

State Police Retirement System

GASB Statements No. 68 Accounting and Financial
Reporting for Pensions as of June 30, 2023





March 21, 2024

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

Subject: GASB 68 Reporting Information for Measurement Period Ending June 30, 2023 – SPRS

Dear Members of the Board:

This report provided herein contains information for the **State Police Retirement System (SPRS)** in connection with the Governmental Accounting Standards Board (GASB) Statement No. 68, "Accounting and Financial Reporting for Pensions." This information can be used by the Commonwealth of Kentucky for fiscal years ending between (and including) June 30, 2023 and June 30, 2024, for the financial reporting and disclosure requirements of GASB Statement No. 68. The information provided herein was prepared for the purpose of assisting the Kentucky Public Pensions Authority (KPPA) and the Commonwealth of Kentucky in compliance with the financial reporting and disclosure requirements of GASB Statement No. 68.

The liability calculations presented in this report were performed for the purpose of satisfying the requirements of GASB Statement No. 68 and are not applicable for other purposes, such as determining the plan's funding requirements. The calculation of 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. GRS is not responsible for unauthorized use of this report.

The total pension liability, net pension liability, and sensitivity information shown in this report are based on an actuarial valuation date of June 30, 2022. The total pension liability was rolled-forward from the valuation date to the plan's fiscal year ending June 30, 2023 using generally accepted actuarial principles. 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

The Board of Trustees adopted new actuarial assumptions on June 5, 2023. These assumptions are documented in the report titled "2022 Actuarial Experience Study for the Period Ending June 30, 2022". The Total Pension Liability as of June 30, 2023 is determined using these updated assumptions.

Plan Provisions

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. Additional information related to this plan provision change is provided in the Discussion Section of this report.

There have been no other plan provision changes that would materially impact the total pension liability since June 30, 2022. It is our opinion that these procedures for determining the information contained in these reports are reasonable, appropriate, and comply with applicable requirements under GASB No. 68.

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 are 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

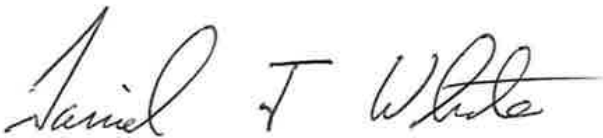
This report is based upon information furnished by KPPA, which includes benefit provisions, membership information, and financial data. We did not audit this data and information, but we did apply a number of tests and concluded that it was reasonable and consistent. GRS is not responsible for the accuracy or completeness of the information provided by KPPA. This report complements the GASB 67 accounting valuation report as of June 30, 2023, which was provided for plan accounting purposes, as well as the "Actuarial Valuation Report as of June 30, 2022", which was provided for plan funding purposes, and the "2022 Actuarial Experience Study for the Period Ending June 30, 2022", which documents the assumptions used in this report. Together, these reports should be considered as a complete report for the measurement period that ended June 30, 2023. Please see the GASB 67 accounting valuation report as of June 30, 2023 for additional discussion of accounting information and the actuarial valuation report for information regarding the nature of actuarial calculations, participant data, economic and demographic assumptions, and benefit provisions.

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; and changes in plan provisions or applicable law.



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 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.

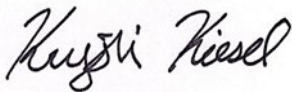
Respectfully submitted,
Gabriel, Roeder, Smith & Company



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SECTION 1

EXECUTIVE SUMMARY

Executive Summary

Summary of Principal Results

Actuarial Valuation Date	June 30, 2022
Measurement Date	June 30, 2023
Membership Information	
Number of	
- Inactive employees or beneficiaries currently receiving benefits	1,702
- Inactive employees entitled to but not yet receiving benefits	667
- Active employees	844
- Total	<u>3,213</u>
Covered Payroll ¹	\$ 65,693,043
Net Pension Liability	
Total Pension Liability	\$ 1,039,813,260
Plan Fiduciary Net Position	<u>591,514,353</u>
Net Pension Liability	\$ 448,298,907
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	56.89%
Net Pension Liability as a Percentage of Covered Payroll	682.42%
Pension Expense and Deferred Outflows/(Inflows) of Resources	
GASB 68 Pension Expense	\$ 28,062,592
Deferred Outflows of Resources	36,962,736
Deferred Inflow of Resources	50,738,603
Development of the Single Discount Rate	
Single Discount Rate	5.25%
Long-Term Expected Rate of Return	5.25%
Long-Term Municipal Bond Rate	N/A

Notes:

¹ Based on derived compensation using the provided employer contribution information for fiscal year 2023.



Summary of Change in Net Pension Liability
(\$ in thousands)

	Total Pension Liability (1)	Plan Fiduciary Net Position¹ (2)	Net Pension Liability (1) - (2) (3)
Balance at June 30, 2022	\$ 1,057,752	\$ 551,699	\$ 506,053
Adjustment to prior year		-	-
1. Service cost	13,229		13,229
2. Interest	53,853		53,853
3. Benefit changes	-		-
4. Assumption changes	(31,255)		(31,255)
5. Difference between expected and actual experience	10,204		10,204
6. Employer contributions		58,120	(58,120)
7. Member contributions ²		5,250	(5,250)
8. Net investment income ²		40,708	(40,708)
9. Benefit payments	(63,804)	(63,804)	-
10. Refund of member contributions	(166)	(166)	-
11. Administrative expense	-	(293)	293
12. Other changes	-	-	-
13. Net changes	\$ (17,939)	\$ 39,815	\$ (57,754)
Balance at June 30, 2023	\$ 1,039,813	\$ 591,514	\$ 448,299

Notes:

¹ Does not include 401(h) assets

² Does not include 401(h) contributions or associated investment income



Report Purpose and Scope

Under GASB No. 68, employers must report the net pension liability, pension expense, and related deferred inflows and outflows of resources associated with providing retirement benefits to their employees (and former employees) in their basic financial statements. In addition, extensive note disclosures and related Required Supplementary Information are also required. The purpose of this report is to provide the employer with the actuarially calculated pension amounts.

Actuarial information required to be reported or disclosed by GASB No. 68 are contained in this report. However, the following information is not included in this report because it is not actuarial in nature:

- Pension Plan Description - A description of the plan is provided by KPPA, and also in the KPPA Annual Report, both found on their website. The Commonwealth can use the description information and provide their respective plan provisions in their disclosure.

Financial Reporting Overview

GASB 68 requires employers to recognize the net pension liability and the pension expense on their financial statements. The net pension liability is the total pension liability, less the amount of the plan's fiduciary net position. In actuarial terms, this is analogous to the accrued liability as measured using the individual entry age normal actuarial cost method less the market value of assets (not the smoothed actuarial value of assets used in the actuarial funding calculations based on the Board's adopted assumptions and methods).

In addition, employers are responsible for allocating the pension amounts between the governmental activities and business-type activities columns of the government-wide financial statements and between individual proprietary funds.

Timing of the Valuation

For the employer's financial reporting purposes, the net pension liability and pension expense should be measured as of the employer's "measurement date" which may not be earlier than the employer's prior fiscal year-end date. The total pension liability, net pension liability, and sensitivity information shown in this report are based on an actuarial valuation date of June 30, 2022. The total pension liability was rolled forward from the valuation date to the plan's fiscal year ending June 30, 2023 using generally accepted actuarial principles. 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.

The Board of Trustees adopted new actuarial assumptions on June 5, 2023. These assumptions are documented in the report titled "2022 Actuarial Experience Study for the Period Ending June 30, 2022". The Total Pension Liability as of June 30, 2023 is determined using these updated assumptions.

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 total pension 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 under all circumstances. This is a minimal change for hazardous members, as the minimum separation period was already one month for members who became reemployed on a full-time basis in a hazardous position. The requirement was previously three months only for members who became 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 and therefore have reflected no fiscal impact to the total pension liability.

There have been no other plan provision changes that would materially impact the total pension liability since June 30, 2022. It is our opinion that these procedures for determining the information contained in these reports are reasonable, appropriate, and comply with applicable requirements under GASB No. 68.

Employer Contributions after the Measurement Date and before the Employer's Fiscal Year End

Paragraph 57 of GASB No. 68 indicates that employer contributions made subsequent to the measurement date of the Net Pension Liability and prior to the end of the employer's reporting period should be reported by the employer as a deferred outflow of resources related to pensions. The information contained in this report does not incorporate any contributions made to the pension plan subsequent to June 30, 2023.

Single Discount Rate

Projected benefit payments are required to be discounted to their actuarial present values using a single discount rate that reflects (1) a long-term expected rate of return on pension plan investments (to the extent that the plan's fiduciary net position is projected to be sufficient to pay benefits) and (2) tax-exempt municipal bond rate based on an index of 20-year general obligation bonds with an average AA credit rating as of the measurement date (to the extent that the plan's projected fiduciary net position is not sufficient to pay benefits).

A single discount rate of 5.25% was used to measure the total pension liability for the fiscal year ending June 30, 2023. This single discount rate was based on the expected rate of return on pension plan investments. 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.

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 each participating employer in the plan contributes the actuarially determined employer contribution each future year calculated in accordance with the current funding policy.



Summary of Population Statistics

The total pension liability described in this report is based on the plan membership as of June 30, 2022:

Inactive plan members currently receiving benefits:	1,702
Inactive plan members entitled to but not yet receiving benefits:	667
Active plan members:	844
Total plan members:	3,213

Recognition of Deferred Outflows and Inflows of Resources

According to paragraph 33 of GASB Statement No. 68, *differences between expected and actual experience and changes in assumptions* are recognized in pension expense using a systematic and rational method over a closed period equal to the average of the expected remaining service lives of all employees that are provided with pensions through the pension plan (active employees and inactive members) determined as of the beginning of the measurement period.

At the beginning of the 2023 measurement period, the expected remaining service lives of all employees was 10,775 years and the average of the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the 2023 measurement period was 3.35 years (10,775 total expected remaining service period divided by 3,213 plan members).

Differences between projected and actual earnings on pension plan investments should be recognized in pension expense using a systematic and rational method over a closed five-year period. For this purpose, the deferred outflows and inflows of resources are recognized in the pension expense as a level dollar amount over the closed period identified above.

Sensitivity of the Net Pension Liability to Changes in the Discount Rate

As of June 30, 2023, the Net Pension Liability is \$448,298,907. Below is a table providing the sensitivity of the Net Pension Liability to changes in the discount rate. In particular, the table shows the plan's Net Pension Liability if it were calculated using a single discount rate that is one-percentage point lower or one-percentage point higher than the single discount rate:

1% Decrease 4.25%	Current Single Rate Assumption 5.25%	1% Increase 6.25%
\$577,298,167	\$448,298,907	\$342,465,182



SECTION 2

ACCOUNTING EXHIBITS

Exhibit 1

Schedule of Pension Expense as of June 30, 2023

1. Service cost	\$	13,229,130
2. Interest on the Total Pension Liability		53,852,793
3. Current period benefit changes		-
4. Member contributions		(5,249,920)
5. Projected earnings on plan investments		(28,940,754)
6. Administrative expense		293,255
7. Other changes in fiduciary net position		-
8. Recognition of outflows (inflow) of resources - liability experience		4,906,575
9. Recognition of outflows (inflow) of resources - assumption changes		(9,329,998)
10. Recognition of outflows (inflow) of resources - investment experience		(698,489)
11. Pension Expense	\$	<u>28,062,592</u>

Exhibit 2

Outstanding Balance of Deferred Outflows and Inflows of Resources to be Recognized in Future Years

	<u>Deferred Outflow of Resources</u>	<u>Deferred Inflow of Resources</u>
	(1)	(2)
1. Differences between expected and actual liability experience	\$ 7,316,921	\$ 887,452
2. Changes in assumptions	-	21,925,494
3. Differenced between projected and actual earnings on plan investments	29,645,815	27,925,657
4. Employer contributions subsequent to the measurement date ¹	<u>Unknown</u>	<u> </u>
5. Total	\$ 36,962,736	\$ 50,738,603

Notes:

¹ Employer contributions to the Plan made after the measurement date and up to the fiscal year end should be reported as a deferred outflow of resources.

Exhibit 3

Summary of Deferred Outflows and Inflows of Resources Arising from Current and Prior Reporting Periods

Differences Between Expected and Actual Liability Experience

Year	Original Outflow/(Inflow)	Deferred Outflow/(Inflow) as of June 30, 2023	Original Recognition Period (Years)	Increase/(Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences Between Expected and Actual Liability Experience					Thereafter
				2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	
2018-2019	\$ 20,951,182	\$ -	3.16	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2019-2020	10,859,554	-	3.46	1,443,757	-	-	-	-	-
2020-2021	4,125,640	158,677	3.12	1,322,321	158,677	-	-	-	-
2021-2022	(2,698,580)	(887,452)	2.98	(905,564)	(887,452)	-	-	-	-
2022-2023	10,204,305	<u>7,158,244</u>	3.35	<u>3,046,061</u>	<u>3,046,061</u>	<u>3,046,061</u>	<u>1,066,122</u>	-	-
		\$ 6,429,469		\$ 4,906,575	\$ 2,317,286	\$ 3,046,061	\$ 1,066,122	\$ -	\$ -

Differences Between Projected and Actual Earnings on Pension Plan Investments

Year	Original Outflow/(Inflow)	Deferred Outflow/(Inflow) as of June 30, 2023	Original Recognition Period (Years)	Increase/(Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences Between Projected and Actual Earnings on Pension Plan Investments					Thereafter
				2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	
2018-2019	\$ (668,792)	\$ -	5.00	\$ (133,760)	\$ -	\$ -	\$ -	\$ -	\$ -
2019-2020	8,719,821	1,743,965	5.00	1,743,964	1,743,965	-	-	-	-
2020-2021	(46,278,945)	(18,511,578)	5.00	(9,255,789)	(9,255,789)	(9,255,789)	-	-	-
2021-2022	46,503,082	27,901,850	5.00	9,300,616	9,300,616	9,300,616	9,300,618	-	-
2022-2023	(11,767,599)	<u>(9,414,079)</u>	5.00	<u>(2,353,520)</u>	<u>(2,353,520)</u>	<u>(2,353,520)</u>	<u>(2,353,520)</u>	<u>(2,353,519)</u>	-
		\$ 1,720,158		\$ (698,489)	\$ (564,728)	\$ (2,308,693)	\$ 6,947,098	\$ (2,353,519)	\$ -

Effects of Changes of Assumptions

Year	Original Outflow/(Inflow)	Deferred Outflow/(Inflow) as of June 30, 2023	Original Recognition Period (Years)	Increase/(Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions					Thereafter
				2022-2023	2023-2024	2024-2025	2025-2026	2026-2027	
2018-2019	\$ 44,510,450	\$ -	3.16	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2019-2020	-	-	3.46	-	-	-	-	-	-
2020-2021	-	-	3.12	-	-	-	-	-	-
2021-2022	-	-	2.98	-	-	-	-	-	-
2022-2023	(31,255,492)	<u>(21,925,494)</u>	3.35	<u>(9,329,998)</u>	<u>(9,329,998)</u>	<u>(9,329,998)</u>	<u>(3,265,498)</u>	-	-
		\$ (21,925,494)		\$ (9,329,998)	\$ (9,329,998)	\$ (9,329,998)	\$ (3,265,498)	\$ -	\$ -



Exhibit 4

Summary of Deferred Outflows and Inflows of Resources Arising from Current and Prior Reporting Periods

	Period		Amount
	(1)		(2)
1.	Fiscal Year + 1	\$	(7,577,440)
2.	Fiscal Year + 2		(8,592,630)
3.	Fiscal Year + 3		4,747,722
4.	Fiscal Year + 4		(2,353,519)
5.	Fiscal Year + 5		-
6.	Thereafter		-
7.	Total	\$	(13,775,867)

Exhibit 5

Schedule of Changes in the Employers' Net Pension Liability (\$ in thousands)

	2023	2022	2021	2020	2019	2018	2017	2016	2015	2014
Total pension liability										
1. Service Cost	13,229	12,158	12,530	13,192	11,726	11,890	8,297	8,402	7,695	7,142
2. Interest (on the Total Pension Liability)	53,853	53,740	53,417	52,697	49,301	47,978	51,769	52,951	50,661	50,391
3. Benefit Changes ¹	0	3,130	35	0	0	184	0	0	0	0
4. Difference between expected and actual experience	10,204	(2,700)	4,127	10,859	20,952	25,126	8,143	0	9,331	0
5. Changes of assumptions	(31,255)	0	0	0	44,510	0	136,602	56,191	40,201	0
6. Benefit payments	(63,804)	(64,120)	(63,249)	(62,423)	(60,949)	(58,805)	(56,934)	(56,268)	(54,765)	(53,026)
7. Refund of member contributions	(166)	(280)	(273)	(88)	(162)	(22)	(26)	(11)	(85)	(213)
8. Net change in total pension liability	\$ (17,939)	\$ 1,928	\$ 6,587	\$ 14,237	\$ 65,378	\$ 26,351	\$ 147,850	\$ 61,265	\$ 53,038	\$ 4,294
9. Total pension liability – beginning	1,057,752	1,055,824	1,049,237	1,035,000	969,622	943,271	795,421	734,156	681,118	676,824
10. Total pension liability – ending	\$ 1,039,813	\$ 1,057,752	\$ 1,055,824	\$ 1,049,237	\$ 1,035,000	\$ 969,622	\$ 943,271	\$ 795,421	\$ 734,156	\$ 681,118
Plan fiduciary net position¹										
1. Contributions – employer	\$ 58,120	\$ 277,341	\$ 59,650	\$ 59,453	\$ 60,048	\$ 46,877	\$ 63,239	\$ 25,822	\$ 31,990	\$ 20,279
2. Contributions – member ²	5,250	4,773	4,752	4,767	5,062	5,522	5,348	5,263	5,244	5,075
3. Net investment income ²	40,708	(22,088)	61,729	6,341	14,816	18,437	26,795	(3,843)	3,426	40,374
4. Benefit payments	(63,804)	(64,120)	(63,249)	(62,423)	(60,949)	(58,805)	(56,934)	(56,268)	(54,765)	(53,026)
5. Refund of member contributions	(166)	(280)	(273)	(88)	(162)	(22)	(26)	(11)	(85)	(213)
6. Administrative Expense	(293)	(273)	(212)	(266)	(225)	(194)	(181)	(178)	(201)	(215)
7. Other ³	0	0	0	0	3	21	(517)	0	645	0
8. Net change in plan fiduciary net position	\$ 39,815	\$ 195,353	\$ 62,397	\$ 7,784	\$ 18,593	\$ 11,836	\$ 37,724	\$ (29,215)	\$ (13,746)	\$ 12,274
9. Plan fiduciary net position – beginning	551,699	356,346	293,949	286,165	267,572	255,737	218,012	247,228	260,974	248,700
10. Prior year Adjustment	-	-	-	-	-	(1)	-	-	-	-
11. Plan fiduciary net position – ending	\$ 591,514	\$ 551,699	\$ 356,346	\$ 293,949	\$ 286,165	\$ 267,572	\$ 255,737	\$ 218,012	\$ 247,228	\$ 260,974
Net pension liability	\$ 448,299	\$ 506,053	\$ 699,478	\$ 755,288	\$ 748,835	\$ 702,050	\$ 687,534	\$ 577,409	\$ 486,928	\$ 420,144
Plan fiduciary net position as a percentage of the total pension liability	56.89%	52.16%	33.75%	28.02%	27.65%	27.60%	27.11%	27.41%	33.68%	38.32%
Covered-employee payroll⁴	\$ 65,693	\$ 48,061	\$ 47,873	\$ 49,019	\$ 49,515	\$ 50,346	\$ 54,065	\$ 46,685	\$ 45,765	\$ 44,616
Net pension liability as a percentage of covered employee payroll	682.42%	1052.94%	1461.11%	1540.81%	1512.34%	1394.45%	1271.68%	1236.82%	1063.97%	941.69%

Notes:

¹ Does not include 401(h) assets for fiscal years 2017 and later. 401(h) assets totaled \$1,312,000 as of June 30, 2023

² Does not include 401(h) contributions or associated investment income for fiscal years 2017 and later. For fiscal year 2023, 401(h) contributions equaled -\$8,000; and associated investment return equaled \$93,000.

³ Northern Trust Settlement for fiscal year 2018 and 2019.

³ Adjustment due to 401(h) plan asset balance that is considered an OPEB asset under GASB 74 for fiscal year 2017

⁴ Based on derived compensation using the provided employer contribution information for fiscal years 2017 and later



Exhibit 6

Schedule of the Employers' Contributions (\$ in thousands)

Fiscal Year Ending	Actuarially Determined Contribution ¹	Total Employer Contributions	Contribution Deficiency (Excess)	Covered Employee Payroll ²	Actual Contributions as a Percentage of Covered Payroll
2023	\$ 58,120	\$ 58,120	\$ -	\$ 65,693	88.47%
2022	62,341	277,341	(215,000)	48,061	577.06%
2021	59,263	59,650	(387)	47,873	124.60%
2020	58,358	59,453	(1,095)	49,019	121.29%
2019	58,948	60,048	(1,100)	49,515	121.27%
2018	36,033	46,877	(10,844)	50,346	93.11%
2017	35,937	63,240	(27,303)	54,065	116.97%
2016	25,723	25,822	(99)	46,685	55.31%
2015	31,444	31,990	(546)	45,765	69.90%
2014	25,808	20,279	5,529	44,616	45.45%

Notes:

¹ Actuarially determined contribution for fiscal year ending 2023 is based on the contribution rate calculated with the June 30, 2021 actuarial valuation, as amended by HB1 passed during the 2022 legislative session.

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 2023

The actuarially determined contribution effective for fiscal year ending 2023 that is documented in the schedule on the previous page was calculated as of June 30, 2021.

Based on the June 30, 2021 actuarial valuation report the actuarial methods and assumptions used to calculate the required contribution are below:

Determined by the Actuarial Valuation as of:	June 30, 2021
Actuarial Cost Method:	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
Amortization Method:	Level Percent of Pay
Amortization Period:	30-year closed period at June 30, 2019 <i>Gains/losses incurring after 2019 will be amortized over separate closed 20-year amortization bases</i>
Payroll Growth Rate	0.00%
Investment Return:	5.25%
Inflation:	2.30%
Salary Increases:	3.55% to 16.05%, 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

SECTION 3

DOCUMENTATION OF SUPPORT FOR INVESTMENT RETURN ASSUMPTION

Long-Term Expected Investment Return

The long-term expected rate of return was determined by using a building block method in which best estimate ranges of expected future real rates of returns are developed for each asset class. The ranges are combined by weighting the expected future real rate of return by the target asset allocation percentage. The target allocation and best estimates of arithmetic real rate of return for each major asset class is summarized in the table below. The current long term inflation assumption is 2.50% per annum.

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Equity		
Public Equity	32.50%	5.90%
Private Equity	7.00%	11.73%
Fixed Income		
Core Fixed Income	20.50%	2.45%
Specialty Credit	15.00%	3.65%
Cash	5.00%	1.39%
Inflation Protected		
Real Estate	10.00%	4.99%
Real Return	10.00%	5.15%
Expected Real Return	100.00%	4.87%
Long Term Inflation Assumption		2.50%
Expected Nominal Return for Portfolio		7.37%

Source: Kentucky Public Pensions Authority