1)	Hazardous June 30, 2023 (2)	Total June 30, 2023 (3)	Total June 30, 2022 (4)
1.	Active members				
a.	Males	11,682	2,734	14,416	13,658
b.	Females	19,701	1,152	20,853	19,510
c.	Total members	31,383	3,886	35,269	33,168
d.	Total annualized prior year salaries	$ 1,615,868	$ 211,602	$ 1,827,470	$ 1,520,904
e.	Average salary[3]	$ 51,489	$ 54,452	$ 51,815	$ 45,855
f.	Average age	45.7	39.7	45.0	45.4
g.	Average service	10.9	7.2	10.5	11.0
h.	Member contributions with interest	$ 889,146	$ 103,310	$ 992,456	$ 954,129
i.	Average contributions with interest[3]	$ 28,332	$ 26,585	$ 28,140	$ 28,767
2.	Vested inactive members[2]				
a.	Number	31,085	2,326	33,411	33,915
b.	Total annual deferred benefits	$ 88,710	$ 5,407	$ 94,117	$ 94,819
c.	Average annual deferred benefit[3]	$ 2,854	$ 2,325	$ 2,817	$ 2,796
d.	Average age at the valuation date	53.7	48.6	53.3	52.7
3.	Nonvested inactive members[2]				
a.	Number	24,895	6,251	31,146	29,749
b.	Total member contributions with interest	$ 52,432	$ 12,980	$ 65,412	$ 60,683
c.	Average contributions with interest[3]	$ 2,106	$ 2,076	$ 2,100	$ 2,040
4.	Service retirees[1]				
a.	Number	41,427	4,166	45,593	45,437
b.	Total annual benefits	$ 878,520	$ 67,170	$ 945,690	$ 944,366
c.	Average annual benefit[3]	$ 21,206	$ 16,123	$ 20,742	$ 20,784
d.	Average age at the valuation date	70.8	66.0	70.3	69.9
5.	Disabled retirees[1]				
a.	Number	1,652	159	1,811	1,861
b.	Total annual benefits	$ 21,829	$ 1,518	$ 23,347	$ 24,048
c.	Average annual benefit[3]	$ 13,214	$ 9,547	$ 12,892	$ 12,922
d.	Average age at the valuation date	67.5	61.1	66.9	66.5
6.	Beneficiaries[1]				
a.	Number	5,330	562	5,892	5,747
b.	Total annual benefits	$ 83,931	$ 6,179	$ 90,110	$ 86,643
c.	Average annual benefit[3]	$ 15,747	$ 10,995	$ 15,294	$ 15,076
d.	Average age at the valuation date	70.6	67.6	70.3	70.1

[1] 2,423 members receiving benefits in both the non-hazardous and hazardous fund. Members' headcounts and hazardous benefits included in the hazardous summary above. Members' additional $25,156,000 in non-hazardous annual benefits not included in summary above.

[2] Vested inactive member section includes Tier 1 members eligible for a benefit equal to the actuarially equivalent of two times the member's contribution balance.

[3] Average dollar amounts shown are expressed to the dollar.

Summary of Historical Active Membership

	Active Members		Covered Payroll[1]		Average Annual Pay	
June 30,	Number	Percent Increase /(Decrease)	Amount in Thousands	Percent Increase /(Decrease)	Amount	Percent Increase /(Decrease)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Non-Hazardous Members			
2014	40,365		$ 1,577,496		$ 39,081	
2015	39,056	-3.2%	1,544,234	-2.1%	39,539	1.2%
2016	37,779	-3.3%	1,529,249	-1.0%	40,479	2.4%
2017	37,234	-1.4%	1,531,535	0.1%	41,133	1.6%
2018	35,139	-5.6%	1,471,477	-3.9%	41,876	1.8%
2019	33,696	-4.1%	1,437,647	-2.3%	42,665	1.9%
2020	31,703	-5.9%	1,387,761	-3.5%	43,774	2.6%
2021	30,186	-4.8%	1,349,330	-2.8%	44,701	2.1%
2022	29,551	-2.1%	1,355,267	0.4%	45,862	2.6%
2023	31,383	6.2%	1,615,868	19.2%	51,489	12.3%
			Hazardous Members			
2014	4,024		$ 129,076		$ 32,077	
2015	3,886	-3.4%	128,680	-0.3%	33,114	3.2%
2016	3,959	1.9%	147,563	14.7%	37,273	12.6%
2017	4,047	2.2%	162,418	10.1%	40,133	7.7%
2018	3,929	-2.9%	158,213	-2.6%	40,268	0.3%
2019	3,705	-5.7%	150,446	-4.9%	40,606	0.8%
2020	4,094	10.5%	170,826	13.5%	41,726	2.8%
2021	3,827	-6.5%	162,836	-4.7%	42,549	2.0%
2022	3,617	-5.5%	165,637	1.7%	45,794	7.6%
2023	3,886	7.4%	211,602	27.8%	54,452	18.9%

[1] Covered payroll is the annualized, projected compensation for the following year and does not include payroll attributable to working retirees.

Distribution of Active Members by Age and by Years of Service

Non-Hazardous Members

Attained Age	Years of Credited Service												
	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 20	32	1	0	0	0	0	0	0	0	0	0	0	33
	$23,180	$22,522	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$23,160
20-24	586	330	100	22	8	0	0	0	0	0	0	0	1,046
	$28,946	$39,306	$42,649	$42,483	$43,081	$0	$0	$0	$0	$0	$0	$0	$33,917
25-29	727	590	323	265	187	262	1	0	0	0	0	0	2,355
	$31,784	$39,746	$44,495	$44,754	$46,577	$48,149	$56,620	$0	$0	$0	$0	$0	$39,988
30-34	541	483	226	245	217	1,030	206	1	0	0	0	0	2,949
	$33,589	$40,975	$47,385	$46,894	$45,971	$51,523	$53,856	$47,311	$0	$0	$0	$0	$45,557
35-39	492	347	172	176	187	954	884	239	6	0	0	0	3,457
	$35,162	$41,514	$46,258	$49,584	$48,527	$53,649	$56,418	$57,033	$53,682	$0	$0	$0	$49,890
40-44	441	356	165	198	183	797	849	1,039	411	41	0	0	4,480
	$35,454	$42,226	$46,378	$48,109	$51,526	$54,181	$56,592	$59,940	$60,232	$60,428	$0	$0	$53,128
45-49	366	295	133	144	142	666	657	883	1,081	301	3	0	4,671
	$36,449	$42,019	$43,675	$48,830	$49,736	$53,462	$57,094	$60,623	$63,364	$63,932	$87,750	$0	$55,724
50-54	300	249	132	139	164	605	617	701	926	574	103	9	4,519
	$35,094	$41,787	$48,594	$48,498	$49,256	$50,495	$55,335	$59,589	$61,410	$67,685	$68,826	$75,471	$55,790
55-59	197	209	91	110	107	531	490	635	622	421	126	40	3,579
	$34,573	$41,135	$44,501	$47,378	$50,153	$49,865	$52,305	$55,584	$59,001	$65,252	$72,633	$78,255	$54,174
60-64	128	122	53	84	88	375	429	547	503	282	75	51	2,737
	$36,792	$42,359	$46,911	$53,143	$47,842	$49,091	$53,010	$53,664	$55,818	$62,735	$68,615	$73,269	$53,413
65 & Over	61	61	33	36	32	235	289	327	234	143	47	59	1,557
	$44,847	$46,375	$47,713	$65,196	$65,889	$50,646	$55,091	$55,813	$58,049	$63,319	$73,254	$74,363	$56,607
Total	3,871	3,043	1,428	1,419	1,315	5,455	4,422	4,372	3,783	1,762	354	159	31,383
	$33,594	$41,100	$45,720	$48,154	$48,943	$51,877	$55,409	$58,133	$60,480	$65,147	$70,885	$75,054	$51,489

Distribution of Active Members by Age and by Years of Service

Hazardous Members

Attained Age	Years of Credited Service												
	0 Count & Avg. Comp.	1 Count & Avg. Comp.	2 Count & Avg. Comp.	3 Count & Avg. Comp.	4 Count & Avg. Comp.	5-9 Count & Avg. Comp.	10-14 Count & Avg. Comp.	15-19 Count & Avg. Comp.	20-24 Count & Avg. Comp.	25-29 Count & Avg. Comp.	30-34 Count & Avg. Comp.	35 & Over Count & Avg. Comp.	Total Count & Avg. Comp.
Under 20	2	0	0	0	0	0	0	0	0	0	0	0	2
	$51,775	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$51,775
20-24	186	115	24	6	1	1	0	0	0	0	0	0	333
	$38,066	$58,852	$58,297	$55,402	$42,804	$72,440	$0	$0	$0	$0	$0	$0	$47,132
25-29	143	125	100	92	49	55	0	0	0	0	0	0	564
	$40,237	$53,940	$54,682	$57,089	$58,470	$56,120	$0	$0	$0	$0	$0	$0	$51,717
30-34	120	78	49	67	38	226	42	0	0	0	0	0	620
	$41,328	$55,277	$55,168	$51,982	$55,848	$58,551	$59,627	$0	$0	$0	$0	$0	$53,735
35-39	82	52	29	35	28	137	125	43	0	0	0	0	531
	$39,227	$51,949	$52,078	$50,034	$61,497	$57,091	$60,245	$62,561	$0	$0	$0	$0	$54,507
40-44	60	32	20	20	17	94	97	159	16	1	0	0	516
	$39,262	$53,516	$61,526	$55,455	$54,717	$57,814	$57,552	$60,122	$71,921	$55,940	$0	$0	$56,436
45-49	50	32	11	22	16	80	57	104	49	4	0	0	425
	$39,444	$55,804	$50,902	$55,464	$57,532	$55,576	$60,996	$64,751	$65,380	$61,000	$0	$0	$57,796
50-54	33	33	15	17	14	69	65	93	35	16	0	0	390
	$36,616	$47,910	$48,450	$61,456	$62,629	$54,831	$59,789	$63,054	$65,426	$63,105	$0	$0	$57,105
55-59	20	16	13	19	8	72	51	60	21	9	2	1	292
	$34,288	$51,671	$60,489	$56,298	$55,376	$55,986	$57,796	$58,369	$67,036	$62,673	$93,798	$58,815	$56,543
60-64	10	7	5	6	9	29	33	29	20	1	1	0	150
	$37,500	$58,091	$45,979	$62,908	$67,242	$51,553	$56,031	$61,967	$60,096	$60,968	$84,316	$0	$56,550
65 & Over	1	3	0	1	1	16	18	15	5	3	0	0	63
	$45,689	$37,432	$0	$27,088	$67,811	$56,485	$52,699	$56,147	$65,012	$51,552	$0	$0	$54,399
Total	707	493	266	285	181	779	488	503	146	34	3	1	3,886
	$39,259	$54,662	$54,941	$54,971	$58,539	$56,876	$58,864	$61,608	$65,610	$61,450	$90,637	$58,815	$54,452

Distribution of Annuitant Monthly Benefit by Status and Age
Non-Hazardous Retirees and Beneficiaries
(Dollar amounts expressed in thousands)

	Retirement		Disability		Survivors & Beneficiaries		Total	
Current Age	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Under 50	352	$ 8,138	59	$ 796	546	$ 6,445	957	$ 15,380
50 - 54	1,295	32,098	103	1,496	209	2,911	1,607	36,505
55 - 59	3,097	74,626	206	3,105	286	3,892	3,589	81,623
60 - 64	5,437	124,567	283	3,814	488	7,024	6,208	135,405
65 - 69	8,990	186,904	360	4,846	665	10,371	10,015	202,120
70 - 74	9,689	205,498	289	3,646	848	15,086	10,826	224,230
75 - 79	6,708	140,543	176	2,110	818	14,704	7,702	157,357
80 - 84	3,498	67,709	105	1,209	690	12,118	4,293	81,036
85 - 89	1,593	27,257	57	672	461	7,360	2,111	35,289
90 And Over	768	11,181	14	136	319	4,019	1,101	15,335
Total	**41,427**	**$ 878,520**	**1,652**	**$ 21,829**	**5,330**	**$ 83,931**	**48,409**	**$ 984,280**

*Amounts may not add due to rounding

Distribution of Annuitant Monthly Benefit by Status and Age
Hazardous Retirees and Beneficiaries
(Dollar amounts expressed in thousands)

	Retirement		Disability		Survivors & Beneficiaries		Total	
Current Age	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount	Number of Annuitants	Total Annual Benefit Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Under 50	236	$ 4,925	26	$ 302	69	$ 713	331	$ 5,939
50 - 54	405	7,897	17	196	29	437	451	8,531
55 - 59	540	9,705	34	299	31	347	605	10,352
60 - 64	649	11,398	25	262	75	996	749	12,655
65 - 69	763	12,056	26	216	83	943	872	13,215
70 - 74	789	11,412	20	174	89	1,108	898	12,694
75 - 79	514	6,976	4	39	84	830	602	7,845
80 - 84	186	2,001	3	10	53	426	242	2,437
85 - 89	70	646	4	20	34	256	108	922
90 And Over	14	155	0	0	15	121	29	277
Total	**4,166**	**$ 67,170**	**159**	**$ 1,518**	**562**	**$ 6,179**	**4,887**	**$ 74,867**

*Amounts may not add due to rounding

Non-Hazardous Retired Lives Summary

Form of Payment	Male Lives Number	Male Lives Monthly Benefit Amount	Female Lives Number	Female Lives Monthly Benefit Amount	Total Number	Total Monthly Benefit Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Basic	4,510	$ 7,900,032	13,587	$ 19,446,072	18,097	$ 27,346,105
Joint & Survivor:						
100% to Beneficiary	2,922	5,212,084	1,711	2,184,594	4,633	7,396,678
66 2/3% to Beneficiary	783	2,130,068	664	1,223,230	1,447	3,353,298
50% to Beneficiary	1,096	2,748,752	1,614	3,133,549	2,710	5,882,301
Pop-up Option	4,010	9,641,591	3,953	7,621,020	7,963	17,262,611
Social Security Option:						
Age 62 Basic	356	723,836	870	1,481,539	1,226	2,205,375
Age 62 Survivorship	681	1,400,388	584	935,826	1,265	2,336,215
Partial Deferred (Old Plan)	0	0	0	0	0	0
Widows Age 60	0	0	0	0	0	0
5 Years Certain	0	0	0	0	0	0
10 Years Certain	0	0	0	0	0	0
10 Years Certain & Life	994	1,764,021	2,388	3,620,153	3,382	5,384,174
15 Years Certain & Life	460	738,013	740	1,050,660	1,200	1,788,673
20 Years Certain & Life	447	970,075	709	1,103,601	1,156	2,073,675
Total:	16,259	$ 33,228,860	26,820	$ 41,800,243	43,079	$ 75,029,104

Hazardous Retired Lives Summary

Form of Payment	Male Lives Number	Male Lives Monthly Benefit Amount	Female Lives Number	Female Lives Monthly Benefit Amount	Total Number	Total Monthly Benefit Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Basic	754	$ 851,378	618	$ 697,590	1,372	$ 1,548,968
Joint & Survivor:						
100% to Beneficiary	512	636,774	81	97,986	593	734,761
66 2/3% to Beneficiary	137	202,100	38	50,153	175	252,254
50% to Beneficiary	185	290,951	79	118,437	264	409,388
Pop-up Option	982	1,561,452	222	316,292	1,204	1,877,745
Social Security Option:						
Age 62 Basic	59	69,526	29	24,587	88	94,113
Age 62 Survivorship	137	167,056	20	21,679	157	188,735
Partial Deferred (Old Plan)	0	0	0	0	0	0
Widows Age 60	0	0	0	0	0	0
5 Years Certain	0	0	0	0	0	0
10 Years Certain	53	102,407	17	24,581	70	126,988
10 Years Certain & Life	117	151,520	84	84,132	201	235,652
15 Years Certain & Life	55	68,326	35	32,672	90	100,998
20 Years Certain & Life	72	95,412	39	58,951	111	154,363
Total:	3,063	$ 4,196,903	1,262	$ 1,527,062	4,325	$ 5,723,965

Non-Hazardous Beneficiary Lives Summary

Form of Payment	Male Lives Number	Male Lives Monthly Benefit Amount	Female Lives Number	Female Lives Monthly Benefit Amount	Total Number	Total Monthly Benefit Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Basic	34	$ 25,616	53	$ 71,084	87	$ 96,700
Joint & Survivor:						
100% to Beneficiary	382	344,005	1,610	1,948,572	1,992	2,292,577
66 2/3% to Beneficiary	78	79,044	314	455,208	392	534,252
50% to Beneficiary	182	162,309	492	445,720	674	608,029
Pop-up Option	285	456,281	956	1,734,866	1,241	2,191,147
Social Security Option:						
Age 62 Basic	1	1,293	12	11,412	13	12,705
Age 62 Survivorship	79	111,779	342	606,221	421	718,000
Partial Deferred (Old Plan)	0	0	0	0	0	0
Widows Age 60	0	0	2	611	2	611
5 Years Certain	42	41,568	64	65,233	106	106,801
10 Years Certain	81	85,619	96	72,688	177	158,307
10 Years Certain & Life	34	35,086	50	52,726	84	87,812
15 Years Certain & Life	20	23,896	48	44,948	68	68,844
20 Years Certain & Life	23	33,782	50	84,674	73	118,456
Total:	1,241	$ 1,400,279	4,089	$ 5,593,963	5,330	$ 6,994,242

Hazardous Beneficiary Lives Summary

Form of Payment	Male Lives Number	Male Lives Monthly Benefit Amount	Female Lives Number	Female Lives Monthly Benefit Amount	Total Number	Total Monthly Benefit Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Basic	3	$ 1,399	14	$ 10,163	17	$ 11,562
Joint & Survivor:						
100% to Beneficiary	18	13,372	189	147,731	207	161,103
66 2/3% to Beneficiary	1	481	21	10,767	22	11,247
50% to Beneficiary	6	3,731	47	22,522	53	26,253
Pop-up Option	12	15,150	156	183,979	168	199,128
Social Security Option:						
Age 62 Basic	0	0	2	47	2	47
Age 62 Survivorship	2	801	53	53,682	55	54,482
Partial Deferred (Old Plan)	0	0	0	0	0	0
Widows Age 60	0	0	0	0	0	0
5 Years Certain	1	3,247	6	10,191	7	13,438
10 Years Certain	2	2,253	8	10,618	10	12,871
10 Years Certain & Life	0	0	3	1,624	3	1,624
15 Years Certain & Life	2	3,644	1	893	3	4,537
20 Years Certain & Life	2	4,048	13	14,571	15	18,620
Total:	49	$ 48,125	513	$ 466,787	562	$ 514,912

Schedule of Retirees Added to And Removed from Rolls

(Dollar amounts except average allowance expressed in thousands)

Year Ended	Added to Rolls	Removed from Rolls	Rolls End of the Year		% Increase in Annual Benefit	Average Annual Benefit
	Number	Number	Number	Annual Benefits		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
			Non-Hazardous			
2014	2,067	1,038	41,223	$ 866,047		$ 21,009
2015	2,140	1,094	42,269	883,578	2.0%	20,904
2016	2,441	706	44,004	934,930	5.8%	21,246
2017	2,181	1,269	44,916	921,302	-1.5%	20,512
2018	2,853	1,243	46,526	952,951	3.4%	20,482
2019	2,226	1,342	47,410	968,706	1.7%	20,433
2020	1,806	1,883	47,333	967,963	-0.1%	20,450
2021	2,026	1,659	47,700	972,434	0.5%	20,386
2022	2,471	1,976	48,195	981,369	0.9%	20,362
2023	2,115	1,901	48,409	984,280	0.3%	20,333
			Hazardous			
2014	256	66	3,620	$ 54,272		$ 14,992
2015	203	65	3,758	56,431	4.0%	15,016
2016	237	29	3,966	59,001	4.6%	14,877
2017	206	79	4,093	59,162	0.3%	14,455
2018	321	44	4,370	64,050	8.3%	14,657
2019	227	60	4,537	67,523	5.4%	14,883
2020	214	123	4,628	69,081	2.3%	14,927
2021	263	165	4,726	70,803	2.5%	14,982
2022	300	176	4,850	73,689	4.1%	15,194
2023	210	173	4,887	74,867	1.6%	15,320

SECTION 6

ASSESSMENT AND DISCLOSURE OF RISK

Risks Associated with Measuring the Accrued Liability And Actuarially Determined Contribution

(As Required by ASOP No. 51)

The determination of KERS's accrued liability and actuarially determined contribution requires the use of assumptions regarding future economic and demographic experience. The risk measures illustrated in this section are intended to aid stakeholders in understanding the effects of future experience differing from the assumptions used in performing an actuarial valuation. These risk measures may also help with illustrating the potential volatility in the funded status and actuarially determined contributions that result from differences between actual experience and the expected experience based on the actuarial assumptions.

Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience (economic and demographic) differing from the assumptions, changes in assumptions due to changing conditions, changes in contribution requirements due to modifications to the funding policy, and changes in the liability and cost due to changes in plan provisions or applicable law. The scope of this actuarial valuation does not include any analysis of the potential range of such future measurements.

Examples of risk that may reasonably be anticipated to significantly affect the System's future financial condition include:

- Investment risk – actual investment returns may differ from expected returns;
- Longevity risk – members may live longer or shorter than expected and receive pensions for a time period different than assumed;
- Other demographic risks – members may terminate, retire or become disabled at times or with benefits other than assumed resulting in actual future contributions differing from expected;
- Salary and payroll risk – actual salaries and total payroll may differ from expected, resulting in actual future accrued liabilities or contributions differing from expected;
- Asset/Liability mismatch – changes in assets may be inconsistent with changes in liabilities, thereby altering the relative difference between the assets and liabilities which may alter the funded status and contribution requirements;
- Contribution risk – actual contributions may differ from expected future contributions (for example, actual contributions not being paid in accordance with the System's funding policy, withdrawal liability assessments or other anticipated payments to the plan are not being paid, or material changes occurring in the anticipated number of covered employees, covered payroll, or another relevant contribution base).

Effects of certain experience can generally be anticipated. For example, if investment returns since the most recent actuarial valuation are less (or more) than the assumed rate of return, then the funded status of the plan can be expected to decrease (or increase) more than anticipated.

The required contributions in this report were established in accordance with applicable Statutes and assumptions adopted by the Board. However, stakeholders should be aware that the scheduled contributions specified in State Code do not necessarily guarantee that the contribution requirements will not increase in a future year.

Employer Risk with Contribution Rates

Currently contributions for the hazardous fund are collected from participating employers based on the employer's total payroll of employees who are earning benefits in KERS (i.e. covered payroll). The actuarially determined contribution rate is comprised of two components - the normal cost rate (to pay for the benefits accruing in the next year) and the unfunded amortization (to pay for the benefits accrued by members in previous years). The unfunded amortization is calculated by first determining the dollar amount necessary to pay for the unfunded liability based on KERS's funding policy, and then by dividing that dollar amount by expected covered payroll to convert that contribution requirement to a percentage of payroll (i.e. a contribution rate).

As the contribution requirement, as a percentage of payroll, increases then there is increased incentive for participating employers to make deliberate business action to reduce their payroll reported to the System in order to reduce their pension cost. House Bill 8 passed during the 2021 legislative session and changed how the amortization cost would be collected and allocated amongst employers in the non-hazardous fund. This portion of the contribution requirement is no longer collected as a percentage of payroll for the non-hazardous fund.

Plan Specific Risk Measures

Risks faced by a pension plan evolve over time. A relatively new plan with virtually no assets and paying few benefits will experience lower investment risk than a mature plan with a significant amount of assets and large number of members receiving benefits. There are a few measures that can assist stakeholders in understanding and comparing the maturity of a plan to other systems, which include:

- Ratio of market value of assets to payroll: The relationship between assets and payroll is a useful indicator of the potential volatility of contributions. If assets are approximately the same as covered payroll, an investment return that is 5% different than assumed would equal 5% of payroll. In another example, if the assets are approximately twice as large as covered payroll, an investment return that is 5% different than assumed would equal 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.
- Ratio of actuarial accrued liability to payroll: The ratio of actuarial accrued liability to payroll can be used as a measure to indicate the potential volatility of contributions due to volatility in the liability experience. For instance, if the actuarial accrued liability is 5 times the size of the covered payroll, then a change in the liability that is 2% different than expected would be a change in magnitude that is 10% of payroll. A ratio that increases over time generally indicates the potential of an increasing volatility in employer contribution rates as a percentage of payroll.
- Percentage of Expected Contributions Actually Received: This measure identifies the percentage difference between the contributions the fund expects to receive during the fiscal year to and actual contributions received by the fund during the fiscal year. A percentage that is less than 100% means that actual contributions the fund received were less than the expected contributions determined by a prior actuarial valuation. On the other hand, a percentage that is greater than 100% means that actual contributions the fund received were more than the expected contributions.

- Ratio of active to retired members: A relatively mature open plan is likely to have close to the same number of actives to retirees resulting in a ratio that is around 1.0. On the other hand, a super-mature plan, or a plan that is closed to new entrants will have more retirees than active members resulting in a ratio below 1.0. As this ratio declines, a larger portion of the total actuarial accrued liability in the System is attributable to retirees. This metric also typically moves in tandem with the liability to payroll metric, which provides an indication of potential contribution volatility.

The following tables provide a summary of these measures for KERS Non-Hazardous and Hazardous Funds for the current year and the prior four years so stakeholders can identify how these measures are trending. While ASOP No. 51 requires this disclosure with respect to only the retirement funds, we have included this information for the insurance funds for completeness.

KERS Non-Hazardous

	Retirement Fund					Insurance Fund				
	June 30,					June 30,				
	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019
Ratio of the market value of assets to total payroll	2.19	2.22	2.24	1.66	1.55	0.95	1.01	1.05	0.76	0.69
Ratio of actuarial accrued liability to payroll	10.09	12.23	12.10	11.78	11.45	1.16	1.32	1.91	1.85	1.90
Ratio of net cash flow to market value of assets	9.5%	5.2%	7.3%	1.0%	5.5%	2.5%	2.4%	7.1%	5.2%	6.2%
Percentage of Expected Contribution Actually Received	100% [1]	100%	94%	93%	91%	100% [1]	100%	99%	96%	95%
Ratio of actives to retirees and beneficiaries	0.65	0.61	0.63	0.67	0.71					

[1] Expected contribution for FYE2023 based on the actuarially determined contribution from the June 30, 2021 valuation.

KERS Hazardous

	Retirement Fund					Insurance Fund				
	June 30,					June 30,				
	2023	2022	2021	2020	2019	2023	2022	2021	2020	2019
Ratio of the market value of assets to total payroll	4.22	4.90	5.32	4.04	4.53	2.96	3.55	3.89	3.05	3.55
Ratio of actuarial accrued liability to payroll	6.44	7.95	7.95	7.52	8.15	1.72	2.10	2.61	2.51	2.84
Ratio of net cash flow to market value of assets	0.7%	-0.5%	0.3%	0.4%	-0.1%	-2.7%	-2.9%	-2.8%	-2.5%	-2.5%
Percentage of Expected Contribution Actually Received	138% [1]	108%	101%	114%	102%	N/A [1]	N/A [1]	N/A [1]	N/A [1]	96%
Ratio of actives to retirees and beneficiaries	0.80	0.75	0.81	0.88	0.82					

[1] Expected contribution for FYE2023 based on the actuarially determined contribution rate of 31.82% from the June 30, 2021 valuation, and expected compensation based on census data from the June 30, 2022 valuation. As of the 2018 valuation (FYE2020), the required employer contribution was 0% of pay for the insurance fund.

Low-Default-Risk Obligation Measure

Introduction

In December 2021, the Actuarial Standards Board (ASB) adopted a revision to Actuarial Standard of Practice (ASOP) No. 4, Measuring Pension Obligations and Determining Pension Plan Costs or Contributions. The revised ASOP No. 4 requires the calculation and disclosure of a liability referred to by the ASOP as the "Low-Default-Risk Obligation Measure" (LDROM). The rationale that the ASB cited for the calculation and disclosure of the LDROM was included in the Transmittal Memorandum of ASOP No. 4 and is presented below (emphasis added):

> "The ASB believes that the calculation and disclosure of this measure provides **appropriate, useful information for the intended user regarding the funded status of a pension plan.** The calculation and disclosure of this additional measure is **not intended to suggest that this is the "right" liability measure** for a pension plan. However, the ASB does believe that **this additional disclosure provides a more complete assessment of a plan's funded status and provides additional information regarding the security of benefits that members have earned as of the measurement date."**

Comparing the Accrued Liabilities and the LDROM

One of the fundamental financial objectives of the Kentucky Employees' Retirement System (KERS) is to finance each member's retirement benefits over the period from the member's date of hire until the member's projected date of retirement (entry age actuarial cost method) as a level percentage of payroll. To fulfill this objective, the discount rate that is used to value the accrued liabilities is set equal to the **expected return** on each fund's diversified portfolio of assets (referred to sometimes as the investment return assumption). For the non-hazardous retirement fund, the investment return assumption is 5.25%. For the hazardous retirement fund, the investment return assumption is 6.25%.

The LDROM is meant to approximately represent the lump sum cost to a plan to purchase low-default-risk fixed income securities whose resulting cash flows essentially replicate in timing and amount the benefits earned (or the costs accrued) as of the measurement date. The LDROM is very dependent upon market interest rates at the time of the LDROM measurement. The lower the market interest rates, the higher the LDROM, and vice versa. The LDROM results presented in this report are based on the entry age actuarial cost method and discount rates based upon the intermediate rate from the FTSE Pension Discount Curve and Liability Index published by the Society of Actuaries. This rate is 4.90% as of June 30, 2023. This measure may not be appropriate for assessing the need for or amount of future contributions. This measure may not be appropriate for assessing the sufficiency of plan assets to cover the estimated cost of settling the plan's benefit obligation.

The difference between the two measures (Valuation and LDROM) is one illustration of the savings the sponsor anticipates by taking on risk in a diversified portfolio.

Non-Hazardous Retirement Fund

Valuation Accrued Liabilities	LDROM
$16,304,277,475	$16,938,373,374

Hazardous Retirement Fund

Valuation Accrued Liabilities	LDROM
$1,363,036,563	$1,597,201,368

APPENDIX A

ACTUARIAL ASSUMPTIONS AND METHODS

Summary of Actuarial Methods and Assumptions

The following presents a summary of the actuarial assumptions and methods used in the valuation of the Kentucky Employees Retirement System.

In general, the assumptions and methods used in the valuation are based on the actuarial experience study as of June 30, 2022 and adopted by the Board in June 2023.

Investment return rate:

Assumed annual rate of 5.25% net of investment expenses for the non-hazardous retirement fund
Assumed annual rate of 6.25% net of investment expenses for the hazardous retirement fund
Assumed annual rate of 6.50% net of investment expenses for the insurance funds

Price Inflation:

Assumed annual rate of 2.50%

Payroll Growth Assumption (used for amortization of unfunded accrued liabilities):

Assumed annual rate of 0.00%

Rates of Annual Salary Increase:

Assumed rates of annual salary increases are shown below.

Service Years	Annual Rates of Salary					
	Merit & Seniority		Price Inflation & Productivity		Total Increase	
	Non-Hazardous	Hazardous	Non-Hazardous	Hazardous	Non-Hazardous	Hazardous
0	12.00%	16.50%	3.30%	3.55%	15.30%	20.05%
1	3.50%	4.00%	3.30%	3.55%	6.80%	7.55%
2	2.75%	3.00%	3.30%	3.55%	6.05%	6.55%
3	2.50%	3.00%	3.30%	3.55%	5.80%	6.55%
4	2.00%	2.00%	3.30%	3.55%	5.30%	5.55%
5	1.50%	1.50%	3.30%	3.55%	4.80%	5.05%
6	1.25%	1.00%	3.30%	3.55%	4.55%	4.55%
7	1.00%	0.50%	3.30%	3.55%	4.30%	4.05%
8	0.75%	0.50%	3.30%	3.55%	4.05%	4.05%
9	0.50%	0.00%	3.30%	3.55%	3.80%	3.55%
10	0.50%	0.00%	3.30%	3.55%	3.80%	3.55%
11 & Over	0.00%	0.00%	3.30%	3.55%	3.30%	3.55%

Retirement rates:

Assumed annual rates of retirement are shown below. Rates are only applicable for members who are eligible for a service retirement.

	Non-Hazardous					Hazardous			
	Normal Retirement		Early Retirement[1]			Members participating before 9/1/2008[2]		Members participating between 9/1/2008 and 1/1/2014[3]	Members participating after 1/1/2014[3]
Age	Male	Female	Male	Female	Service	Age 55-61	Age 62+		
Under 45	20.0%	33.0%			5	10.0%	35.0%		
45	21.0%	33.0%			6	10.0%	35.0%		
46	22.0%	33.0%			7	10.0%	35.0%		
47	23.0%	33.0%			8	10.0%	35.0%		
48	24.0%	33.0%			9	10.0%	35.0%		
49	25.0%	33.0%			10	10.0%	35.0%		
50	26.0%	33.0%			11	10.0%	35.0%		
51	27.0%	33.0%			12	10.0%	35.0%		
52	28.0%	33.0%			13	10.0%	35.0%		
53	29.0%	33.0%			14	10.0%	35.0%		
54	30.0%	33.0%			15	10.0%	35.0%		
55	30.0%	33.0%	5.0%	5.0%	16	10.0%	35.0%		
56	30.0%	33.0%	5.0%	5.0%	17	10.0%	35.0%		
57	30.0%	33.0%	5.0%	5.0%	18	10.0%	35.0%		
58	30.0%	33.0%	5.0%	5.0%	19	10.0%	35.0%		
59	30.0%	33.0%	5.0%	5.0%	20	50.0%	50.0%		
60	30.0%	33.0%	5.0%	8.0%	21	32.0%	32.0%		
61	30.0%	33.0%	8.0%	9.0%	22	32.0%	32.0%		
62	35.0%	35.0%	15.0%	20.0%	23	32.0%	32.0%		
63	30.0%	33.0%	15.0%	18.0%	24	32.0%	32.0%		
64	30.0%	33.0%	15.0%	16.0%	25	32.0%	32.0%	25.6%	16.0%
65	30.0%	33.0%			26	32.0%	32.0%	25.6%	16.0%
66	30.0%	33.0%			27	32.0%	32.0%	25.6%	16.0%
67	30.0%	33.0%			28	32.0%	32.0%	25.6%	16.0%
68	30.0%	33.0%			29	32.0%	32.0%	25.6%	16.0%
69	30.0%	33.0%			30+	32.0%	32.0%	25.6%	100.0%
70	30.0%	33.0%							
71	30.0%	33.0%							
72	30.0%	33.0%							
73	30.0%	33.0%							
74	30.0%	33.0%							
75	100.0%	100.0%							

[1] *The annual rate of retirement is 12% for male members and 14% for female members with 25-26 years of service.*

[2] *The annual rate of retirement is 100% at age 65.*

[3] *The annual rate of retirement is 100% at age 60.*

Non-Hazardous: There is a 1% increase in the first two years a member becomes eligible under the age of 65. For members hired after 7/1/2003, the rates shown above are multiplied by 80% if the member is under age 65 to reflect the different retiree health insurance benefit.

Hazardous: For members hired after 7/1/2003 and prior to 9/1/2008, the rates shown above are multiplied by 80% if the member is under age 65 to reflect the different retiree health insurance benefit.

Disability rates:

An abbreviated table with assumed rates of disability is shown below.

Age	Non-Hazardous		Hazardous	
	Male	Female	Male	Female
20	0.03%	0.03%	0.05%	0.05%
30	0.05%	0.05%	0.08%	0.08%
40	0.11%	0.11%	0.18%	0.18%
50	0.31%	0.31%	0.50%	0.50%
60	0.80%	0.80%	1.32%	1.32%

Withdrawal rates (for causes other than disability and retirement):

Assumed annual rates of withdrawal are shown below and include pre-retirement mortality rates as described on the next page.

Service Years	Annual Rates of Withdrawal	
	Non-Hazardous	Hazardous
1	22.00%	32.50%
2	18.10%	25.58%
3	14.73%	19.66%
4	12.77%	16.19%
5	11.37%	13.73%
6	10.29%	11.82%
7	9.41%	10.26%
8	8.66%	8.93%
9	8.01%	7.79%
10	7.44%	6.79%
11	6.93%	5.89%
12	6.47%	5.07%
13	6.04%	4.33%
14	5.65%	3.64%
15	5.29%	3.00%
16	4.96%	2.42%
17	4.64%	1.86%
18	4.36%	1.34%
19	4.07%	0.86%
20	3.82%	0.39%
21	3.56%	0.00%
22	3.32%	0.00%
23	3.10%	0.00%
24	2.88%	0.00%
25	2.67%	0.00%
26 & Over	0.00%	0.00%

Mortality Assumption:

Pre-retirement mortality: PUB-2010 General Mortality table, for the non-hazardous funds, and the PUB-2010 Public Safety Mortality table for the hazardous funds, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2010.

Post-retirement mortality (non-disabled): System-specific mortality table based on mortality experience from 2013-2022, projected with the ultimate rates from MP-2020 mortality improvement scale using a base year of 2023.

The following table provides the life expectancy for a non-disabled retiree in future years based on the assumption with full generational projection:

Life Expectancy for an Age 65 Retiree in Years					
Gender	**Year of Retirement**				
	2025	**2030**	**2035**	**2040**	**2045**
Male	19.8	20.2	20.6	21.0	21.3
Female	22.4	22.7	23.1	23.4	23.7

Post-retirement mortality (disabled): PUB-2010 Disabled Mortality table, with rates multiplied by 150% for both male and female rates, projected with the ultimate rates from the MP-2020 mortality improvement scale using a base year of 2010.

Marital status:

100% of employees are assumed to be married, with the female spouse 3 years younger than the male spouse.

Line of Duty/Duty-Related Disability

Non-Hazardous: 2% of disabilities are assumed to be duty-related (100% of which are assumed to be "total and permanent")

Hazardous: 10% of disabilities are assumed to occur in the line of duty (10% of which are assumed to be "total and permanent")

Line of Duty Death

25% of deaths are assumed to occur in the line of duty

Dependent Children:

For members in the Hazardous Plan who receive a duty-related death or disability benefit, the member is assumed to be survived by two dependent children, each age 6 with payments for 15 years.

Form of Payment:

Members are assumed to elect a life-only annuity at retirement.

Actuarial Cost Method:

Entry Age Normal, Level Percentage of Pay. The Entry Age Normal actuarial cost method allocates the System's actuarial present value of future benefits to various periods based upon service. The portion of the present value of future benefits allocated to years of service prior to the valuation date is the actuarial accrued liability, and the portion allocated to years following the valuation date is the present value of future normal costs. The normal cost is determined for each active member as the level percent of pay necessary to fully fund the expected benefits to be earned over the career of each individual active member. The normal cost is partially funded with active member contributions with the remainder funded by employer contributions.

Health Care Age Related Morbidity/Claims Utilization:

To model the impact of aging on the underlying health care costs for Medicare retirees, the valuation relied on the Society of Actuaries' 2013 Study "Health Care Costs – From Birth to Death". Table 4 (Development of Plan Specific Medicare Age Curve) was used to model the impact of aging for ages 65 and over.

Health Care Cost Trend Rates:

Year	Non-Medicare Plans[1]	Medicare Plans[1]	Dollar Contribution[2]
2025	6.80%	8.50%	1.50%
2026	6.55%	8.00%	1.50%
2027	6.30%	8.00%	1.50%
2028	6.05%	8.00%	1.50%
2029	5.80%	7.50%	1.50%
2030	5.55%	7.00%	1.50%
2031	5.30%	6.50%	1.50%
2032	5.05%	6.00%	1.50%
2033	4.90%	5.50%	1.50%
2034	4.75%	5.00%	1.50%
2035	4.60%	4.50%	1.50%
2036	4.45%	4.05%	1.50%
2037	4.30%	4.05%	1.50%
2038 & Beyond	4.05%	4.05%	1.50%

[1]All increases are assumed to occur on January 1. The 2024 premiums were known at the time of the valuation and were incorporated into the liability measurement.
[2]Applies to members participating on or after July 1, 2003. All increases are assumed to occur on July 1.

Health care trend assumptions are based on the model issued by the Society of Actuaries "Getzen model of Long-Run Medical Cost Trends for the SOA; Thomas E. Getzen, iHEA and Temple University 2014 © Society of Actuaries.

The underlying assumptions used to develop the health care trend rates include:

- A short run period-this is a period for which anticipated health care trend rates are manually set based on local information as well as plan-specific and carrier information.
- Long term real GDP growth – 1.75%
- Long term rate of inflation – 2.30%
- Long term nominal GDP growth – 4.05%
- Year that excess rate converges to 0 – 2036

Health care trend rates are thus the manually set rates for the short run period and rates which decline to an ultimate trend rate which equals the assumed nominal long-term GDP growth rate.

Health Care Participation Assumptions:

- Active members are assumed to elect health coverage at retirement at the following participation rates.

Service at Retirement	Members participating before 7/1/2003*	Members participating after 7/1/2003
Under 10	50%	100%
10-14	75%	100%
15-19	90%	100%
Over 20	100%	100%

* 100% of members with a duty disability or a duty death (in service) benefit are assumed to elect coverage at retirement.

- Future retirees are assumed to have a similar distribution by plan type as the current retirees.

Medicare Plan	Participation Percentage	Non-Medicare Plan	Participation Percentage
Medical Only[1]	5%	LivingWell Basic	4%
Essential Plan	8%	LivingWell CDHP	35%
Premium Plan	87%	LivingWell PPO	61%

[1] Includes Mirror Plans

- 50% of deferred vested members participating before July 1, 2003 are assumed to elect health coverage at retirement. 100% of deferred vested members participating after July 1, 2003 are assumed to elect health coverage at retirement.

- Deferred vested members receiving insurance benefits from the non-hazardous fund are assumed to begin health coverage at age 55 for members participating before September 1, 2008, at age 60 for members participating on or after September 1, 2008 but before January 1, 2014, and at age 65 for members participating on or after January 1, 2014.

- Deferred vested members receiving insurance benefits from the hazardous fund are assumed to begin health coverage at age 50 for members participating before January 1, 2014 and at age 60 for members participating on or after January 1, 2014.

- 50% of future retirees, with hazardous service, are assumed to elect spouse health care coverage. No dependent coverage is assumed for members who only have non-hazardous service. 100% of spouses with health care coverage are assumed to continue coverage after the member's death.

Other Assumptions

1. Valuation payroll (used for determining the amortization contribution rate): Current fiscal year payroll.

2. Individual salaries used to project benefits: For salary amounts prior to the valuation date, the salary from the last fiscal year is projected backward with the valuation salary scale assumption. For future salaries, the salary from the last fiscal year is projected forward with one year's salary scale.

3. Pay increase timing: Beginning of (fiscal) year. This is equivalent to assuming that reported salaries represent amounts paid to members during the year ending on the valuation date.

4. Current active members that terminated employment (for reasons other than retirement, disability, or death) are assumed to commence their retirement benefits at first unreduced retirement eligibility. Members are assumed to elect a refund of member contributions if the value of their account balance exceeds the present value of the deferred benefit. Members participating in the Cash Balance plan are assumed to elect to receive a lump sum of their cash balance account if their account balance exceeds the present value of the deferred benefit and the member is not eligible for insurance benefits at termination.

5. The beneficiaries of current active members that die while active are assumed to commence their survivor benefits at the member's first unreduced retirement eligibility. Beneficiaries are assumed to elect a refund of member contributions if the value of the member's account balance exceeds the present value of the survivor benefit. Beneficiaries of active members that die while in the line of duty are assumed to commence their survivor benefits immediately at the death of the member.

6. There will be no recoveries once disabled.

7. Cash Balance Provisions: The cash balance interest crediting rate while a member is an active employee is assumed to equal 5.90% for the non-hazardous fund and 6.75% for the hazardous fund. The interest crediting rate after a member terminates employment is 4% for all plans.

8. Decrement timing: Decrements of all types are assumed to occur mid-year. Decrement rates are used as described in this report, without adjustment for multiple decrement table effects.

9. Service: All members are assumed to accrue 1 year of benefit and eligibility service each year.

10. Eligibility testing: Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.

11. Incidence of Contributions: Contributions are assumed to be received continuously throughout the year based upon the computed percent of payroll shown in this report, and the actual payroll payable at the time contributions are made.

12. Current Inactive Population (Retirement Funds): All non-vested members are assumed to take an immediate refund of member contributions. Vested members are assumed to elect an immediate refund of member contributions at the valuation date if the value of their

account balance exceeds the present value of their deferred benefit. Non-hazardous members are assumed to retire at age 65. Hazardous members hired prior to September 1, 2008 are assumed to retire at age 55 and hazardous members hired on or after September 1, 2008 are assumed to retire at age 60.

13. The additional $5 per year of service insurance dollar subsidy effective January 1, 2023 is assumed to be paid in all applicable years.

Participant Data

Participant data was supplied in electronic text files. There were separate files for (i) active and inactive members, and (ii) members and beneficiaries receiving benefits.

The data for active and terminated members included date of birth, gender, date of participation, benefit tier indicator, service with the current system, total vesting service, salary, employee contribution account balances, and employer pay credits for members participating in the cash balance plan. For retired members and beneficiaries, the data included date of birth, gender, spouse's date of birth (where applicable), amount of monthly benefit, date of retirement, and form of payment code.

Assumptions were made to correct for missing, bad, or inconsistent data. These had no material impact on the results presented.

Changes in assumptions since the prior valuation:

Demographic and economic assumptions were updated based on the 2022 Experience Study.

A 1% increase in the rate of retirement for each of the first two years a non-hazardous member becomes retirement eligible under the age of 65 is assumed to reflect the shift in retirement pattern due to House Bill 506.

In conjunction with the review of the healthcare per capita claims cost, the assumed increase in future healthcare costs, or trend assumption, is reviewed on an annual basis. The trend assumption was increased during the select period in this valuation as a result of our review.

Development of Baseline Claims Cost

For non-Medicare retirees, the initial per capita costs were based on the plan premiums effective January 1, 2024, and are used for both current and future retirees. An inherent assumption in this methodology is that the projected future retirees will have a similar distribution by plan type as the current retirees. The spouse/dependent premium of $1,129.72 for non-Medicare retirees is based on a blending of Family and Couple premiums for the current retirees that have over 4 years of hazardous service. The fully-insured premiums paid to the Kentucky Employees' Health Plan (KEHP) are blended rates based on the combined experience of active and retired members. Because the average cost of providing health care benefits to retirees under age 65 is higher than the average cost of providing health care benefits to active employees, there is an implicit rate subsidy for the non-Medicare eligible retirees. Actuarial Standard of Practice No. 6 (ASOP No. 6) requires aging subsidies (or implicit rate subsidies) to be recognized. However, the health insurance trusts are only used to reimburse KEHP for the employer's portion of the blended premiums. Said another way, the trusts are not used to fund the difference between the underlying retiree claims and the blended KEHP premiums. As a result, the retiree health care liabilities developed in this report for the non-Medicare retirees are based solely on the premiums charged by KEHP, without any age-adjustment. GASB Statements No. 74 and No. 75 prohibit such a deviation from ASOP No. 6. The liabilities developed in this report are solely for the purpose of funding the benefits paid by the health insurance funds and are not appropriate for financial statement disclosures required by GASB. GRS provides separate GASB reports which include the liabilities associated with the implicit rate subsidy.

2024 MONTHLY COSTS FOR THOSE NOT ELIGIBLE FOR MEDICARE		
AGE	MEMBER	SPOUSE/DEPENDENTS
<65	$929.46	$1,129.72

For Medicare retirees, the initial per capita costs were estimated based on the plan premiums effective January 1, 2024, and are used for both current and future retirees. An inherent assumption in this methodology is that the projected future retirees will have a similar distribution by plan type as the current retirees. Age graded and sex distinct premiums are utilized for retirees over the age of 65. These costs are appropriate for the unique age and sex distribution currently existing. Over the future years covered by this valuation, the age and sex distribution will most likely change. Therefore, our process "distributes" the average premium over all age/sex combinations and assigns a unique premium for each combination. The age/sex specific costs more accurately reflect the health care utilization and cost at that age.

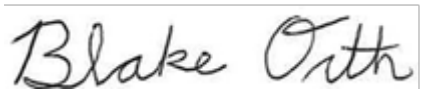
2024 MONTHLY COSTS FOR THOSE ELIGIBLE FOR MEDICARE		
AGE	MALE	FEMALE
65	$ 81.35	$ 76.72
75	95.18	92.87
85	100.65	101.83

Appendix B of the report provides a full schedule of premiums.

The percentage of the insurance premium paid by KERS is calculated based on the Medical Only premium amounts. The majority of KERS Medicare retirees are covered under the Premium Medicare Advantage plan. Because the premiums for the Medical Only plan are higher than the Premium Medical Advantage plan, retirees with less than 20 years of service pay a smaller contribution toward their insurance coverage. To model the impact of the employer contribution being based on the Medical Only Plan rather than the plan selected by the retiree, the employer share for retirees qualifying for percentage-based subsidies was blended to reflect retiree plan selection.

The above assumption implicitly implies that the Medical Only plan premiums will increase at a rate of 4.90% as of January 1, 2024, decreasing over 9 years to an ultimate trend rate of 4.05%, and that the remaining Medicare plan premiums will increase at the Medicare trend assumption used in the actuarial valuation.

Blake Orth is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.



Blake Orth, FSA, EA, MAAA

APPENDIX B

BENEFIT PROVISIONS

Summary of Benefit Provisions for Kentucky Employees Retirement System (KERS)

KERS Non-Hazardous Employees

Retirement: Tier 1, Participation before 9/1/2008

Normal Retirement Eligibility	Age 65 with at least 1 month of service credit; or Any age with at least 27 years of service
Benefit Amount	If a member has at least 48 months of service, the monthly benefit is 2.00% times final average compensation times years of service. For members who did not have 13 months of service credit for 1/1/1998-1/1/1999, the monthly benefit is 1.97% times final average compensation times years of service. If a member has less than 48 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest. Final average compensation is based on the member's highest 5 years of compensation.
Early Retirement Eligibility	Any age (prior to age 65) with at least 25 years of service; or Age 55 with at least 5 years of service
Early Retirement Reduction	Normal Retirement benefit reduced 6.5% per year for the first five years and 4.5% per year for the next five years for each year the member's retirement eligibility precedes the member's normal retirement date.

KERS Non-Hazardous Employees (continued)

Retirement: Tier 2, Participation on or after 9/1/2008 but before 1/1/2014

Normal Retirement Eligibility	Age 65 with at least 5 years of service; or Rule of 87 (Age 57 or older if age plus service equals 87)
Benefit Amount	The monthly benefit is equal to the applicable benefit multiplier times final average compensation times years of service.

Years of Service	Benefit Multiplier
10 or less	1.10%
10-20	1.30%
20-26	1.50%
26-30	1.75%
Greater than 30*	2.00%

* The 2.00% benefit multiplier only applies to service credit in excess of 30 years. If a member has greater than 30 years of service at retirement, service prior to 30 years will be multiplied by the 1.75% benefit multiplier.

Final compensation is based on the member's last 5 years of compensation.

Early Retirement Eligibility	Age 60 with at least 10 years of service
Early Retirement Reduction	Normal Retirement benefit reduced 6.5% per year for the first five years and 4.5% per year for the next five years for each year the member's retirement date precedes the member's normal retirement eligibility.

Retirement: Tier 3, Participation on or after 1/1/2014

Normal Retirement Eligibility	Age 65 with at least 5 years of service; or Rule of 87 (Age 57 or older if age plus service equals 87)
Benefit Amount	Each year that the member is active, a 4.00% employer pay credit and the employee's 5.00% contribution will be credited to each member's hypothetical cash balance account. The hypothetical account will earn interest at a minimum rate of 4%, annually. If the System's geometric average net investment return for the previous five years exceeds 4%, then the hypothetical account will be credited with an additional amount of interest in that year equal to 75% of the amount of the return which exceeds 4%. All interest credits will be applied to the hypothetical account balance on June 30 based on the account balance as of June 30 of the previous year. At retirement, the member's hypothetical account balance may be converted into an annuity based on an actuarial factor.
Early Retirement Eligibility	N/A

KERS Non-Hazardous Employees (continued)

Deferred Vested Benefit: Tier 1, Participation before 9/1/2008

Eligibility	At least 1 month of service credit
Benefit Amount	Normal retirement benefit deferred to normal retirement age, or a reduced retirement benefit at an early retirement age

Deferred Vested Benefit: Tier 2, Participation on or after 9/1/2008 but before 1/1/2014

Eligibility	5 years of service
Benefit Amount	Normal retirement benefit deferred to normal retirement age, or a reduced retirement benefit at an early retirement age

Deferred Vested Benefit Tier 3, Participation on or after 1/1/2014

Eligibility	5 years of service
Benefit Amount	At termination of employment, members may choose to leave their account balance with the System and retire once they are eligible. The hypothetical account balance will earn 4% annual interest after termination. Members may also choose to withdrawal their entire accumulated balance. If a member does not have 5 years of service at termination, the member is eligible to receive a partial refund of their account balance. This refund includes the member's contributions with interest.

Disability Retirement: Participation before 8/1/2004

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	Disability benefits are calculated in the same manner as the normal retirement benefit with years of service and final compensation being determined as of the date of disability, except that service credit shall be added to the person's total service beginning with the last date of paid employment and continuing to the member's 65th birthday, with total service not exceeding 25 years. Total service credit added shall not be greater than the member's actual service at disability. For members with at least 25 years of service on the last day of paid employment but less than 27 years of service, total service shall be 27 years. For members with 27 or more years of service credit, actual service will be used.

KERS Non-Hazardous Employees (continued)

Disability Retirement: Participation on or after 8/1/2004 but before 1/1/2014

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	The higher of 20% of the member's final monthly rate of pay or the member's normal retirement benefit (without reduction for early retirement) with years and final compensation being determined as of the date of disability.

Disability Retirement: Participation on or after 1/1/2014

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	The higher of 20% of the member's final monthly rate of pay or the member's retirement benefit calculated at the member's normal retirement date.

Duty-Related Disability Benefit

Disability Benefit	If the disability is a direct result of an act in the line of duty, the benefit shall not be less than 25% of the member's final monthly final rate of pay. If the disability is deemed to be Total and Permanent (and the member is working in a non-hazardous position that could be certified as a hazardous position), then this benefit shall not be less than 75% of the member's monthly average pay.
Child Benefit	Additionally, each eligible dependent child will receive 10% of the member's monthly average pay up to a maximum of 40%. Member and dependent payment shall not exceed 100% of member's monthly average pay.

Pre-Retirement Death Benefit

Eligibility	Eligible for early or normal retirement; or Under age 65 with at least 60 months of service and actively working at the time of death; or At least 144 months of service, if no longer actively working
Spouse Benefit	The member's retirement benefit calculated in the same manner as if the member had retired on the day of the member's death and elected a 100% joint and survivor benefit. The benefit is actuarially reduced if the member dies prior to their normal retirement age.

KERS Non-Hazardous Employees (continued)

Pre-Retirement Death Benefit (Death in the Line of Duty)

Eligibility	One month of service credit
Spouse Benefit	A $10,000 lump sum payment plus a monthly payment of 75% of the deceased member's final monthly average pay. Each dependent child will receive 10% of the final monthly average pay (not to exceed a total child benefit of 25% while the spouse is alive). A spouse may also elect the non-line of duty death benefit.
Child Benefit	In the event there is no surviving spouse, the benefit is 50% of final monthly average pay for one child, 65% of final monthly average pay for two children, or 75% of final monthly average pay for three or more eligible children.

Post-Retirement Death Benefit

Eligibility	48 months of service, and in receipt of retirement benefits
Death Benefit	A $5,000 lump sum payment

Member Contributions

Tier 1, Participation before 9/1/2008	5% of creditable compensation. Members who do not receive a retirement benefit are entitled to a full refund of contributions with interest. The annual interest rate is set by the Board, not less than 2.0%.
Tier 2, Participation on or after 9/1/2008 but before 1/1/2014	5% of creditable compensation plus 1% of creditable compensation, which is deposited into the 401(h) account and is not refundable. Members who do not receive a retirement benefit are entitled to a refund of non-401(h) contributions with interest. The annual interest rate is 2.5%.
Tier 3, Participation after 1/1/2014	5% of creditable compensation plus 1% of creditable compensation, which is deposited into the 401(h) account and is not refundable. Members who do not receive a retirement benefit are entitled to a refund of non-401(h) contributions with interest.

Change in Retirement Plan Benefits for Non-Hazardous Members since the Prior Valuation

House Bill 506 passed during the 2023 legislative session and reinstated the Partial Lump Sum Option Form of payment for members who retire on and after January 1, 2024, and adjusted the minimum required separation period before a retiree may become reemployed and continue to receive their retirement allowance to one month for all circumstances.

KERS Hazardous Employees

Retirement: Tier 1, Participation before 9/1/2008

Normal Retirement Eligibility	Age 55 with at least 1 month of service credit; or Any age with at least 20 years of service
Benefit Amount	If a member has at least 60 months of service, the monthly benefit is 2.49% times final average compensation times years of service. If a member has less than 60 months of service, the monthly benefit is the actuarial equivalent of two times the member's contributions with interest. Final average compensation is based on the member's highest 3 years of compensation.
Early Retirement Eligibility	Age 50 with at least 15 years of service
Early Retirement Reduction	Normal Retirement benefit reduced 6.5% per year for the first five years and 4.5% per year for the next five years for each year the member's retirement date precedes the member's normal retirement eligibility.

KERS Hazardous Employees (continued)

Retirement: Tier 2, Participation on or after 9/1/2008 but before 1/1/2014

Normal Retirement Eligibility	Age 60 with at least 5 years of service; or Any age with at least 25 years of service
Benefit Amount	The monthly benefit is equal to the applicable benefit multiplier times final average compensation times years of service.

Years of Service	Benefit Multiplier
10 or less	1.30%
10-20	1.50%
20-25	2.25%
Greater than 25	2.50%

Final average compensation is based on the member's highest 3 years of compensation.

Early Retirement Eligibility	Age 50 with at least 15 years of service
Early Retirement Reduction	Normal Retirement benefit reduced 6.5% per year for the first five years and 4.5% per year for the next five years for each year the member's retirement date precedes the member's normal retirement eligibility.

Retirement: Tier 3, Participation on or after 1/1/2014

Normal Retirement Eligibility	Age 60 with at least 5 years of service; or Any age with at least 25 years of service
Benefit Amount	Each year that the member is active, a 7.50% employer pay credit and the employee's 8.00% contribution will be credited to each member's hypothetical cash balance account. The hypothetical account will earn interest at a minimum rate of 4%, annually. If the System's geometric average net investment return for the previous five years exceeds 4%, then the hypothetical account will be credited with an additional amount of interest in that year equal to 75% of the amount of the return which exceeds 4%. All interest credits will be applied to the hypothetical account balance on June 30 based on the account balance as of June 30 of the previous year. At retirement, the member's hypothetical account balance may be converted into an annuity based on an actuarial factor.
Early Retirement Eligibility	N/A

KERS Hazardous Employees (continued)

Deferred Vested Benefit: Tier 1, Participation before 9/1/2008

Eligibility	At least 1 month of service credit
Benefit Amount	Normal retirement benefit deferred to normal retirement age, or a reduced retirement benefit at an early retirement age

Deferred Vested Benefit: Tier 2, Participation on or after 9/1/2008 but before 1/1/2014

Eligibility	5 years of service
Benefit Amount	Normal retirement benefit deferred to normal retirement age, or a reduced retirement benefit at an early retirement age

Deferred Vested Benefit Tier 3, Participation on or after 1/1/2014

Eligibility	5 years of service
Benefit Amount	At termination of employment, members may choose to leave their account balance with the System and retire once they are eligible. The hypothetical account balance will earn 4% annual interest after termination. Members may also choose to withdrawal their entire accumulated balance. If a member does not have 5 years of service at termination, the member is eligible to receive a partial refund of their account balance. This refund includes the member's contributions with interest.

Disability Retirement: Participation before 8/1/2004

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	Disability benefits are calculated in the same manner as the normal retirement benefit with years of service and final compensation being determined as of the date of disability, except that if the member has less than 20 years of service at disability, service credit shall be added to the person's total service beginning with the last date of paid employment and continuing to the member's 55th birthday, with total service not exceeding 20 years. Total service credit added shall not be greater than the member's actual service at disability.

KERS Hazardous Employees (continued)

Disability Retirement: Participation on or after 8/1/2004 but before 1/1/2014

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	The higher of 25% of the member's final monthly rate of pay or the member's normal retirement benefit (without reduction for early retirement) with years and final compensation being determined as of the date of disability.

Disability Retirement: Participation on or after 1/1/2014

Eligibility	60 months of service (requirement is waived if line of duty disability)
Disability Benefit	The higher of 25% of the member's final monthly rate of pay or the member's retirement benefit calculated at the member's normal retirement date.

Line of Duty Disability Benefit

Disability Benefit	If the disability is a direct result of an act in the line of duty, the benefit shall not be less than 25% of the member's final monthly final rate of pay. If the disability is deemed to be Total and Permanent, then this benefit shall not be less than 75% of the member's monthly average pay.
Child Benefit	Additionally, each eligible dependent child will receive 10% of the member's monthly average pay up to a maximum of 40%. Member and dependent payment shall not exceed 100% of member's monthly average pay.

Pre-Retirement Death Benefit

Eligibility	Eligible for early or normal retirement; or Under age 55 with at least 60 months of service and actively working at the time of death; or At least 144 months of service, if no longer actively working
Spouse Benefit	The member's retirement benefit calculated in the same manner as if the member had retired on the day of the member's death and elected a 100% joint and survivor benefit. The benefit is actuarially reduced if the member dies prior to their normal retirement age.

KERS Hazardous Employees (continued)

Pre-Retirement Death Benefit (Death in the Line of Duty)

Eligibility	One month of service credit
Spouse Benefit	A $10,000 lump sum payment plus a monthly payment of 75% of the deceased member's final monthly average pay. Each dependent child will receive 10% of the final monthly average pay (not to exceed a total child benefit of 25% while the spouse is alive). A spouse may also elect the non-line of duty death benefit.
Non-Spouse Benefit	If the beneficiary is only one person who is a dependent receiving at least 50% of his or her support from the member, the beneficiary may elect a lump-sum payment of $10,000.
Child Benefit	In the event there is no surviving spouse, the benefit is 50% of final monthly average pay for one child, 65% of final average pay for two children, or 75% of final average pay for three or more eligible children.

Post-Retirement Death Benefit

Eligibility	48 months of service, and in receipt of retirement benefits
Death Benefit	A $5,000 lump sum payment

Member Contributions

Tier 1, Participation before 9/1/2008	8% of creditable compensation. Members who do not receive a retirement benefit are entitled to a full refund of contributions with interest. The annual interest rate is set by the Board, not less than 2.0%.
Tier 2, Participation on or after 9/1/2008 but before 1/1/2014	8% of creditable compensation plus 1% of creditable compensation, which is deposited into the 401(h) account and is not refundable. Members who do not receive a retirement benefit are entitled to a refund of non-401(h) contributions with interest. The annual interest rate is 2.5%.
Tier 3, Participation after 1/1/2014	8% of creditable compensation plus 1% of creditable compensation, which is deposited into the 401(h) account and is not refundable. Members who do not receive a retirement benefit are entitled to a refund of non-401(h) contributions with interest.

Change in Retirement Plan Benefits for Hazardous Members since the Prior Valuation

House Bill 506 passed during the 2023 legislative session and reinstated the Partial Lump Sum Option Form of payment for members who retire on and after January 1, 2024, and adjusted the minimum required separation period before a retiree may become reemployed and continue to receive their retirement allowance to one month for all circumstances.

Summary of Main Retiree Insurance Benefit Provisions

Insurance: Participation began before 7/1/2003

Benefit Eligibility Recipient of a retirement allowance

Benefit Amount

Non-Hazardous Service	Percentage of Member Premium Paid by Retirement System	Hazardous Service	Percentage of Member & Dependent Premium Paid by Retirement System
Less than 4 years	0%	Less than 4 years	0%
4 – 9 years	25%	4 – 9 years	25%
10 – 14 years	50%	10 – 14 years	50%
15 – 19 years	75%	15 – 19 years	75%
20 or more years	100%	20 or more years	100%

The percentage paid by the retirement system is applied to the 'contribution' plan selected by the Board.

Duty Disability Retirement If disability was a result of injuries sustained while in the line of duty, the member receives 100% of the maximum contribution for the member and dependents. This benefit is provided to members in the Non-hazardous and Hazardous plans alike.

Duty Death in Service If an active employee's death was a result of injuries sustained while in the line of duty, the member's spouse and children receive a fully subsidized health insurance benefit. This benefit is provided to members in the Non-hazardous and Hazardous plans alike.

Non-Duty Death in Service If the surviving spouses is in receipt of a pension allowance, he or she is eligible for continued health coverage. The percentage of the premium paid for by the retirement system is based on the member's years of hazardous service at the time of death.

Surviving Spouse of a Retiree A surviving spouse of a retiree, who is in receipt of a pension allowance, will receive a premium subsidy based on the member's years of hazardous service.

Hazardous employees who retired prior to August 1, 1998 System's contribution for spouse and dependents is based on total service.

Insurance: Participation began on or after 7/1/2003

Benefit Eligibility

Recipient of a retirement allowance with at least 120 months of service at retirement (180 months if participation began on or after 9/1/2008)

Non-Hazardous Subsidy

Monthly contribution of $10 for each year of earned non-hazardous service. The monthly contribution is increased by 1.5% each July 1. As of July 1, 2023, the Non-Hazardous monthly contribution was $14.41/year of service. Upon the retiree's death, the surviving spouse may continue coverage (if in receipt of a retirement allowance) but will be 100% responsible for the premiums.

Effective January 1, 2023, members will receive an additional dollar contribution of $5 for every year of non-hazardous service a member attains over 27 years. This additional dollar contribution does not increase by 1.5% annually and is only payable for non-Medicare retirees. Also, it is only payable when the applicable insurance fund is at least 90% funded on an actuarial value of asset basis as of the last actuarial valuation.

Hazardous Subsidy

Monthly contribution of $15 for each year of earned hazardous service. The monthly contribution is increased by 1.5% each July 1. As of July 1, 2023, the Hazardous monthly contribution was $21.62/year of service. Upon the retiree's death, the surviving spouse of a hazardous duty member will receive a monthly contribution of $10 ($14.41 as of July 1, 2023) for each year of hazardous service.

Effective January 1, 2023, members will receive an additional dollar contribution of $5 for every year of hazardous service a Tier 1 member attains over 20 years and a Tier 2 member attains 25 years. This additional dollar contribution does not increase by 1.5% annually and is only payable for non-Medicare retirees. Also, it is only payable when the applicable insurance fund is at least 90% funded on an actuarial value of asset basis as of the last actuarial valuation.

Duty Disability Retirement

If disability was a result of injuries sustained while in the line of duty or was duty-related, the member receives a benefit based on at least 20 years of service. This benefit is provided to members in the Non-Hazardous and Hazardous plans alike.

If the disability is deemed to be Total and Permanent, the insurance premium for the member, the member's spouse, and the member's dependent children shall also be paid in full by the System. For non-hazardous members to be eligible for this benefit, they must be working in a position that could be certified as a hazardous position.

Duty Death in Service

If an active employee's death was a result of injuries sustained while in the line of duty, the member's spouse and children receive a fully subsidized health insurance benefit. This benefit is provided to members in the Non-Hazardous and Hazardous plans alike.

Non-Duty Death in Service

If the surviving spouse is in receipt of a pension allowance, he or she is eligible for continued health coverage. The percentage of the premium paid for by the retirement system is based on the member's years of hazardous service at the time of death.

Monthly Health Plan Premiums – Effective January 1, 2024

Non-Medicare Plan Options					
Plan Option	Single	Parent Plus	Couple	Family	Family X-Ref
LivingWell PPO	$949.04	$1,320.40	$1,981.62	$2,185.78	$1,126.28
LivingWell CDHP	930.76	1,269.28	1,866.24	2,078.08	1,068.66
LivingWell Basic	901.04	1,234.80	1,863.04	2,069.88	1,057.40

Medicare Plan Options	
Medical Only Plan	$188.73
Essential Mirror Plan	228.98
Premium Mirror Plan	328.11
Essential Medical Advantage Plan	4.07
Premium Medical Advantage Plan	93.35

Contribution plan selected by the Board was the LivingWell PPO plan option for non-Medicare retirees.
Contribution plan selected by the Board was the Medical Only plan for the Medicare retirees.

Dollar Contribution Amount for Participation on or after 7/1/2003

Monthly contribution amounts per year of service as of July 1, 2023.

Non-Hazardous Service	Hazardous Service
$14.41	$21.62

Changes in Health Insurance Benefits since the Prior Valuation

None.

APPENDIX C

GLOSSARY

Glossary

Actuarial Accrued Liability (AAL): That portion, as determined by a particular Actuarial Cost Method, of the Actuarial Present Value of Future Plan Benefits which is not provided for by future Normal Costs. It is equal to the Actuarial Present Value of Future Plan Benefits minus the actuarial present value of future Normal Costs.

Actuarial Assumptions: Assumptions as to future experience under the Fund. These include assumptions about the occurrence of future events affecting costs or liabilities, such as:

- mortality, withdrawal, disablement, and retirement;
- future increases in salary;
- future rates of investment earnings and future investment and administrative expenses;
- characteristics of members not specified in the data, such as marital status;
- characteristics of future members;
- future elections made by members; and
- other relevant items.

Actuarial Cost Method or ***Funding Method:*** A procedure for allocating the Actuarial Present Value of Future Benefits to various time periods; a method used to determine the Normal Cost and the Actuarial Accrued Liability. These items are used to determine the ADC.

Actuarial Gain or ***Actuarial Loss:*** A measure of the difference between actual experience and that expected based upon a set of Actuarial Assumptions, during the period between two Actuarial Valuation dates. Through the actuarial assumptions, rates of decrements, rates of salary increases, and rates of fund earnings have been forecasted. To the extent that actual experience differs from that assumed, Actuarial Accrued Liabilities emerge which may be the same as forecasted, or may be larger or smaller than projected. Actuarial gains are due to favorable experience, e.g., the fund's assets earn more than projected, salaries do not increase as fast as assumed, members retire later than assumed, etc. Favorable experience means actual results produce actuarial liabilities not as large as projected by the actuarial assumptions. On the other hand, actuarial losses are the result of unfavorable experience, i.e., actual results that produce actuarial liabilities which are larger than projected. Actuarial gains will shorten the time required for funding of the actuarial balance sheet deficiency while actuarial losses will lengthen the funding period.

Actuarially Equivalent: Of equal actuarial present value, determined as of a given date and based on a given set of Actuarial Assumptions.

Actuarial Present Value (APV): The value of an amount or series of amounts payable or receivable at various times, determined as of a given date by the application of a particular set of Actuarial Assumptions. For purposes of this standard, each such amount or series of amounts is:

a. adjusted for the probable financial effect of certain intervening events (such as changes in compensation levels, marital status, etc.)

b. multiplied by the probability of the occurrence of an event (such as survival, death, disability, termination of employment, etc.) on which the payment is conditioned, and

c. discounted according to an assumed rate (or rates) of return to reflect the time value of money.

Actuarial Present Value of Future Plan Benefits: The Actuarial Present Value of those benefit amounts which are expected to be paid at various future times under a particular set of Actuarial Assumptions, taking into account such items as the effect of advancement in age and past and anticipated future compensation and service credits. The Actuarial Present Value of Future Plan Benefits includes the liabilities for active members, retired members, beneficiaries receiving benefits, and inactive, non-retired members either entitled to a refund or a future retirement benefit. Expressed another way, it is the value that would have to be invested on the valuation date so that the amount invested plus investment earnings would provide sufficient assets to pay all projected benefits and expenses when due.

Actuarial Valuation: The determination, as of a valuation date, of the Normal Cost, Actuarial Accrued Liability, Actuarial Value of Assets, and related Actuarial Present Values for a plan. An Actuarial valuation for a governmental retirement system typically also includes calculations that provide the financial information of the plan, such as the funded ratio, unfunded actuarial accrued liability and the ADC.

Actuarial Value of Assets or ***Valuation Assets:*** The value of the Fund's assets as of a given date, used by the actuary for valuation purposes. This may be the market or fair value of plan assets, but commonly actuaries use a smoothed value in order to reduce the year-to-year volatility of calculated results, such as the funded ratio and the ADC.

Actuarially Determined: Values which have been determined utilizing the principles of actuarial science. An actuarially determined value is derived by application of the appropriate actuarial assumptions to specified values determined by provisions of the law.

Actuarially Determined Contribution (ADC): The employer's periodic required contributions, expressed as a dollar amount or a percentage of covered plan compensation. The ADC consists of the Employer Normal Cost and the Amortization Payment.

Amortization Method: A method for determining the Amortization Payment. The most common methods used are level dollar and level percentage of payroll. Under the Level Dollar method, the Amortization Payment is one of a stream of payments, all equal, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the Amortization payment is one of a stream of increasing payments, whose Actuarial Present Value is equal to the UAAL. Under the Level Percentage of Pay method, the stream of payments increases at the assumed rate at which total covered payroll of all active members will increase.

Amortization Payment: The portion of the pension plan contribution or ADC which is designed to pay interest on and to amortize the Unfunded Actuarial Accrued Liability.

Closed Amortization Period: A specific number of years that is counted down by one each year, and therefore declines to zero with the passage of time. For example if the amortization period is initially set at 30 years, it is 29 years at the end of one year, 28 years at the end of two years, etc. See Funding Period and Open Amortization Period.

Decrements: Those causes/events due to which a member's status (active-inactive-retiree-beneficiary) changes, that is: death, retirement, disability, or termination.

Defined Benefit Plan: A retirement plan that is not a Defined Contribution Plan. Typically a defined benefit plan is one in which benefits are defined by a formula applied to the member's compensation and/or years of service.

Defined Contribution Plan: A retirement plan, such as a 401(k) plan, a 403(b) plan, or a 457 plan, in which the contributions to the plan are assigned to an account for each member, and the plan's earnings are allocated to each account, and each member's benefits are a direct function of the account balance.

Employer Normal Cost: The portion of the Normal Cost to be paid by the employers. This is equal to the Normal Cost less expected member contributions.

Experience Study: A periodic review and analysis of the actual experience of the Fund which may lead to a revision of one or more actuarial assumptions. Actual rates of decrement and salary increases are compared to the actuarially assumed values and modified as deemed appropriate by the Actuary.

Funded Ratio: The ratio of the actuarial value of assets (AVA) to the actuarial accrued liability (AAL). Plans sometimes calculate a market funded ratio, using the market value of assets (MVA), rather than the AVA.

Funding Period or ***Amortization Period:*** The term "Funding Period" is used two ways. In the first sense, it is the period used in calculating the Amortization Payment as a component of the ADC. This funding period is specified in State statute. In the second sense, it is a calculated item: the number of years in the future that will theoretically be required to amortize (i.e., pay off or eliminate) the Unfunded Actuarial Accrued Liability, based on a statutory employer contribution rate, and assuming no future actuarial gains or losses.

GASB: Governmental Accounting Standards Board.

GASB 67 and ***GASB 68***: Governmental Accounting Standards Board Statements No. 67 and No. 68. These are the governmental accounting standards that set the accounting and reporting rules for public retirement systems and the employers that sponsor, participate in, or contribute to them. Statement No. 67 sets the accounting rules for the financial reporting of the retirement systems, while Statement No. 68 sets the rules for the employers that sponsor, participate in, or contribute to public retirement systems.

Normal Cost: That portion of the Actuarial Present Value of pension plan benefits and expenses which is allocated to a valuation year by the Actuarial Cost Method. Any payment in respect of an Unfunded

Actuarial Accrued Liability is not part of Normal Cost (see Amortization Payment). For pension plan benefits which are provided in part by employee contributions, Normal Cost refers to the total of employee contributions and employer Normal Cost unless otherwise specifically stated. Under the entry age normal cost method, the Normal Cost is intended to be the level cost (when expressed as a percentage of pay) needed to fund the benefits of a member from hire until ultimate termination, death, disability or retirement.

Open Amortization Period: An open amortization period is one which is used to determine the Amortization Payment but may not decrease by exactly one year in the subsequent year's actuarial valuation. For instance, if the initial period is set as 30 years, the same 30-year period is used in determining the Amortization Period each year.

Unfunded Actuarial Accrued Liability: The excess of the Actuarial Accrued Liability over the Actuarial Value of Assets. This value may be negative in which case it may be expressed as a negative Unfunded Actuarial Accrued Liability, also called the Funding Surplus.

Valuation Date or Actuarial Valuation Date: The date as of which the value of assets is determined and as of which the Actuarial Present Value of Future Plan Benefits is determined. The expected benefits to be paid in the future are discounted to this date.

APPENDIX D

KERS NON-HAZARDOUS EMPLOYER CONTRIBUTION BY AGENCY

Appendix D
Kentucky Employees Retirement System (Non-Hazardous) - Retirement and Insurance Combined
Employer Contribution by Agency

		Fixed Percentage of the Total Amortization Cost				Components of Required Contribution for FYE 2025 & FYE 2026			
Agency Name[1]	Agency Classification[1]	Accrued Liability based on June 30, 2019 Valuation[2]	Fixed Allocation of Amortization Cost	Amortization Cost for prior year (FYE2023/2024)	Amortization Cost Remains Level until Actuarial Investigation[3]	Normal Cost (% of Pay)	Amortization Cost FYE 2025	Amortization Cost FYE 2026	Change in Amortization Cost from FY24 to FY26
(1)	(2)	(3)	(4) = (3) / $18,813M	(5)	(6), per KRS 61.565(1)(d)1d	(7) = 8.44% of pay for all employers	(8) = (4) x $857M[3]	(9) = (4) x $857M	(10) = (9) - (5)
LEGISLATIVE BRANCH AGENCIES	LEGISLATIVE BRANCH	343,338,931	1.82505%	18,070,756	No	8.44%	15,632,667	15,632,667	(2,438,089)
JUDICIAL BRANCH AGENCIES	JUDICIAL BRANCH	471,819,378	2.50801%	24,833,094	No	8.44%	21,482,637	21,482,637	(3,350,457)
EXECUTIVE BRANCH AGENCIES	EXECUTIVE BRANCH	14,661,188,769	77.93303%	772,046,864	No	8.44%	667,543,975	667,543,975	(104,502,889)
LEX FAYETTE CO HLTH DEPT	Health Departments	87,677,599	0.46606%	4,766,461	Yes	8.44%	4,766,461	3,992,088	(774,373)
LAKE CUMBERLAND DISTRICT	Health Departments	73,620,021	0.39134%	4,002,276	Yes	8.44%	4,002,276	3,352,066	(650,210)
BARREN RVR DIST HLTH DEPT	Health Departments	68,379,065	0.36348%	3,717,357	Yes	8.44%	3,717,357	3,113,428	(603,929)
GREEN RVR DIST HLTH DEPT	Health Departments	81,739,718	0.43450%	4,443,692	Yes	8.44%	4,443,692	3,721,758	(721,934)
NORTHERN KY DIST HLTH DEP	Health Departments	54,194,473	0.28808%	2,946,205	Yes	8.44%	2,946,205	2,467,581	(478,624)
LINCOLN TRL DIST HLTH DEP	Health Departments	66,500,206	0.35349%	3,615,244	Yes	8.44%	3,615,244	3,027,858	(587,386)
KY RIVER DIST HEALTH DEPT	Health Departments	70,220,607	0.37327%	3,817,495	Yes	8.44%	3,817,495	3,197,285	(620,210)
MADISON CO HEALTH DEP	Health Departments	53,457,239	0.28416%	2,906,171	Yes	8.44%	2,906,171	2,434,004	(472,167)
CUMBERLAND VLY DIST HEALT	Health Departments	89,949,862	0.47814%	4,889,995	Yes	8.44%	4,889,995	4,095,561	(794,434)
WEDCO DIST HEALTH DEPT	Health Departments	28,173,710	0.14976%	1,531,594	Yes	8.44%	1,531,594	1,282,786	(248,808)
FRANKLIN CO HEALTH DEPT	Health Departments	22,299,718	0.11854%	1,212,256	Yes	8.44%	1,212,256	1,015,367	(196,889)
WHITLEY CO HEALTH DEPT	Health Departments	28,890,387	0.15357%	1,570,588	Yes	8.44%	1,570,588	1,315,421	(255,167)
PIKE CO HEALTH DEPT	Health Departments	24,182,977	0.12855%	1,314,681	Yes	8.44%	1,314,681	1,101,109	(213,572)
THREE RIVERS DIST HLTH	Health Departments	22,852,018	0.12147%	1,242,308	Yes	8.44%	1,242,308	1,040,465	(201,843)
KNOX CO HEALTH DEPT	Health Departments	28,079,768	0.14926%	1,526,499	Yes	8.44%	1,526,499	1,278,503	(247,996)
PURCHASE DIST HLTH DEPT	Health Departments	43,960,371	0.23368%	2,389,886	Yes	8.44%	2,389,886	2,001,612	(388,274)
CLARK CO HEALTH DEPT	Health Departments	16,463,623	0.08751%	894,998	Yes	8.44%	894,998	749,577	(145,421)
GATEWAY DIST HEALTH DEPT	Health Departments	29,474,251	0.15667%	1,602,304	Yes	8.44%	1,602,304	1,341,974	(260,330)
N CENTRAL DIST HLTH DEPT	Health Departments	21,562,812	0.11462%	1,172,222	Yes	8.44%	1,172,222	981,790	(190,432)
BREATHITT CO HEALTH DEPT	Health Departments	18,123,824	0.09634%	985,257	Yes	8.44%	985,257	825,211	(160,046)
PENNYRILE DIST HLTH DEPT	Health Departments	15,661,674	0.08325%	851,429	Yes	8.44%	851,429	713,087	(138,342)
MARSHALL CO HEALTH DEPT	Health Departments	15,263,463	0.08113%	829,800	Yes	8.44%	829,800	694,928	(134,872)
CHRISTIAN CO HEALTH DEPT	Health Departments	13,360,854	0.07102%	726,335	Yes	8.44%	726,335	608,330	(118,005)
MONTGOMERY CO HEALTH DEPT	Health Departments	10,699,698	0.05688%	581,692	Yes	8.44%	581,692	487,212	(94,480)
HOPKINS CO HEALTH DEPT	Health Departments	17,815,060	0.09470%	968,516	Yes	8.44%	968,516	811,163	(157,353)
JOHNSON CO HEALTH DEPT	Health Departments	15,484,079	0.08231%	841,758	Yes	8.44%	841,758	705,035	(136,723)
FLOYD CO HEALTH CENTER	Health Departments	12,298,013	0.06537%	668,519	Yes	8.44%	668,519	559,934	(108,585)
ASHLAND BOYD CO HEALTH DP	Health Departments	17,566,824	0.09338%	954,998	Yes	8.44%	954,998	799,857	(155,141)
LAUREL CO HEALTH DEPT	Health Departments	14,475,341	0.07695%	786,958	Yes	8.44%	786,958	659,124	(127,834)
BULLITT CO HEALTH DEPT	Health Departments	13,823,739	0.07348%	751,499	Yes	8.44%	751,499	629,401	(122,098)
BELL CO HEALTH DEPT	Health Departments	10,731,667	0.05705%	583,459	Yes	8.44%	583,459	488,668	(94,791)
GREENUP CO HLTH DEPT	Health Departments	11,509,071	0.06118%	625,677	Yes	8.44%	625,677	524,044	(101,633)
JESSAMINE CO HEALTH DEPT	Health Departments	8,409,539	0.04470%	457,222	Yes	8.44%	457,222	382,883	(74,339)
GRAVES CO HEALTH CENTER	Health Departments	6,110,503	0.03248%	332,232	Yes	8.44%	332,232	278,211	(54,021)
HARLAN CO HEALTH DEPT	Health Departments	7,218,470	0.03837%	392,439	Yes	8.44%	392,439	328,662	(63,777)
OLDHAM CO HEALTH DEPT	Health Departments	10,480,598	0.05571%	569,733	Yes	8.44%	569,733	477,190	(92,543)
ALLEN CO HEALTH DEPT	Health Departments	7,911,333	0.04205%	430,082	Yes	8.44%	430,082	360,184	(69,898)
BUFFALO TRACE HEALTH DEPT	Health Departments	10,788,599	0.05735%	586,475	Yes	8.44%	586,475	491,238	(95,237)
MUHLENBERG CO.HEALTH DEPT	Health Departments	7,886,100	0.04192%	428,730	Yes	8.44%	428,730	359,070	(69,660)
MERCER CO HEALTH DEPT	Health Departments	8,877,255	0.04719%	482,594	Yes	8.44%	482,594	404,211	(78,383)
LAWRENCE CO HEALTH DEPT	Health Departments	3,868,705	0.02056%	210,362	Yes	8.44%	210,362	176,109	(34,253)
WOODFORD CO HEALTH DEPT	Health Departments	5,453,322	0.02899%	296,461	Yes	8.44%	296,461	248,317	(48,144)
CALLOWAY CO HEALTH DEPT	Health Departments	4,137,638	0.02199%	224,919	Yes	8.44%	224,919	188,358	(36,561)
MAGOFFIN CO HEALTH DEPT	Health Departments	6,467,092	0.03438%	351,573	Yes	8.44%	351,573	294,486	(57,087)
MARTIN CO HEALTH DEPT	Health Departments	5,286,010	0.02810%	287,414	Yes	8.44%	287,414	240,694	(46,720)
BOYLE CO HEALTH DEPT	Health Departments	6,346,920	0.03374%	345,022	Yes	8.44%	345,022	289,004	(56,018)
BOURBON CO HEALTH CENTER	Health Departments	7,775,901	0.04133%	422,699	Yes	8.44%	422,699	354,017	(68,682)
ANDERSON CO HEALTH DEPT	Health Departments	5,076,042	0.02698%	275,976	Yes	8.44%	275,976	231,100	(44,876)
LEWIS CO HEALTH DEPT	Health Departments	3,061,131	0.01627%	166,376	Yes	8.44%	166,376	139,362	(27,014)
ESTILL CO HEALTH DEPT	Health Departments	5,579,547	0.02966%	303,324	Yes	8.44%	303,324	254,056	(49,268)
LINCOLN CO HEALTH DEPT	Health Departments	4,897,375	0.02603%	266,201	Yes	8.44%	266,201	222,963	(43,238)
BRECKINRIDGE CO HEALTH BD	Health Departments	7,704,261	0.04095%	418,851	Yes	8.44%	418,851	350,762	(68,089)
GRAYSON COUNTY HEALTH DEPT	Health Departments	4,598,067	0.02444%	249,980	Yes	8.44%	249,980	209,344	(40,636)
GARRARD COUNTY HEALTH DPT	Health Departments	3,926,271	0.02087%	213,481	Yes	8.44%	213,481	178,764	(34,717)
TODD CO HEALTH DEPT	Health Departments	4,687,868	0.02492%	254,867	Yes	8.44%	254,867	213,455	(41,412)
FLEMING CO HEALTH DEP	Health Departments	4,386,549	0.02332%	238,437	Yes	8.44%	238,437	199,750	(38,687)
MONROE CO HEALTH DEPT	Health Departments	3,137,459	0.01668%	170,535	Yes	8.44%	170,535	142,874	(27,661)
BRACKEN CO HEALTH DEPT	Health Departments	2,410,616	0.01281%	131,021	Yes	8.44%	131,021	109,725	(21,296)
POWELL CO HEALTH DEPT	Health Departments	4,200,545	0.02233%	228,351	Yes	8.44%	228,351	191,270	(37,081)
CARTER CO HEALTH DEPT	Health Departments	5,555,239	0.02953%	301,972	Yes	8.44%	301,972	252,942	(49,030)
KY HIGHER ED STUD LN CORP	Non-P1 State Assoc/Corp.	81,896,904	0.43533%	4,310,426	No	8.44%	3,728,867	3,728,867	(581,559)
CSG HEADQUARTERS	Non-P1 State Assoc/Corp.	19,274,916	0.10246%	1,014,509	No	8.44%	877,632	877,632	(136,877)
KET FOUNDATION	Non-P1 State Assoc/Corp.	15,066,238	0.08009%	793,012	No	8.44%	686,020	686,020	(106,992)
ASST OF COMMONWEALTH ATTY	Non-P1 State Assoc/Corp.	5,807,856	0.03087%	305,660	No	8.44%	264,420	264,420	(41,240)
HIGHSCHOOL ATHLETIC ASSOC	Non-P1 State Assoc/Corp.	1,413,847	0.00752%	74,459	No	8.44%	64,413	64,413	(10,046)
O A S I S	Non-P1 State Agencies	2,304,549	0.01225%	125,302	Yes	8.44%	125,302	104,929	(20,373)
KDVA	Non-P1 State Agencies	2,431,059	0.01292%	132,165	Yes	8.44%	132,165	110,668	(21,497)
B.R.A.S.S.	Non-P1 State Agencies	2,132,362	0.01133%	115,943	Yes	8.44%	115,943	97,048	(18,895)
BLUEGRASS RAPE CRISIS CTR	Non-P1 State Agencies	2,744,493	0.01459%	149,218	Yes	8.44%	149,218	124,972	(24,246)
SAFE HARBOR	Non-P1 State Agencies	1,312,696	0.00698%	71,334	Yes	8.44%	71,334	59,788	(11,546)
SANCTUARY INC	Non-P1 State Agencies	2,510,255	0.01334%	136,428	Yes	8.44%	136,428	114,265	(22,163)
LOTUS	Non-P1 State Agencies	1,074,054	0.00571%	58,440	Yes	8.44%	58,440	48,910	(9,530)
BETHANY HOUSE ABUSE SHELT	Non-P1 State Agencies	1,675,224	0.00890%	91,091	Yes	8.44%	91,091	76,234	(14,857)
SPRINGHAVEN INC	Non-P1 State Agencies	1,527,812	0.00812%	83,084	Yes	8.44%	83,084	69,553	(13,531)
KASAP	Non-P1 State Agencies	943,862	0.00502%	51,265	Yes	8.44%	51,265	42,999	(8,266)

Appendix D
Kentucky Employees Retirement System (Non-Hazardous) - Retirement and Insurance Combined
Employer Contribution by Agency

Agency Name[1]	Agency Classification[1]	Fixed Percentage of the Total Amortization Cost: Accrued Liability based on June 30, 2019 Valuation[2]	Fixed Allocation of Amortization Cost	Amortization Cost for prior year (FYE2023/2024)	Amortization Cost Remains Level until Actuarial Investigation[3]	Components of Required Contribution for FYE 2025 & FYE 2026: Normal Cost (% of Pay)	Amortization Cost FYE 2025	Amortization Cost FYE 2026	Change in Amortization Cost from FY24 to FY26
(1)	(2)	(3)	(4) = (3) / $18,813M	(5)	(6), per KRS 61.565(1)(d)1d	(7) = 8.44% of pay for all employers	(8) = (4) x $857M[3]	(9) = (4) x $857M	(10) = (9) - (5)
SILVERLEALF	Non-P1 State Agencies	2,017,711	0.01073%	109,704	Yes	8.44%	109,704	91,909	(17,795)
WOMEN AWARE	Non-P1 State Agencies	975,811	0.00519%	53,032	Yes	8.44%	53,032	44,456	(8,576)
D.O.V.E.S.	Non-P1 State Agencies	1,319,147	0.00701%	71,750	Yes	8.44%	71,750	60,045	(11,705)
NURSING HOME OMBUDSMAN	Non-P1 State Agencies	879,808	0.00468%	46,339	No	8.44%	40,087	40,087	(6,252)
HOPE HARBOR INC	Non-P1 State Agencies	824,202	0.00438%	44,818	Yes	8.44%	44,818	37,517	(7,301)
CHILD WATCH ADVOCACY CTR	Non-P1 State Agencies	718,149	0.00382%	38,994	Yes	8.44%	38,994	32,721	(6,273)
FRANKLIN CO COUNCIL AGING	Non-P1 State Agencies	2,147,140	0.01141%	112,976	No	8.44%	97,734	97,734	(15,242)
JUDI'S PLACE FOR KIDS, INC.	Non-P1 State Agencies	777,468	0.00413%	42,218	Yes	8.44%	42,218	35,376	(6,842)
CUMBERLAND V C A CENTER	Non-P1 State Agencies	821,917	0.00437%	44,714	Yes	8.44%	44,714	37,432	(7,282)
KY ASSOC OF REGIONAL PROG	Non-P1 State Agencies	1,817,343	0.00966%	98,786	Yes	8.44%	98,786	82,744	(16,042)
BARREN RIVER CHILD ADVOCA	Non-P1 State Agencies	406,450	0.00216%	22,045	Yes	8.44%	22,045	18,502	(3,543)
CHILD ADV CTR OF GRN RVR	Non-P1 State Agencies	572,517	0.00304%	31,091	Yes	8.44%	31,091	26,039	(5,052)
MUN ELEC POW ASSOC OF KY	Non-P1 State Agencies	1,745,743	0.00928%	91,886	No	8.44%	79,489	79,489	(12,397)
KY RIVER CHILD ADVOCACY	Non-P1 State Agencies	290,885	0.00155%	15,806	Yes	8.44%	15,806	13,277	(2,529)
PENNYRILE CHILD ADV CTR	Non-P1 State Agencies	460,162	0.00245%	25,060	Yes	8.44%	25,060	20,986	(4,074)
LAKE CUMB CHILD ADV CTR	Non-P1 State Agencies	545,959	0.00290%	29,636	Yes	8.44%	29,636	24,840	(4,796)
BUFFALO TR CHILD ADV INC	Non-P1 State Agencies	252,189	0.00134%	13,726	Yes	8.44%	13,726	11,478	(2,248)
NEW VISTA OF THE BLUEGRASS, INC.	Reg Mental Hlth Units	183,780,745	0.97691%	9,991,080	Yes	8.44%	9,991,080	8,367,830	(1,623,250)
CUMBERLAND RIVER MHMR	Reg Mental Hlth Units	98,252,502	0.52227%	5,341,394	Yes	8.44%	5,341,394	4,473,561	(867,833)
LIFESKILLS INC	Reg Mental Hlth Units	129,215,562	0.68686%	7,024,702	Yes	8.44%	7,024,702	5,883,375	(1,141,327)
COMMUNICARE INC	Reg Mental Hlth Units	66,572,026	0.35387%	3,619,091	Yes	8.44%	3,619,091	3,031,113	(587,978)
ADANTA/BEHAVIORAL HLTH SR	Reg Mental Hlth Units	89,012,578	0.47316%	4,839,042	Yes	8.44%	4,839,042	4,052,904	(786,138)
MOUNTAIN COMP CARE CENTER	Reg Mental Hlth Units	45,808,460	0.24350%	2,490,335	Yes	8.44%	2,490,335	2,085,726	(404,609)
GREEN RVR REG MHMR BD	Reg Mental Hlth Units	29,849,717	0.15867%	1,622,789	Yes	8.44%	1,622,789	1,359,105	(263,684)
NORTHERN KY REG MHMR BD	Reg Mental Hlth Units	57,271,755	0.30443%	3,113,517	Yes	8.44%	3,113,517	2,607,629	(505,888)
WESTERN KY REG MHMR ADV	Reg Mental Hlth Units	35,526,557	0.18885%	1,931,416	Yes	8.44%	1,931,416	1,617,616	(313,800)
COMPREHEND INC REG MHMR B	Reg Mental Hlth Units	29,064,447	0.15450%	1,580,051	Yes	8.44%	1,580,051	1,323,387	(256,664)
SEVEN CO SERVICES INC	Reg Mental Hlth Units	154,213,520	0.81974%	8,383,681	Yes	8.44%	8,383,681	7,021,573	(1,362,108)
KY RIVER COMM CARE INC	Reg Mental Hlth Units	26,687,511	0.14186%	1,450,798	Yes	8.44%	1,450,798	1,215,117	(235,681)
EASTERN KY UNIV	Universities	239,031,382	1.27060%	12,580,858	No	8.44%	10,883,465	10,883,465	(1,697,393)
KCTCS	Universities	156,197,124	0.83028%	8,220,992	No	8.44%	7,111,855	7,111,855	(1,109,137)
WESTERN KENTUCKY UNIV	Universities	180,798,950	0.96106%	9,515,948	No	8.44%	8,232,066	8,232,066	(1,283,882)
MURRAY STATE UNIV	Universities	132,693,175	0.70534%	6,983,851	No	8.44%	6,041,668	6,041,668	(942,183)
MOREHEAD STATE UNIVERSITY	Universities	120,999,617	0.64319%	6,368,494	No	8.44%	5,509,315	5,509,315	(859,179)
KENTUCKY STATE UNIVERSITY	Universities	44,391,511	0.23597%	2,336,460	No	8.44%	2,021,227	2,021,227	(315,233)
ALLEN COUNTY ATTORNEY	County Attorneys	1,658,981	0.00882%	87,331	No	8.44%	75,549	75,549	(11,782)
ANDERSON COUNTY ATTORNEY	County Attorneys	1,971,500	0.01048%	103,768	No	8.44%	89,768	89,768	(14,000)
BARREN COUNTY ATTORNEY	County Attorneys	2,875,029	0.01528%	151,295	No	8.44%	130,883	130,883	(20,412)
BATH COUNTY ATTORNEY	County Attorneys	2,729	0.00001%	99	No	8.44%	86	86	(13)
BELL COUNTY ATTORNEY	County Attorneys	1,931,690	0.01027%	101,689	No	8.44%	87,969	87,969	(13,720)
BOONE COUNTY ATTORNEY	County Attorneys	5,092,956	0.02707%	268,034	No	8.44%	231,871	231,871	(36,163)
BOYLE COUNTY ATTORNEY	County Attorneys	155,378	0.00083%	8,218	No	8.44%	7,109	7,109	(1,109)
BRECKINRIDGE CO ATTORNEY	County Attorneys	1,029,674	0.00547%	54,161	No	8.44%	46,854	46,854	(7,307)
BULLITT COUNTY ATTORNEY	County Attorneys	703,350	0.00374%	37,032	No	8.44%	32,035	32,035	(4,997)
CALLOWAY COUNTY ATTORNEY	County Attorneys	54,643	0.00029%	2,871	No	8.44%	2,484	2,484	(387)
CARROLL COUNTY ATTORNEY	County Attorneys	873,614	0.00464%	45,943	No	8.44%	39,744	39,744	(6,199)
CASEY COUNTY ATTORNEY	County Attorneys	947,428	0.00504%	49,904	No	8.44%	43,171	43,171	(6,733)
CHILD SUPPORT ENCORCEMENT	County Attorneys	255,979	0.00136%	13,466	No	8.44%	11,649	11,649	(1,817)
CHRISTIAN COUNTY ATTORNEY	County Attorneys	984,086	0.00523%	51,785	No	8.44%	44,798	44,798	(6,987)
CLARK COUNTY ATTORNEY	County Attorneys	1,322,750	0.00703%	69,608	No	8.44%	60,216	60,216	(9,392)
CRITTENDEN CO ATTORNEY	County Attorneys	365,437	0.00194%	19,209	No	8.44%	16,617	16,617	(2,592)
DAVIESS COUNTY ATTORNEY	County Attorneys	1,578,350	0.00839%	83,074	No	8.44%	71,865	71,865	(11,209)
EDMONSON COUNTY ATTORNEY	County Attorneys	474,886	0.00252%	24,952	No	8.44%	21,585	21,585	(3,367)
FAYETTE CO ATTORNEY OFF	County Attorneys	3,136,743	0.01667%	165,058	No	8.44%	142,789	142,789	(22,269)
FLOYD COUNTY ATTORNEY	County Attorneys	1,121,075	0.00596%	59,013	No	8.44%	51,051	51,051	(7,962)
FRANKLIN COUNTY ATTORNEY	County Attorneys	4,833,960	0.02570%	254,469	No	8.44%	220,136	220,136	(34,333)
GARRARD COUNTY ATTORNEY	County Attorneys	988,761	0.00526%	52,082	No	8.44%	45,055	45,055	(7,027)
GRANT COUNTY CHILD SUPPOR	County Attorneys	363,477	0.00193%	19,110	No	8.44%	16,532	16,532	(2,578)
GRAVES COUNTY ATTORNEY	County Attorneys	3,272,663	0.01740%	172,286	No	8.44%	149,042	149,042	(23,244)
HANCOCK COUNTY ATTORNEY	County Attorneys	386,098	0.00205%	20,298	No	8.44%	17,560	17,560	(2,738)
HARRISON COUNTY ATTORNEY	County Attorneys	114,873	0.00061%	6,040	No	8.44%	5,225	5,225	(815)
HICKMAN COUNTY ATTORNEY	County Attorneys	1,028,593	0.00547%	54,161	No	8.44%	46,854	46,854	(7,307)
HOPKINS COUNTY ATTORNEY	County Attorneys	1,751,470	0.00931%	92,183	No	8.44%	79,746	79,746	(12,437)
JACKSON COUNTY ATTORNEY	County Attorneys	700,551	0.00372%	36,834	No	8.44%	31,864	31,864	(4,970)
JEFFERSON CO ATTORNEY	County Attorneys	17,081,131	0.09080%	899,042	No	8.44%	777,757	777,757	(121,285)
JOHNSON COUNTY ATTORNEY	County Attorneys	230,506	0.00123%	12,179	No	8.44%	10,536	10,536	(1,643)
KENTON COUNTY ATTORNEY	County Attorneys	1,021,997	0.00543%	53,765	No	8.44%	46,511	46,511	(7,254)
KNOTT COUNTY ATTORNEY	County Attorneys	900,207	0.00479%	47,428	No	8.44%	41,029	41,029	(6,399)
KNOX COUNTY ATTORNEY	County Attorneys	5,454	0.00003%	297	No	8.44%	257	257	(40)
LARUE COUNTY ATTORNEY	County Attorneys	1,041,769	0.00554%	54,854	No	8.44%	47,453	47,453	(7,401)
LAUREL COUNTY ATTORNEY	County Attorneys	353,526	0.00188%	18,615	No	8.44%	16,103	16,103	(2,512)
LAWRENCE COUNTY ATTORNEY	County Attorneys	144	0.00000%	-	No	8.44%	-	-	-
LEE COUNTY ATTORNEY	County Attorneys	888,298	0.00472%	46,735	No	8.44%	40,430	40,430	(6,305)
LOGAN COUNTY ATTORNEY	County Attorneys	1,781,059	0.00947%	93,767	No	8.44%	81,116	81,116	(12,651)
MADISON COUNTY ATTORNEY	County Attorneys	6,471,517	0.03440%	340,612	No	8.44%	294,657	294,657	(45,955)
MAGOFFIN CO ATTORNEY	County Attorneys	195,563	0.00104%	10,298	No	8.44%	8,908	8,908	(1,390)
MCCRACKEN COUNTY ATTORNEY	County Attorneys	1,092,697	0.00581%	57,528	No	8.44%	49,766	49,766	(7,762)
MCCREARY COUNTY ATTORNEY	County Attorneys	1,920,823	0.01021%	101,094	No	8.44%	87,455	87,455	(13,639)
MEADE COUNTY ATTORNEY	County Attorneys	1,485,282	0.00790%	78,222	No	8.44%	67,668	67,668	(10,554)

Appendix D
Kentucky Employees Retirement System (Non-Hazardous) - Retirement and Insurance Combined
Employer Contribution by Agency

Agency Name[1]	Agency Classification[1]	Fixed Percentage of the Total Amortization Cost: Accrued Liability based on June 30, 2019 Valuation[2]	Fixed Allocation of Amortization Cost	Amortization Cost for prior year (FYE2023/2024)	Amortization Cost Remains Level until Actuarial Investigation[3]	Components of Required Contribution for FYE 2025 & FYE 2026: Normal Cost (% of Pay)	Amortization Cost FYE 2025	Amortization Cost FYE 2026	Change in Amortization Cost from FY24 to FY26
(1)	(2)	(3)	(4) = (3) / $18,813M	(5)	(6), per KRS 61.565(1)(d)1d	(7) = 8.44% of pay for all employers	(8) = (4) x $857M[3]	(9) = (4) x $857M	(10) = (9) - (5)
MENIFEE COUNTY ATTORNEY	County Attorneys	568,840	0.00302%	29,903	No	8.44%	25,868	25,868	(4,035)
MERCER COUNTY ATTORNEY	County Attorneys	507,084	0.00270%	26,734	No	8.44%	23,127	23,127	(3,607)
MONROE CO ATTORNEY	County Attorneys	617,699	0.00328%	32,477	No	8.44%	28,095	28,095	(4,382)
MONTGOMERY CO ATTORNEY	County Attorneys	1,684,951	0.00896%	88,718	No	8.44%	76,748	76,748	(11,970)
MORGAN COUNTY ATTORNEY	County Attorneys	1,815,404	0.00965%	95,550	No	8.44%	82,658	82,658	(12,892)
OLDHAM COUNTY ATTORNEY	County Attorneys	1,690,959	0.00899%	89,015	No	8.44%	77,005	77,005	(12,010)
OWEN COUNTY ATTORNEY	County Attorneys	490,212	0.00261%	25,843	No	8.44%	22,356	22,356	(3,487)
PENDLETON COUNTY ATTORNEY	County Attorneys	155,600	0.00083%	8,218	No	8.44%	7,109	7,109	(1,109)
POWELL COUNTY ATTORNEY	County Attorneys	26,895	0.00014%	1,386	No	8.44%	1,199	1,199	(187)
PULASKI COUNTY ATTORNEY	County Attorneys	1,602,159	0.00852%	84,361	No	8.44%	72,979	72,979	(11,382)
ROCKCASTLE CO ATTORNEY	County Attorneys	774,276	0.00412%	40,794	No	8.44%	35,290	35,290	(5,504)
ROWAN COUNTY ATTORNEY	County Attorneys	820,120	0.00436%	43,171	No	8.44%	37,346	37,346	(5,825)
SHELBY COUNTY ATTORNEY	County Attorneys	400,120	0.00213%	21,090	No	8.44%	18,245	18,245	(2,845)
SIMPSON COUNTY ATTORNEY	County Attorneys	521,989	0.00277%	27,427	No	8.44%	23,727	23,727	(3,700)
SPENCER COUNTY ATTORNEY	County Attorneys	1,200,709	0.00638%	63,172	No	8.44%	54,649	54,649	(8,523)
TRIGG COUNTY ATTORNEY	County Attorneys	933,350	0.00496%	49,112	No	8.44%	42,485	42,485	(6,627)
TRIMBLE COUNTY ATTORNEY	County Attorneys	749,934	0.00399%	39,507	No	8.44%	34,177	34,177	(5,330)
UNION COUNTY ATTORNEY	County Attorneys	293,278	0.00156%	15,446	No	8.44%	13,362	13,362	(2,084)
WAYNE COUNTY ATTORNEY	County Attorneys	668,657	0.00355%	35,150	No	8.44%	30,408	30,408	(4,742)
WEBSTER COUNTY ATTORNEY	County Attorneys	1,413,256	0.00751%	74,360	No	8.44%	64,328	64,328	(10,032)
WHITLEY COUNTY ATTORNEY	County Attorneys	2,013,956	0.01071%	106,045	No	8.44%	91,738	91,738	(14,307)
OHIO COUNTY ATTORNEY	County Attorneys	-	0.00000%	-	No	8.44%	-	-	-
GALLATIN COUNTY ATTORNEY	County Attorneys	-	0.00000%	-	No	8.44%	-	-	-
SCOTT COUNTY ATTORNEY	County Attorneys	-	0.00000%	-	No	8.44%	-	-	-
	Total	18,812,529,777	100.00000%	994,421,476	N/A	8.44%	876,349,193	856,561,041	(137,860,435)
Agencies that have ceased participation in the System:									
KENTUCKY BAR ASSOCIATION	Non-P1 State Agencies	9,726,855	N/A	-	N/A	N/A	N/A	N/A	N/A
KENTUCKY ASSOCIATION OF CHILDREN'S ADVOC	Non-P1 State Agencies	14,508	N/A	-	N/A	N/A	N/A	N/A	N/A
COMMONWEALTH CREDIT UNION	Non-P1 State Agencies	46,950,704	N/A	-	N/A	N/A	N/A	N/A	N/A
KENTUCKY EMPLOYERS MUTUAL INSURANCE	Non-P1 State Agencies	15,220,243	N/A	-	N/A	N/A	N/A	N/A	N/A
GATEWAY CHILD ADVOCACY	Non-P1 State Agencies	53,228	N/A	-	N/A	N/A	N/A	N/A	N/A
NORTHERN KY UNIVERSITY	Universities	216,716,312	N/A	-	N/A	N/A	N/A	N/A	N/A
KENTUCKY HOUSING CORP	Non-P1 State Assoc/Corp.	98,280,874	N/A	-	N/A	N/A	N/A	N/A	N/A
	Total	19,199,492,501	100.00000%	994,421,476	N/A	8.44%	876,349,193	856,561,041	(137,860,435)

Notes and Assumptions

[1] Agency names and classification information have been provided to GRS by KPPA. We have reviewed this data for consistency but did not audit the data.

[2] The accrued liability as of June 30, 2019 has been adjusted based on the approved employer appeals. The liability associated with these appeals was compiled by KPPA based on the liability amounts provided by GRS.

[3] The amortization cost for certain employers (as defined in KRS 61.565(1)(d)1d) will not be adjusted in terms of dollars paid by the individual employer, except for after the completion of an actuarial investigation as provided by KRS 61.670, so long as at least four years have passed since the last adjustment.
Applicable employers are first eligible for an adjustment in their amortization cost in FYE 2026.

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December 5, 2023

Board of Trustees
Kentucky Retirement Systems
Perimeter Park West
1260 Louisville Road
Frankfort, KY 40601

Re: Sensitivity Analysis Based on Results of the June 30, 2023 Actuarial Valuation – KERS

Dear Members of the Board:

Per Kentucky State Statute 61.670, we are providing this supplemental information regarding the sensitivity of the valuation results to changes in some of the economic assumptions. Specifically, the enclosed tables show the impact for the **Kentucky Employees Retirement System (KERS)** due to changes in the investment return assumption, the inflation rate assumption, and the payroll growth rate assumption.

Background

Investment Assumption

The investment return assumption is used to discount future expected benefit payments to the valuation date in order to determine the liabilities of the plans. The lower the investment return assumption, the less the benefit payments are discounted and the higher the valuation liability. The current investment return assumption is 5.25% for the non-hazardous retirement fund, 6.25% for the hazardous retirement fund, and 6.50% for both insurance funds. The sensitivity analysis shows the financial impact of a 1.00% increase and a 1.00% decrease in the investment return assumption. For purposes of this sensitivity analysis, the inflation assumption and payroll growth assumption remain unchanged from the valuation assumption.

Inflation Assumption

The inflation assumption underlies most of the other economic assumptions, including the investment return, salary increases, and payroll growth rate. This is a macroeconomic assumption and as such the same assumption is used in the valuation of each of the retirement systems. The current assumption is 2.50% for all funds. The sensitivity analysis shows the financial impact of a 0.25% increase and a 0.25% decrease in the inflation assumption. Note, the change in the inflation assumption results in a corresponding change in the investment return assumption, the individual salary increase assumption for projecting members' benefit amounts, the payroll growth rate assumption, and the healthcare trend assumption that is used in the valuation of the health insurance funds.

Payroll Growth Assumption

Participating employers of the hazardous fund make contributions to the system as a percentage of covered payroll. Therefore, as payroll changes over time these amortization payments will also change. If actual covered payroll increases at a rate that is less than assumed, then the retirement system receives fewer contribution dollars than expected to finance the unfunded liability, which means the contribution rate in future years will be required to increase in order to finance the unfunded liability over the same time period. The current payroll growth assumption is 0.00% for both the retirement and insurance funds. The analysis shows the impact of a 1.00% increase and a 1.00% decrease in the payroll growth assumption.

For completeness, we have included this sensitivity for the non-hazardous fund. House Bill 8 passed during the 2021 legislative session and changed how contributions are collected and allocated amongst employers. The portion of the required contribution that amortizes (or pays for) the unfunded liability for the non-hazardous fund is no longer collected as a percentage of payroll. This sensitivity for the non-hazardous fund shows the impact of assuming that the amortization cost contributions paid by employers either decrease by 1% or increase by 1% annually (versus the valuation assumption that they remain level through the end of the funding period).

Please note that the payroll growth assumption does not impact the valuation liabilities, unfunded liability, or funded status of the system. Rather, this assumption only impacts the amortization rate for financing the existing unfunded actuarial accrued liability and the actuarially determined employer contribution. For purposes of this analysis, the investment return assumption and the inflation assumption are held at their current valuation assumptions.

Certification

The information provided in this letter compliments the information provided in the June 30, 2023 actuarial valuation report. Please refer to the June 30, 2023 actuarial valuation report for additional discussion of the actuarial valuation, including the nature of actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions.

Actual results can, and almost certainly will, differ as actual experience deviates from the assumptions. Even seemingly minor changes in the assumptions can materially change the liabilities, calculated contribution rate, and funding periods. The actuarial calculations are intended to provide information for rational decision making. The purpose of this information is to provide stakeholders the financial sensitivity of the unfunded liability and contribution rates to changes in the inflation, assumed rate of return, and payroll growth assumption.

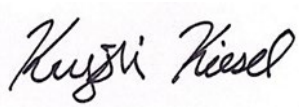
To the best of our knowledge, this report is complete and accurate and is in accordance with generally recognized actuarial practices and methods. Mr. White and Ms. Shaw are Enrolled Actuaries. All three of the undersigned are members of the American Academy of Actuaries and meet all of the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. In addition, all three are independent of KPPA and are experienced in performing valuations for large public retirement systems. This communication shall not be construed to provide tax advice, legal advice or investment advice.

Sincerely,

Gabriel, Roeder, Smith & Company

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

Janie Shaw, ASA, EA, MAAA
Consultant



Krysti Kiesel, ASA, MAAA
Senior Analyst and Actuary

Sensitivity Analysis - Discount Rate
Non-Hazardous Members
(Dollar amounts expressed in thousands)

	Decrease Discount Rate	Valuation Results	Increase Discount Rate
(1)	(2)	(3)	(4)
Payroll Growth Rate	0.00%	0.00%	0.00%
Inflation Rate	2.50%	2.50%	2.50%
Discount Rate - Retirement	4.25%	5.25%	6.25%
Discount Rate - Insurance	5.50%	6.50%	7.50%
Retirement			
Actuarial Accrued Liability	$ 18,233,890	$ 16,304,278	$ 14,704,220
Actuarial Value of Assets	3,552,471	3,552,471	3,552,471
Unfunded Actuarial Accrued Liability	14,681,419	12,751,807	11,151,749
Funded Ratio	19.5%	21.8%	24.2%
Normal Cost Rate	10.12%	6.99%	4.86%
Amortization Cost	$ 919,511	$ 854,588	$ 797,018
Insurance			
Actuarial Accrued Liability	$ 2,088,635	$ 1,877,109	$ 1,699,268
Actuarial Value of Assets	1,532,895	1,532,895	1,532,895
Unfunded Actuarial Accrued Liability	555,740	344,214	166,373
Funded Ratio	73.4%	81.7%	90.2%
Normal Cost Rate	2.01%	1.45%	1.02%
Amortization Cost	$ 17,997	$ 1,973	$ 0
Combined			
Actuarial Accrued Liability	$ 20,322,525	$ 18,181,387	$ 16,403,488
Actuarial Value of Assets	5,085,366	5,085,366	5,085,366
Unfunded Actuarial Accrued Liability	15,237,159	13,096,021	11,318,122
Funded Ratio	25.0%	28.0%	31.0%
Normal Cost Rate	12.13%	8.44%	5.88%
Amortization Cost	$ 937,508	$ 856,561	$ 797,018

Sensitivity Analysis - Inflation Rate
Non-Hazardous Members
(Dollar amounts expressed in thousands)

	Decrease Inflation Rate	Valuation Results	Increase Inflation Rate
(1)	(2)	(3)	(4)
Payroll Growth Rate	-0.25%	0.00%	0.25%
Inflation Rate	2.25%	2.50%	2.75%
Discount Rate - Retirement	5.00%	5.25%	5.50%
Discount Rate - Insurance	6.25%	6.50%	6.75%
Retirement			
Actuarial Accrued Liability	$ 16,722,008	$ 16,304,278	$ 15,905,049
Actuarial Value of Assets	3,552,471	3,552,471	3,552,471
Unfunded Actuarial Accrued Liability	13,169,537	12,751,807	12,352,578
Funded Ratio	21.2%	21.8%	22.3%
Normal Cost Rate	7.43%	6.99%	6.58%
Amortization Cost	$ 888,560	$ 854,588	$ 822,034
Insurance			
Actuarial Accrued Liability	$ 1,898,039	$ 1,877,109	$ 1,857,357
Actuarial Value of Assets	1,532,895	1,532,895	1,532,895
Unfunded Actuarial Accrued Liability	365,144	344,214	324,462
Funded Ratio	80.8%	81.7%	82.5%
Normal Cost Rate	1.51%	1.45%	1.39%
Amortization Cost	$ 4,011	$ 1,973	$ 40
Combined			
Actuarial Accrued Liability	$ 18,620,047	$ 18,181,387	$ 17,762,406
Actuarial Value of Assets	5,085,366	5,085,366	5,085,366
Unfunded Actuarial Accrued Liability	13,534,681	13,096,021	12,677,040
Funded Ratio	27.3%	28.0%	28.6%
Normal Cost Rate	8.94%	8.44%	7.97%
Amortization Cost	$ 892,571	$ 856,561	$ 822,074

Sensitivity Analysis - Payroll Growth
Non-Hazardous Members
(Dollar amounts expressed in thousands)

	Decrease Payroll Growth	Valuation Results	Increase Payroll Growth
(1)	(2)	(3)	(4)
Payroll Growth Rate	-1.00%	0.00%	1.00%
Inflation Rate	2.50%	2.50%	2.50%
Discount Rate - Retirement	5.25%	5.25%	5.25%
Discount Rate - Insurance	6.50%	6.50%	6.50%
Retirement			
Actuarial Accrued Liability	$ 16,304,278	$ 16,304,278	$ 16,304,278
Actuarial Value of Assets	3,552,471	3,552,471	3,552,471
Unfunded Actuarial Accrued Liability	12,751,807	12,751,807	12,751,807
Funded Ratio	21.8%	21.8%	21.8%
Normal Cost Rate	6.99%	6.99%	6.99%
Amortization Cost	$ 939,030	$ 854,588	$ 774,554
Insurance			
Actuarial Accrued Liability	$ 1,877,109	$ 1,877,109	$ 1,877,109
Actuarial Value of Assets	1,532,895	1,532,895	1,532,895
Unfunded Actuarial Accrued Liability	344,214	344,214	344,214
Funded Ratio	81.7%	81.7%	81.7%
Normal Cost Rate	1.45%	1.45%	1.45%
Amortization Cost	$ 4,974	$ 1,973	$ 0
Combined			
Actuarial Accrued Liability	$ 18,181,387	$ 18,181,387	$ 18,181,387
Actuarial Value of Assets	5,085,366	5,085,366	5,085,366
Unfunded Actuarial Accrued Liability	13,096,021	13,096,021	13,096,021
Funded Ratio	28.0%	28.0%	28.0%
Normal Cost Rate	8.44%	8.44%	8.44%
Amortization Cost	$ 944,004	$ 856,561	$ 774,554

Sensitivity Analysis - Discount Rate
Hazardous Members
(Dollar amounts expressed in thousands)

	Decrease Discount Rate	Valuation Results	Increase Discount Rate
(1)	(2)	(3)	(4)
Payroll Growth Rate	0.00%	0.00%	0.00%
Inflation Rate	2.50%	2.50%	2.50%
Discount Rate - Retirement	5.25%	6.25%	7.25%
Discount Rate - Insurance	5.50%	6.50%	7.50%
Retirement			
Actuarial Accrued Liability	$ 1,529,508	$ 1,363,036	$ 1,228,415
Actuarial Value of Assets	891,460	891,460	891,460
Unfunded Actuarial Accrued Liability	638,048	471,576	336,955
Funded Ratio	58.3%	65.4%	72.6%
Actuarially Determined Contribution Rate	32.19%	23.74%	16.72%
Insurance			
Actuarial Accrued Liability	$ 404,767	$ 363,512	$ 329,221
Actuarial Value of Assets	619,519	619,519	619,519
Unfunded Actuarial Accrued Liability	(214,752)	(256,007)	(290,298)
Funded Ratio	153.1%	170.4%	188.2%
Actuarially Determined Contribution Rate	0.00%	0.00%	0.00%
Combined			
Actuarial Accrued Liability	$ 1,934,275	$ 1,726,548	$ 1,557,636
Actuarial Value of Assets	1,510,979	1,510,979	1,510,979
Unfunded Actuarial Accrued Liability	423,296	215,569	46,657
Funded Ratio	78.1%	87.5%	97.0%
Actuarially Determined Contribution Rate	32.19%	23.74%	16.72%

Sensitivity Analysis - Inflation Rate
Hazardous Members
(Dollar amounts expressed in thousands)

	Decrease Inflation Rate	Valuation Results	Increase Inflation Rate
(1)	(2)	(3)	(4)
Payroll Growth Rate	-0.25%	0.00%	0.25%
Inflation Rate	2.25%	2.50%	2.75%
Discount Rate - Retirement	6.00%	6.25%	6.50%
Discount Rate - Insurance	6.25%	6.50%	6.75%
Retirement			
Actuarial Accrued Liability	$ 1,397,841	$ 1,363,036	$ 1,329,957
Actuarial Value of Assets	891,460	891,460	891,460
Unfunded Actuarial Accrued Liability	506,381	471,576	438,497
Funded Ratio	63.8%	65.4%	67.0%
Actuarially Determined Contribution Rate	25.76%	23.74%	21.84%
Insurance			
Actuarial Accrued Liability	$ 368,077	$ 363,512	$ 359,219
Actuarial Value of Assets	619,519	619,519	619,519
Unfunded Actuarial Accrued Liability	(251,442)	(256,007)	(260,300)
Funded Ratio	168.3%	170.4%	172.5%
Actuarially Determined Contribution Rate	0.00%	0.00%	0.00%
Combined			
Actuarial Accrued Liability	$ 1,765,918	$ 1,726,548	$ 1,689,176
Actuarial Value of Assets	1,510,979	1,510,979	1,510,979
Unfunded Actuarial Accrued Liability	254,939	215,569	178,197
Funded Ratio	85.6%	87.5%	89.5%
Actuarially Determined Contribution Rate	25.76%	23.74%	21.84%

Sensitivity Analysis - Payroll Growth
Hazardous Members
(Dollar amounts expressed in thousands)

	Decrease Payroll Growth	Valuation Results	Increase Payroll Growth
(1)	(2)	(3)	(4)
Payroll Growth Rate	-1.00%	0.00%	1.00%
Inflation Rate	2.50%	2.50%	2.50%
Discount Rate - Retirement	6.25%	6.25%	6.25%
Discount Rate - Insurance	6.50%	6.50%	6.50%
Retirement			
Actuarial Accrued Liability	$ 1,363,036	$ 1,363,036	$ 1,363,036
Actuarial Value of Assets	891,460	891,460	891,460
Unfunded Actuarial Accrued Liability	471,576	471,576	471,576
Funded Ratio	65.4%	65.4%	65.4%
Actuarially Determined Contribution Rate	25.45%	23.74%	22.13%
Insurance			
Actuarial Accrued Liability	$ 363,512	$ 363,512	$ 363,512
Actuarial Value of Assets	619,519	619,519	619,519
Unfunded Actuarial Accrued Liability	(256,007)	(256,007)	(256,007)
Funded Ratio	170.4%	170.4%	170.4%
Actuarially Determined Contribution Rate	0.00%	0.00%	0.00%
Combined			
Actuarial Accrued Liability	$ 1,726,548	$ 1,726,548	$ 1,726,548
Actuarial Value of Assets	1,510,979	1,510,979	1,510,979
Unfunded Actuarial Accrued Liability	215,569	215,569	215,569
Funded Ratio	87.5%	87.5%	87.5%
Actuarially Determined Contribution Rate	25.45%	23.74%	22.13%

Kentucky Public Pensions Authority
KERS Non-Hazardous Retirement Fund
($ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio	Employer Contribution (excluding Appropriations)	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll (Normal Cost)	Employer Contribution (Amortization Cost)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2023	$ 16,304	$ 3,552	$ 12,752	22%	$ 1,032	$ 81	$ 1,616	7.82%	$ 906
2024	16,279	4,042	12,237	25%	968	81	1,616	6.99%	855
2025	16,225	4,245	11,980	26%	968	81	1,616	6.99%	855
2026	16,147	4,357	11,790	27%	959	81	1,616	6.64%	852
2027	16,047	4,522	11,525	28%	959	81	1,616	6.64%	852
2028	15,925	4,669	11,256	29%	959	81	1,616	6.33%	856
2029	15,782	4,814	10,968	31%	959	81	1,616	6.33%	856
2030	15,621	4,955	10,666	32%	954	81	1,616	6.05%	856
2031	15,443	5,096	10,347	33%	954	81	1,616	6.05%	856
2032	15,251	5,239	10,012	34%	950	81	1,616	5.80%	856
2033	15,047	5,389	9,658	36%	950	81	1,616	5.80%	856
2034	14,839	5,552	9,287	37%	947	81	1,616	5.58%	856
2035	14,622	5,726	8,896	39%	947	81	1,616	5.58%	856
2036	14,398	5,913	8,485	41%	943	81	1,616	5.39%	856
2037	14,172	6,120	8,052	43%	943	81	1,616	5.39%	856
2038	13,948	6,352	7,596	46%	941	81	1,616	5.26%	856
2039	13,727	6,611	7,116	48%	941	81	1,616	5.26%	856
2040	13,513	6,902	6,611	51%	943	81	1,616	5.17%	859
2041	13,306	7,229	6,077	54%	972	81	1,616	5.17%	889
2042	13,107	7,623	5,484	58%	976	81	1,616	5.10%	894
2043	12,917	8,061	4,856	62%	1,023	81	1,616	5.10%	940
2044	12,735	8,590	4,145	68%	1,023	81	1,616	5.05%	941
2045	12,563	9,165	3,398	73%	1,024	81	1,616	5.05%	943
2046	12,400	9,792	2,608	79%	1,019	81	1,616	5.00%	938
2047	12,248	10,464	1,784	85%	1,019	81	1,616	5.00%	938
2048	12,105	11,190	915	92%	1,019	81	1,616	4.96%	938
2049	11,973	11,973	-	100%	80	81	1,616	4.95%	-
2050	11,853	11,853	-	100%	80	81	1,616	4.94%	-
2051	11,746	11,746	-	100%	80	81	1,616	4.93%	-
2052	11,652	11,652	-	100%	80	81	1,616	4.92%	-

Notes and assumptions:

The projection is based on the results of the June 30, 2023 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 5.25%.

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

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

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

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

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

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

Per HB 1 and HB 604 (passed in the 2022 legislative session), $240 million in additional appropriations is assumed to be received in FYE 2024

Kentucky Public Pensions Authority
KERS Hazardous Retirement Fund
($ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll	Employer Actuarially Determined Contribution
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2023	$ 1,363	$ 891	$ 472	65%	$ 67	$ 17	$ 212	31.82%	30.12%
2024	1,397	952	445	68%	50	17	212	23.74%	23.74%
2025	1,429	1,001	428	70%	50	17	212	23.74%	23.41%
2026	1,459	1,024	435	70%	48	17	212	22.77%	22.77%
2027	1,488	1,064	424	72%	48	17	212	22.77%	23.37%
2028	1,515	1,099	416	73%	49	17	212	23.04%	23.04%
2029	1,542	1,135	407	74%	49	17	212	23.04%	22.92%
2030	1,569	1,172	397	75%	48	17	212	22.84%	22.84%
2031	1,597	1,210	387	76%	48	17	212	22.84%	22.79%
2032	1,626	1,249	377	77%	48	17	212	22.74%	22.74%
2033	1,657	1,291	366	78%	48	17	212	22.74%	22.71%
2034	1,691	1,338	353	79%	48	17	212	22.67%	22.67%
2035	1,727	1,386	341	80%	48	17	212	22.67%	22.65%
2036	1,765	1,437	328	81%	48	17	212	22.63%	22.63%
2037	1,804	1,490	314	83%	48	17	212	22.63%	22.60%
2038	1,844	1,545	299	84%	48	17	212	22.57%	22.57%
2039	1,884	1,602	282	85%	48	17	212	22.57%	22.53%
2040	1,926	1,661	265	86%	46	17	212	21.70%	21.70%
2041	1,969	1,720	249	87%	46	17	212	21.70%	23.80%
2042	2,014	1,782	232	89%	53	17	212	24.86%	24.86%
2043	2,061	1,854	207	90%	53	17	212	24.86%	25.67%
2044	2,109	1,930	179	92%	55	17	212	25.88%	25.88%
2045	2,159	2,010	149	93%	55	17	212	25.88%	26.36%
2046	2,210	2,094	116	95%	54	17	212	25.68%	25.68%
2047	2,262	2,180	82	96%	54	17	212	25.68%	25.87%
2048	2,315	2,269	46	98%	55	17	212	25.90%	25.90%
2049	2,368	2,368	-	100%	15	17	212	6.86%	6.86%
2050	2,421	2,421	-	100%	15	17	212	6.87%	6.87%
2051	2,474	2,474	-	100%	15	17	212	6.88%	6.88%
2052	2,526	2,526	-	100%	15	17	212	6.87%	6.87%

Notes and assumptions:

The projection is based on the results of the June 30, 2023 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.25%.

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

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

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

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

Kentucky Public Pensions Authority
KERS Non-Hazardous Insurance Fund
($ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll (Normal Cost)	Employer Contribution (Amortization Cost)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2023	$ 1,877	$ 1,533	$ 344	82%	$ 123	$ 9	$ 1,605	2.15%	$ 88
2024	1,922	1,650	272	86%	25	9	1,605	1.45%	2
2025	1,959	1,685	274	86%	25	10	1,605	1.45%	2
2026	1,989	1,671	318	84%	20	11	1,605	1.23%	-
2027	2,011	1,683	328	84%	20	11	1,605	1.23%	-
2028	2,025	1,676	349	83%	18	12	1,605	1.01%	2
2029	2,030	1,660	370	82%	18	12	1,605	1.01%	2
2030	2,027	1,636	391	81%	15	13	1,605	0.80%	2
2031	2,017	1,603	414	80%	15	13	1,605	0.80%	2
2032	2,003	1,564	439	78%	12	14	1,605	0.63%	2
2033	1,984	1,519	465	77%	12	14	1,605	0.63%	2
2034	1,962	1,469	493	75%	10	14	1,605	0.49%	2
2035	1,938	1,416	522	73%	10	15	1,605	0.49%	2
2036	1,915	1,361	554	71%	9	15	1,605	0.39%	2
2037	1,894	1,306	588	69%	9	15	1,605	0.39%	2
2038	1,875	1,252	623	67%	7	15	1,605	0.32%	2
2039	1,860	1,198	662	64%	7	16	1,605	0.32%	2
2040	1,848	1,146	702	62%	29	16	1,605	0.27%	25
2041	1,841	1,119	722	61%	45	16	1,605	0.27%	40
2042	1,838	1,111	727	60%	129	16	1,605	0.24%	125
2043	1,840	1,195	645	65%	133	16	1,605	0.24%	129
2044	1,847	1,293	554	70%	133	16	1,605	0.21%	129
2045	1,857	1,400	457	75%	134	16	1,605	0.21%	131
2046	1,870	1,518	352	81%	131	16	1,605	0.20%	128
2047	1,883	1,641	242	87%	132	16	1,605	0.20%	129
2048	1,897	1,772	125	93%	132	16	1,605	0.17%	129
2049	1,910	1,910	-	100%	3	16	1,605	0.16%	-
2050	1,922	1,922	-	100%	2	16	1,605	0.15%	-
2051	1,933	1,933	-	100%	2	16	1,605	0.14%	-
2052	1,944	1,944	-	100%	2	16	1,605	0.14%	-

Notes and assumptions:

The projection is based on the results of the June 30, 2023 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.50%.

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

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

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

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

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

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

Kentucky Public Pensions Authority
KERS Hazardous Insurance Fund
($ in Millions)

Fiscal Year Beginning July 1,	Actuarial Accrued Liability	Actuarial Value of Assets	Unfunded Actuarial Accrued Liability	Funded Ratio	Employer Contribution	Member Contribution	Covered Payroll	Employer Contribution as % of Covered Payroll	Employer Actuarially Determined Contribution
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2023	$ 364	$ 620	$ (256)	170%	$ -	$ 2	$ 210	0.00%	0.00%
2024	370	641	(271)	173%	-	2	210	0.00%	0.00%
2025	374	669	(295)	179%	-	2	210	0.00%	0.00%
2026	377	676	(299)	179%	-	2	210	0.00%	0.00%
2027	377	697	(320)	185%	-	2	210	0.00%	0.00%
2028	377	714	(337)	189%	-	2	210	0.00%	0.00%
2029	376	732	(356)	195%	-	2	210	0.00%	0.00%
2030	374	751	(377)	201%	-	2	210	0.00%	0.00%
2031	372	770	(398)	207%	-	2	210	0.00%	0.00%
2032	369	791	(422)	214%	-	2	210	0.00%	0.00%
2033	367	814	(447)	222%	-	2	210	0.00%	0.00%
2034	365	838	(473)	230%	-	2	210	0.00%	0.00%
2035	363	865	(502)	238%	-	2	210	0.00%	0.00%
2036	362	894	(532)	247%	-	2	210	0.00%	0.00%
2037	361	926	(565)	257%	-	2	210	0.00%	0.00%
2038	361	961	(600)	266%	-	2	210	0.00%	0.00%
2039	363	999	(636)	275%	-	2	210	0.00%	0.00%
2040	365	1,041	(676)	285%	-	2	210	0.00%	0.00%
2041	368	1,086	(718)	295%	-	2	210	0.00%	0.00%
2042	372	1,135	(763)	305%	-	2	210	0.00%	0.00%
2043	378	1,188	(810)	314%	-	2	210	0.00%	0.00%
2044	384	1,244	(860)	324%	-	2	210	0.00%	0.00%
2045	390	1,305	(915)	335%	-	2	210	0.00%	0.00%
2046	397	1,369	(972)	345%	-	2	210	0.00%	0.00%
2047	404	1,437	(1,033)	356%	-	2	210	0.00%	0.00%
2048	410	1,509	(1,099)	368%	-	2	210	0.00%	0.00%
2049	417	1,586	(1,169)	380%	-	2	210	0.00%	0.00%
2050	423	1,666	(1,243)	394%	-	2	210	0.00%	0.00%
2051	429	1,750	(1,321)	408%	-	2	210	0.00%	0.00%
2052	434	1,840	(1,406)	424%	-	2	210	0.00%	0.00%

Notes and assumptions:

The projection is based on the results of the June 30, 2023 actuarial valuation and assumes that all actuarial assumptions are realized, including the assumed annual asset return of 6.50%.

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.

P: 469.524.0000 | www.grsconsulting.com

December 5, 2023

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

Re: Contribution Necessary to Fully Prefund a 1.5% Increase in Retiree Benefits on the Systems Operated by the Kentucky Public Pensions Authority on July 1, 2024

Dear Mr. Eager:

The purpose of this letter is to communicate the financial cost if the General Assembly enacts an increase in monthly retirement allowances as permitted under KRS 61.691(2) and KRS 78.5518(2).

As of the June 30, 2023 actuarial valuation, there are no pension funds with a funding level greater than 100%, and therefore, no increase in monthly retirement allowance can be paid under KRS 61.691(2)(b)1 and KRS 78.5518(2)(b)1.

The contribution necessary to fully prefund a 1.5% increase in all monthly retirement allowances paid by the corresponding pension funds as of July 1, 2024 is provided below. The respective appropriations provided below are sufficient and appropriate to fund a 1.5% benefit increase and therefore, the benefit increase would not impact the on-going employer contribution requirement for the pension funds.

Pension Fund	Appropriation Necessary to Fully Prefund a 1.5% Increase in Retirement Allowances as of July 1, 2024
KERS Non-Hazardous	$170 million
KERS Hazardous	$13 million
SPRS	$13 million
CERS Non-Hazardous	$137 million
CERS Hazardous	$58 million

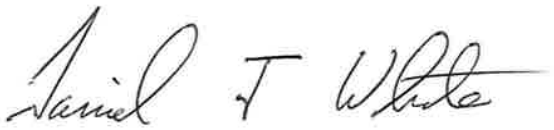
The table above reflects the cost of a one-time 1.5% increase in retiree benefits on July 1, 2024 or July 1, 2025. If a 1.5% increase is provided annually over the biennium (i.e. if two 1.5% increases are provided – one on July 1, 2024 and one on July 1, 2025), the cost would be two times what is shown in the table. For example, the cost to the KERS non-hazardous fund would be $340 million ($170 million for each increase).

Basis of Calculations

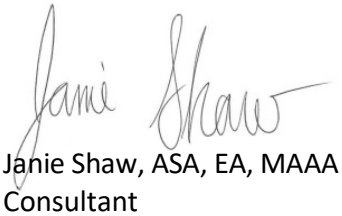
GRS based the calculations and analysis in this letter on the member and financial data provided by KPPA for use in performing the actuarial valuation as of June 30, 2023. Our calculations are based upon assumptions regarding future events, which may or may not materialize. Depending on actual plan experience, actual results could deviate significantly.

All three of the undersigned are 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 herein. In addition, all three are independent of KPPA and are experienced in performing valuations for large public retirement systems. This communication shall not be construed to provide tax advice, legal advice or investment advice.

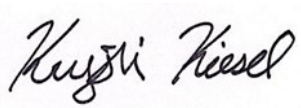
Sincerely,
Gabriel, Roeder, Smith & Company



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



Janie Shaw, ASA, EA, MAAA
Consultant



Krysti Kiesel, ASA, MAAA
Consultant and Actuary