

Kentucky State Police Retirement System

GASB No. 67 Accounting Valuation Report
As of June 30, 2018



November 19, 2018

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

Re: GASB 67 Reporting – Actuarial Information

Dear Members of the Board:

This report provided herein contains certain information for the State Police Retirement System (SPRS) in connection with the Governmental Accounting Standards Board (GASB) Statement No. 67, “Financial Reporting for Pension Plans” for the fiscal year ending June 30, 2018. 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 plans’ 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, 2017. The total pension liability was rolled-forward from the valuation date to the plan’s fiscal year ending June 30, 2018 using generally accepted actuarial principles. GASB 67 requires Kentucky Retirement Systems to disclose a 10-year history of certain information in the Required Supplementary Information within their comprehensive 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 KRS’s prior actuary.

There have been no changes in actuarial assumptions since June 30, 2017. However, during the 2018 legislative session, House Bill 185 was enacted, which updated the benefit provisions for active members who die in the line of duty. Benefits paid to the spouses of deceased members have been increased from 25% of the member’s final rate of pay to 75% of the member’s average pay. If the member does not have a surviving spouse, benefits paid to surviving dependent children have been increased from 10% of the member’s final pay rate to 50% of average pay for one child, 65% of average pay for two children, or 75% of average pay for three children. The Total Pension liability as of June 30, 2018 is determined using these updated benefit provisions. It is our opinion that this procedure is reasonable, appropriate, and complies with applicable requirements under GASB Statement No. 67.

This report is based upon information, furnished to us by the Retirement System, 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 the Retirement System. Please see the "Actuarial Valuation Report as of June 30, 2017" for additional discussion of the nature of actuarial calculation and more information related to participant data, economic and demographic assumptions, and benefit provisions. These two reports should be considered together as a complete report for KRS's fiscal year ending June 30, 2018.

A single discount rate of 5.25% was used to measure the total pension liability for the fiscal year ending June 30, 2018. This single discount rate was based on the expected rate of return on pension plan investments for each system. 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 system. The projection of cash flows used to determine the single discount rate assumes that the State contributes the actuarially determined contribution rate in all future years (determined without regard to enactment of SB 151 in 2018, which is currently being reviewed by the State Supreme Court).

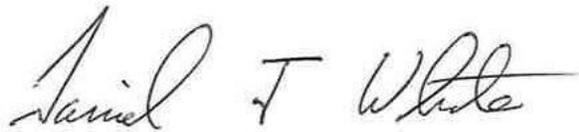
Based on guidance issued by GASB in connection with GASB Statement No. 74, the 1% of pay member contributions for Tier 2 and Tier 3 members to a 401(h) subaccount is considered as an OPEB asset. As a result, the reported fiduciary net positions as of June 30, 2017 and later are net of the 401(h) asset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

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

Sincerely,



Joseph P. Newton, FSA, EA, MAAA
Pension Market Leader and Actuary



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



Janie Shaw, ASA, MAAA
Consultant and Actuary

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SECTION 1

EXHIBIT 1

Schedule of the Employers' Net Pension Liability – SPRS (\$ thousands)

Fiscal Year Ending June 30,	Total Pension Liability	Plan Fiduciary Net Position	Employers' Net Pension Liability (Asset)	Plan Fiduciary Net Position as a Percentage of the Total Pension Liability	Covered Employee Payroll ¹	Net Pension Liability as a Percentage of Covered Employee Payroll
(1)	(2)	(1) - (2)	(2) / (1)	(3)	[(1) - (2)] / (3)	
2018	\$ 969,622	\$ 267,572	\$ 702,050	27.60%	\$ 50,346	1,394.45%
2017	943,271	255,737	687,534	27.11%	54,065	1,271.68%
2016	795,421	218,012	577,409	27.41%	46,685	1,236.82%
2015	734,156	247,228	486,928	33.68%	45,765	1,063.97%
2014	681,118	260,974	420,144	38.32%	44,616	941.69%

Note:

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

EXHIBIT 2

Schedule of the Employers' Net Pension Liability – SPRS (\$ thousands)

Change in the Net Pension Liability	2018	2017	2016	2015	2014
Total pension liability					
Service Cost	\$ 11,890	\$ 8,297	\$ 8,402	\$ 7,695	\$ 7,142
Interest	47,978	51,769	52,951	50,661	50,391
Benefit Changes	184	0	0	0	0
Difference between actual and expected experience	25,126	8,143	0	9,331	0
Assumption Changes	0	136,602	56,191	40,201	0
Benefit Payments	(58,827)	(56,960)	(56,279)	(54,850)	(53,239)
Net Change in Total Pension Liability	\$ 26,351	\$ 147,850	\$ 61,265	\$ 53,038	\$ 4,294
Total Pension Liability - Beginning	\$ 943,271	\$ 795,421	\$ 734,156	\$ 681,118	\$ 676,824
Total Pension Liability - Ending (a)	\$ 969,622	\$ 943,271	\$ 795,421	\$ 734,156	\$ 681,118
Plan Fiduciary Net Position¹					
Contributions - Employer	\$ 46,877	\$ 63,239	\$ 25,822	\$ 31,990	\$ 20,279
Contributions - Member ²	5,522	5,348	5,263	5,244	5,075
Refunds of contributions to members	(22)	(26)	(11)	(85)	(213)
Retirement benefits	(58,805)	(56,934)	(56,268)	(54,765)	(53,026)
Net Investment Income ²	18,437	26,795	(3,843)	3,426	40,374
Administrative Expense	(194)	(181)	(178)	(201)	(215)
Other	21 ⁴	(517)	0	645	0
Net Change in Plan Fiduciary Net Position	\$ 11,836	\$ 37,724	\$ (29,215)	\$ (13,746)	\$ 12,274
Plan Fiduciary Net Position - Beginning	\$ 255,737	\$ 218,012	\$ 247,228	\$ 260,974	\$ 248,700
Prior Year Adjustment	(1)	-	-	-	-
Plan Fiduciary Net Position - Ending (b)	\$ 267,572	\$ 255,737	\$ 218,012	\$ 247,228	\$ 260,974
Net Pension Liability - Ending (a) - (b)	\$ 702,050	\$ 687,534	\$ 577,409	\$ 486,928	\$ 420,144
Plan Fiduciary Net Position as a Percentage	27.60%	27.11%	27.41%	33.68%	38.32%
Covered Employee Payroll³	\$ 50,346	\$ 54,065	\$ 46,685	\$ 45,765	\$ 44,616
Net Pension Liability as a Percentage of Covered Employee Payroll	1394.45%	1271.68%	1236.82%	1063.97%	941.69%

Notes:

¹ Does not include 401(h) assets for fiscal years 2017 and later

² Does not include 401(h) contributions and investment income on 401(h) contributions for fiscal years 2017 and later

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

⁴ Northern Trust Settlement

EXHIBIT 3

Schedule of Employers' Contributions – SPRS (\$ 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
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%
2013	23,117	18,501	4,616	45,256	40.88%
2012	20,498	15,362	5,136	48,373	31.76%
2011	18,463	12,657	5,806	48,693	25.99%
2010	18,765	9,489	9,276	51,507	18.42%
2009	15,952	8,186	7,766	51,660	15.85%

Notes:

¹ Actuarially determined contribution rate for fiscal year ending 2018 is based on the contribution rate calculated with the the June 30, 2016 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

The actuarially determined contribution rates effective for fiscal year ending 2018 that are documented in the schedule on the previous pages are calculated as of June 30, 2016. Based on the June 30, 2016 actuarial valuation report (produced by the prior actuary), the actuarial methods and assumptions used to calculate these contribution rates are below:

Item	SPRS
Determined by the Actuarial Valuation as of:	June 30, 2016
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:	27 Years, Closed
Investment Return:	6.75%
Inflation:	3.25%
Salary Increases:	4.00%, average
Mortality:	RP-2000 Combined Mortality Table, projected to 2013 with Scale BB (set back 1 year for females)

EXHIBIT 4

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

1.00% Decrease (4.25%)	Current Discount Rate (5.25%)	1.00% Increase (6.25%)
\$ 823,796	\$ 702,050	\$ 601,850