Kentucky Employees Retirement System

GASB No. 67 Accounting Valuation Report As of June 30, 2022





December 1, 2022

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

Re: GASB 67 Reporting – Actuarial Information – Kentucky Employees Retirement System

Dear Members of the Board:

This report provided herein contains certain information for the **Kentucky Employees Retirement System (KERS)** in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67, "Financial Reporting for Pension Plans" for the fiscal year ending June 30, 2022. A separate report will be provided at a later date with additional accounting information determined in accordance with GASB Statement No. 68, "Accounting and Financial Reporting for Pensions".

The liability calculations presented in this report were performed for the purpose of satisfying the requirements of GASB No. 67 and are not applicable for other purposes, such as determining the plan's funding requirements. The plan's liability for other purposes may produce significantly different results. This report may be provided to parties other than the Board of Trustees of the Kentucky Retirement Systems only in its entirety and only with the permission of the Board.

The total pension liability, net pension liability, and sensitivity information shown in this report are based on an actuarial valuation date of June 30, 2021. The total pension liability was rolled-forward from the valuation date to the plan's fiscal year ending June 30, 2022 using generally accepted actuarial principles. GASB 67 requires the disclosure of a 10-year history of certain information in the Required Supplementary Information within the annual financial report. The exhibits provided in this report include the applicable information for historical years that were calculated in accordance with this accounting standard. Information disclosed for years prior to June 30, 2017 were prepared by the prior actuary.

Actuarial Assumptions and Plan Provisions

There have been no actuarial assumption or method changes since June 30, 2021. Additionally, there have been no plan provision changes that would materially impact the total pension liability since June 30, 2021.

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House Bill 1 passed during the 2022 legislative session and included a provision that provided an approximate 8% across-the-board salary increase effective July 1, 2022 for eligible State employees. While this salary increase may produce an actuarial loss with respect to the liability attributable to Tier 1 and Tier 2 active members (i.e. a higher total pension liability than expected based on current actuarial assumptions), there is not sufficient information available at this time to make a reasonable adjustment to the roll-forward Total Pension Liability to reflect these anticipated salary increases. It is our opinion that these procedures for determining the information contained in this report are reasonable, appropriate, and comply with applicable requirements under GASB No. 67.

Single Discount Rate

Single discount rates of 5.25% for the non-hazardous plan and 6.25% for the hazardous plan were used to measure the total pension liability for the fiscal year ending June 30, 2022. This single discount rate was based on the expected rate of return on pension plan investments for each plan. Based on the stated assumptions and the projection of cash flows as of each fiscal year ending, the pension plan's fiduciary net position and future contributions were projected to be sufficient to finance all the future benefit payments of the current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of the projected benefit payments to determine the total pension liability for each plan.

The projection of cash flows used to determine the single discount rate must include an assumption regarding actual employer contributions made each future year. Future contributions are projected assuming that the entire actuarially determined employer contribution is received by each plan each future year, calculated in accordance with the current funding policy.

401(h) Subaccount

Based on guidance issued by GASB in connection with GASB Statement No. 74, the 1% of pay member contributions for Tier 2 and Tier 3 members to a 401(h) subaccount is considered an OPEB asset. As a result, the reported fiduciary net positions as of June 30, 2017 and later are net of the 401(h) asset balance.

Additional Disclosures

This report is based upon information, furnished to us by the Kentucky Public Pensions Authority (KPPA), which includes benefit provisions, membership information, and financial data. We did not audit this data and information, but we did apply a number of tests and concluded that it was reasonable and consistent. GRS is not responsible for the accuracy or completeness of the information provided by KPPA. Please see the "Actuarial Valuation Report as of June 30, 2021" for additional discussion of the nature of the actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions. These reports should be considered together as a complete report for the fiscal year ending June 30, 2022.



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To the best of our knowledge, this report is complete and accurate and is in accordance with generally recognized actuarial practices and methods. Both of the undersigned are Enrolled Actuaries, members of the American Academy of Actuaries and meet all of the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. In addition, both 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 & Co.

Daniel J. White, FSA, EA, MAAA Senior Consultant and Actuary Janie Shaw, ASA, EA, MAAA Consultant and Actuary



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SECTION 1

EXHIBIT 1a

Schedule of the Employers' Net Pension Liability – KERS Non-Hazardous Plan (\$ in thousands)

Fiscal Year Ending June 30, (1)	Total Pension Liability (2)	Plan Fiduciary Net Position (3)	L	Employers' Net Pension Liability (Asset) (4) = (2) - (3)	Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (5) = (3) / (2)	Covered Employee Payroll ¹ (6)	Net Pension Liability as a Percentage of Covered Employee Payroll (7) = (4) / (6)
2022	\$ 16,281,188	\$ 3,013,845	\$	13,267,343	18.51%	\$ 1,432,960	925.87%
2021	16,335,657	3,018,660		13,316,997	18.48%	1,441,337	923.93%
2020	16,472,733	2,308,080		14,164,653	14.01%	1,476,156	959.56%
2019	16,356,674	2,233,672		14,123,002	13.66%	1,485,854	950.50%
2018	15,608,221	2,004,446		13,603,775	12.84%	1,509,955	900.94%
2017	15,445,206	2,056,870		13,388,336	13.32%	1,602,396	835.52%
2016	13,379,781	1,980,292		11,399,489	14.80%	1,631,025	698.92%
2015	12,359,673	2,327,783		10,031,890	18.83%	1,544,234	649.64%
2014	11,550,110	2,578,291		8,971,819	22.32%	1,577,496	568.74%

Note:



¹ Based on derived compensation using the provided employer contribution information for fiscal years 2017 and later.

EXHIBIT 1b

Schedule of the Employers' Net Pension Liability – KERS Hazardous Plan (\$ in thousands)

Fiscal Year Ending June 30, (1)	Total Pension Liability (2)	Plan Fiduciary Net Position (3)	L	Employers' Net Pension Liability (Asset) (4) = (2) - (3)	Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (5) = (3) / (2)	Covered Employee Payroll ¹ (6)	Net Pension Liability as a Percentage of Covered Employee Payroll (7) = (4) / (6)
2022	\$ 1,318,494	\$ 810,978	\$	507,516	61.51%	\$ 188,648	269.03%
2021	1,311,767	866,140		445,627	66.03%	172,725	258.00%
2020	1,251,027	690,350		560,677	55.18%	171,840	326.28%
2019	1,227,226	680,932		546,294	55.49%	160,600	340.16%
2018	1,150,610	645,485		505,125	56.10%	152,936	330.29%
2017	1,098,630	601,529		497,101	54.75%	178,511	278.47%
2016	919,517	527,879		391,638	57.41%	158,828	246.58%
2015	895,433	552,468		342,965	61.70%	128,680	266.53%
2014	816,850	561,484		255,366	68.74%	129,076	197.84%

Note:



¹ Based on derived compensation using the provided employer contribution information for fiscal years 2017 and later.

EXHIBIT 2a

Schedule of the Employers' Net Pension Liability – KERS Non-Hazardous Plan

(\$ in thousands)

Change in the Net Pension Liability		2022		2021		2020	_	2019	2018 2017		2016		2015		2014			
Total pension liability																		
Service Cost	\$	165,616	\$	171,472	\$	179,702	\$	184,988	\$	195,681	\$	143,858	\$	139,631	\$	143,847	\$	133,361
Interest		830,440		838,084		832,178		793,163		785,123		870,725		891,897		859,509		853,653
Benefit Changes		0		2,091		0		0		9,624		0		0		0		0
Difference between actual and expected experience		(15,034)		(130,268)		115,515		70,529		153,565		(134,379)		0		30,958		0
Assumption Changes		0		0		0		700,464		0		2,145,530		923,999		694,592		0
Benefit Payments		(1,035,491)		(1,018,455)		(1,011,336)		(1,000,691)		(980,978)		(960,309)		(935,419)		(919,343)		(903,564)
Net Change in Total Pension Liability	\$	(54,469)	\$	(137,076)	\$	116,059	\$	748,453	\$	163,015	\$	2,065,425	\$	1,020,108	\$	809,563	\$	83,450
Total Pension Liability - Beginning	\$	16,335,657	\$	16,472,733	\$	16,356,674	\$	15,608,221	\$	15,445,206	\$	13,379,781	\$	12,359,673	\$	11,550,110	\$	11,466,660
Total Pension Liability - Ending (a)	\$	16,281,188	\$	16,335,657	\$	16,472,733	\$	16,356,674	\$	15,608,221	\$	15,445,206	\$	13,379,781	\$	12,359,673	\$	11,550,110
Plan Fiduciary Net Position ¹																		
Contributions - Employer	\$	1,116,869 ⁶	\$	1,134,232 ⁶	\$	948,592	\$	1,035,462	\$	689,143	\$	757,121	\$	513,084	\$	521,691	\$	296,836
Contributions - Member ²		89,607		90,202		96,594		93,759		104,972		100,543		106,495		104,606		97,487
Refunds of contributions to members		(12,116)		(8,953)		(11,523)		(12,342)		(13,603)		(11,819)		(12,130)		(13,552)		(13,627)
Retirement benefits		(1,023,375)		(1,009,502)		(999,813)		(988,349)		(967,375)		(948,490)		(923,288)		(905,791)		(889,937)
Net Investment Income ²		(162,461)		516,223		52,499		112,371		144,881		220,985		(20,663)		44,570		337,923
Administrative Expense		(13,339)		(11,622)		(11,941)		(11,712)		(10,692)		(10,957)		(10,989)		(10,474)		(11,145)
Other		0		0		0		37 ⁵		301 5		(30,805) 4		0		8,442		0
Net Change in Plan Fiduciary Net Position	\$	(4,815)	\$	710,580	\$	74,408	\$	229,226	\$	(52,373)	\$	76,578	\$	(347,491)	\$	(250,508)	\$	(182,463)
Plan Fiduciary Net Position - Beginning	\$	3,018,660	\$	2,308,080	\$	2,233,672	\$	2,004,446	\$	2,056,870	\$	1,980,292	\$	2,327,783	\$	2,578,291	\$	2,760,754
Prior Year Adjustment	·	0	·	0		0		0		(51)	·	0		0	·	0		0
Plan Fiduciary Net Position - Ending (b)	\$	3,013,845	\$	3,018,660	\$	2,308,080	\$	2,233,672	\$	2,004,446	\$	2,056,870	\$	1,980,292	\$	2,327,783	\$	2,578,291
Net Pension Liability - Ending (a) - (b) Plan Fiduciary Net Position as a Percentage	\$	13,267,343	\$	13,316,997	\$	14,164,653	\$	14,123,002	\$	13,603,775	\$	13,388,336	\$	11,399,489	\$	10,031,890	\$	8,971,819
of the Total Pension Liability		18.51%		18.48%		14.01%		13.66%		12.84%		13.32%		14.80%		18.83%		22.32%
Covered Employee Payroll ³	Ś	1,432,960	Ś	1,441,337	\$	1,476,156	Ś		Ś	1,509,955	\$	1,602,396	\$	1,631,025	\$	1,544,234	Ś	1,577,496
Net Pension Liability as a Percentage of	ب		ų	, ,	٧		Ą	, ,	Ų		Ţ		Ţ		Ą		Y	, ,
Covered Employee Payroll		925.87%		923.93%		959.56%		950.50%		900.94%		835.52%		698.92%		649.64%		568.74%

⁶ Includes \$63.1 million and \$175.6 million employer cessation contributions in fiscal year 2022 and 2021, respectively



¹ Does not include 401(h) assets for fiscal years 2017 and later. Assets totaled \$62,898,000 as of June 30, 2022

² Does not include 401(h) contributions or associated investment income for fiscal years 2017 and later For fiscal year 2022, 401(h) contributions equaled -\$13,000; and associated investment return equaled -\$3,444,000

³ Based on derived compensation using the provided employer contribution information for fiscal years 2017 and later

⁴ Adjustment due to 401(h) plan asset balance being considered an OPEB asset under GASB 74 for fiscal years 2017 and later

⁵ Northern Trust Settlement

EXHIBIT 2b

Schedule of the Employers' Net Pension Liability – KERS Hazardous Plan

(\$ in thousands)

Change in the Net Pension Liability	 2022	 2021	_	2020	_	2019	_	2018	_	2017	 2016	 2015	2014
Total pension liability													
Service Cost	\$ 26,885	\$ 28,450	\$	25,568	\$	27,117	\$	28,641	\$	21,081	\$ 20,751	\$ 18,729	\$ 16,880
Interest	79,422	75,743		74,357		69,657		66,536		66,589	64,851	61,005	59,594
Benefit Changes	0	26		0		0		705		0	0	0	0
Difference between actual and expected experience	(17,557)	34,789		(1,095)		1,395		24,215		26,902	0	6,067	0
Assumption Changes	0	0		0		50,658		0		127,878	0	52,165	0
Benefit Payments	 (82,023)	(78,268)		(75,029)		(72,211)		(68,117)		(63,338)	(61,518)	(59,383)	 (57,151)
Net Change in Total Pension Liability	\$ 6,727	\$ 60,740	\$	23,801	\$	76,616	\$	51,980	\$	179,112	\$ 24,084	\$ 78,583	\$ 19,323
Total Pension Liability - Beginning	\$ 1,311,767	\$ 1,251,027	\$	1,227,226	\$	1,150,610	\$	1,098,630	\$	919,517	\$ 895,433	\$ 816,850	\$ 797,527
Total Pension Liability - Ending (a)	\$ 1,318,494	\$ 1,311,767	\$	1,251,027	\$	1,227,226	\$	1,150,610	\$	1,098,630	\$ 919,517	\$ 895,433	\$ 816,850
Plan Fiduciary Net Position ¹													
Contributions - Employer	\$ 59,055	\$ 62,200	\$	59,115	\$	55,259	\$	43,661	\$	52,974	\$ 23,759	\$ 28,536	\$ 11,670
Contributions - Member ²	20,588	19,961		19,769		17,118		17,891		17,524	15,739	13,207	12,546
Refunds of contributions to members	(4,976)	(4,380)		(3,168)		(2,684)		(2,501)		(2,106)	(2,211)	(2,610)	(2,830)
Retirement benefits	(77,047)	(73,888)		(71,861)		(69,527)		(65,616)		(61,231)	(59,306)	(56,773)	(54,320)
Net Investment Income ²	(51,317)	173,152		6,739		36,380		51,467		70,994	(1,653)	8,701	80,724
Administrative Expense	(1,465)	(1,255)		(1,176)		(1,103)		(975)		(919)	(916)	(844)	(897)
Other	0	0		0		4 5		33 ⁵		(3,586) 4	0	767	0
Net Change in Plan Fiduciary Net Position	\$ (55,162)	\$ 175,790	\$	9,418	\$	35,447	\$	43,960	\$	73,650	\$ (24,588)	\$ (9,016)	\$ 46,893
Plan Fiduciary Net Position - Beginning	\$ 866,140	\$ 690,350	\$	680,932	\$	645,485	\$	601,529	\$	527,879	\$ 552,468	\$ 561,484	\$ 514,591
Prior Year Adjustment	0	0		0		0		(4)		0	0	0	0
Plan Fiduciary Net Position - Ending (b)	\$ 810,978	\$ 866,140	\$	690,350	\$	680,932	\$	645,485	\$	601,529	\$ 527,879	\$ 552,468	\$ 561,484
Net Pension Liability - Ending (a) - (b)	\$ 507,516	\$ 445,627	\$	560,677	\$	546,294	\$	505,125	\$	497,101	\$ 391,638	\$ 342,965	\$ 255,366
Plan Fiduciary Net Position as a Percentage													
of the Total Pension Liability	61.51%	66.03%		55.18%		55.49%		56.10%		54.75%	57.41%	61.70%	68.74%
Covered Employee Payroll ³	\$ 188,648	\$ 172,725	\$	171,840	\$	160,600	\$	152,936	\$	178,511	\$ 158,828	\$ 128,680	\$ 129,076
Net Pension Liability as a Percentage of													
Covered Employee Payroll	269.03%	258.00%		326.28%		340.16%		330.29%		278.47%	246.58%	266.53%	197.84%

⁵ Northern Trust Settlement



 $^{^{1}}$ Does not include 401(h) assets for fiscal years 2017 and later. Assets totaled \$8,260,000 as of June 30, 2022

 $^{^{2}\,}$ Does not include 401(h) contributions or associated investment income for fiscal years 2017 and later For fiscal year 2022, 401(h) contributions equaled -\$5,000; and associated investment return equaled -\$523,000

³ Based on derived compensation using the provided employer contribution information for fiscal years 2017 and later

⁴ Adjustment due to 401(h) plan asset balance being considered an OPEB asset under GASB 74 for fiscal years 2017 and later

EXHIBIT 3a

Schedule of Employers' Contributions – KERS Non-Hazardous Plan

(\$ in thousands)

Fiscal Year Ending	D	Actuarially etermined ontribution ¹	Total Employer entributions	 ontribution Deficiency (Excess)	Covered Employee Payroll ²	Actual Contributions as a Percentage of Covered Payroll
2022	\$	1,048,861	\$ 1,116,869	\$ (68,008)	\$ 1,432,960	77.94%
2021		1,056,211	1,134,232	(78,021)	1,441,337	78.69%
2020		1,048,513	948,592	99,921	1,476,156	64.26%
2019		1,055,402	1,035,462	19,940	1,485,854	69.69%
2018		633,879	689,143	(55,264)	1,509,955	45.64%
2017		623,813	757,121	(133,308)	1,602,396	47.25%
2016		512,670	513,084	(414)	1,631,025	31.46%
2015		520,948	521,691	(743)	1,544,234	33.78%
2014		520,765	296,836	223,929	1,577,496	18.82%
2013		485,396	280,874	204,522	1,644,409	17.08%

Notes:



 $^{^{\,1}}$ Actuarially determined contribution for fiscal year ending 2022 is based on the contribution rate calculated with the June 30, 2020 actuarial valuation, as amended by HB8 (2021 legislative session) which adjusted how the employer contribution would be allocated amongst participating employers.

 $^{^{2}}$ Based on derived compensation using the provided employer contribution information for fiscal years 2017 and later.

EXHIBIT 3b

Schedule of Employers' Contributions – KERS Hazardous Plan (\$ in thousands)

Actuarially Determined Contribution ¹	Total Employer Contributions	Contribution Deficiency (Excess)	Covered Employee Payroll ²	Actual Contributions as a Percentage of Covered Payroll
\$ 59,052	\$ 59,055	\$ (3)	\$ 188,648	31.30%
62,181	62,200	(19)	172,725	36.01%
59,096	59,115	(19)	171,840	34.40%
55,230	55,259	(29)	160,600	34.41%
31,321	43,661	(12,340)	152,936	28.55%
37,630	52,974	(15,344)	178,511	29.68%
23,690	23,759	(69)	158,828	14.96%
28,374	28,536	(162)	128,680	22.18%
13,570	11,670	1,900	129,076	9.04%
21,502	27,334	(5,832)	131,015	20.86%
	\$ 59,052 62,181 59,096 55,230 31,321 37,630 23,690 28,374 13,570	Determined Contribution¹ Employer Employer Contributions \$ 59,052 \$ 59,055 62,181 62,200 59,096 59,115 55,230 55,259 31,321 43,661 37,630 52,974 23,690 23,759 28,374 28,536 13,570 11,670	Determined Contribution¹ Employer Contributions Deficiency (Excess) \$ 59,052 \$ 59,055 \$ (3) 62,181 62,200 (19) 59,096 59,115 (19) 55,230 55,259 (29) 31,321 43,661 (12,340) 37,630 52,974 (15,344) 23,690 23,759 (69) 28,374 28,536 (162) 13,570 11,670 1,900	Determined Contribution¹ Employer Contributions Deficiency (Excess) Employee Payroll² \$ 59,052 \$ 59,055 \$ (3) \$ 188,648 62,181 62,200 (19) 172,725 59,096 59,115 (19) 171,840 55,230 55,259 (29) 160,600 31,321 43,661 (12,340) 152,936 37,630 52,974 (15,344) 178,511 23,690 23,759 (69) 158,828 28,374 28,536 (162) 128,680 13,570 11,670 1,900 129,076

Notes:



¹ Actuarially determined contribution for fiscal year ending 2022 is based on the contribution rate calculated with the June 30, 2020 actuarial valuation.

² Based on derived compensation using the provided employer contribution information for fiscal years 2017 and later.

Notes to Schedule of Employers' Contributions for FYE 2022

The actuarially determined contributions effective for fiscal year ending 2022 that are documented in the schedules on the previous pages were calculated as of June 30, 2020. Based on the June 30, 2020 actuarial valuation report, the actuarial methods and assumptions used to calculate these contribution rates are below:

Item	KERS Non-Hazardous Plan	KERS Hazardous Plan
Determined by the		
Actuarial Valuation as of:	June 30, 2020	June 30, 2020
Actuarial Cost Method:	Entry Age Normal	Entry Age Normal
Asset Valuation Method:	20% of the difference between the market value of assets and the expected actuarial value of assets is recognized	20% of the difference between the market value of assets and the expected actuarial value of assets is recognized
Amortization Method:	Level Percent of Pay	Level Percent of Pay
Amortization Period:	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
Payroll Growth Rate	0.00%	0.00%
Investment Return:	5.25%	6.25%
Inflation:	2.30%	2.30%
Salary Increases:	3.30% to 15.30%, varies by service	3.55% to 20.05%, varies by service
Mortality:	System-specific mortality table based on mortality experience from 2013-2018, projected with the ultimate rates from MP-2014 mortality improvement scale using a base year of 2019	System-specific mortality table based on mortality experience from 2013-2018, projected with the ultimate rates from MP-2014 mortality improvement scale using a base year of 2019



EXHIBIT 4

Sensitivity of the Net Pension Liability to Changes in the Discount Rate (\$ in thousands)

Table 1. Sensitivity of the Net Pension Liability to Changes in the Discount Rate for KERS (Non-Hazardous)

	1.00%		Current		1.00%				
	Decrease		Discount Rate		Increase				
	(4.25%)		(5.25%)		(6.25%)				
	45 250 602	<u>,</u>	42 267 242		44 626 000				
S	15.259.602	S	13.267.343	S	11.626.900				

Table 2. Sensitivity of the Net Pension Liability to Changes in the Discount Rate for KERS (Hazardous)

	1.00%		Current		1.00%				
	Decrease	0	Discount Rate		Increase				
	(5.25%)		(6.25%)		(7.25%)				
Ś	670.608	Ś	507.516	Ś	375.348				

