

State Police Retirement System

GASB Statements No. 68 Accounting and Financial
Reporting for Pensions as of June 30, 2018





May 6, 2019

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, 2018

Dear Members of the Board:

This report 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 State of Kentucky for fiscal years ending between (and including) June 30, 2018 and June 30, 2019, with the financial reporting and disclosure requirements of GASB Statement Nos. 68.

The liability calculations presented in this report were performed for the purpose of satisfying the requirements of GASB Statement Nos. 67 and 68 and are not applicable for other purposes, such as determining the plans' 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 KRS and the State of Kentucky only in its entirety and only with the permission of KRS and the State.

The total pension liability, net pension liability, and sensitivity information shown in this report are based on an actuarial valuation performed as of June 30, 2017. The total pension liability was rolled-forward from the valuation date to the measurement period ending June 30, 2018, using generally accepted actuarial principles.


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 and No. 68.

This report is based upon information furnished by KRS, 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.

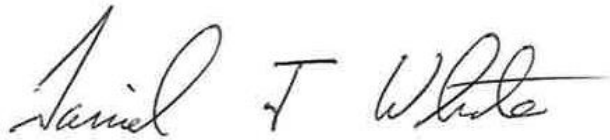
This report complements the GASB 67 accounting valuation report as of June 30, 2018, which was provided to KRS for plan accounting purposes, and the June 30, 2017 actuarial valuation which was provided for plan funding purposes. Together, these reports should be considered as a complete report for the measurement period that ended June 30, 2018. Please see the GASB 67 accounting valuation report as of June 30, 2018 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.

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 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 systems.

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, 2017
Measurement Date	June 30, 2018
Membership Information	
Number of	
- Inactive employees or beneficiaries currently receiving benefits	1,536
- Inactive employees entitled to but not yet receiving benefits	480
- Active employees	903
- Total	<u>2,919</u>
Covered Payroll	\$ 50,345,935
Net Pension Liability	
Total Pension Liability	\$ 969,622,171
Plan Fiduciary Net Position	<u>267,572,480</u>
Net Pension Liability	\$ 702,049,691
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	27.60%
Net Pension Liability as a Percentage of Covered Payroll	1394.45%
Pension Expense and Deferred Outflows/(Inflows) of Resources	
GASB 68 Pension Expense	\$ 115,270,321
Deferred Outflows of Resources	88,807,233
Deferred Inflow of Resources	11,173,943
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

Executive Summary

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

	Total Pension Liability (1)	Plan Fiduciary Net Position (2)	Net Pension Liability (1) - (2) (3)
Balance at June 30, 2017	\$ 943,271	\$ 255,737	\$ 687,534
Adjustment to prior year		(1)	1
1. Service cost	11,890		11,890
2. Interest	47,978		47,978
3. Benefit changes	184		184
4. Assumption changes	-		-
5. Difference between expected and actual experience	25,126		25,126
6. Employer contributions		46,877	(46,877)
7. Member contributions		5,522	(5,522)
8. Net investment income		18,437	(18,437)
9. Benefit payments	(58,805)	(58,805)	-
10. Refund of member contributions	(22)	(22)	-
11. Administrative expense	-	(194)	194
12. Other changes	-	21	(21)
13. Net changes	\$ 26,351	\$ 11,836	\$ 14,515
Balance at June 30, 2018	\$ 969,622	\$ 267,572	\$ 702,050

Note: Employer contributions include a \$10 million appropriation to the Retirement System from the State's General Fund.

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.

Executive Summary

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 KRS, and also in the KRS Comprehensive Annual Financial Report (CAFR), both found on their website. The State can use the description information and provide their respective plan provisions in their disclosure.
- Pension Investment Disclosures Related to the Investment Return Assumption - Requires disclosures regarding asset allocation and expected rates of return which are also available in the KRS CAFR.

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 (NPL) is the difference between the total pension liability and the plan's fiduciary net position. In traditional actuarial terms, this is analogous to the accrued liability less the market value of assets (not the smoothed actuarial value of assets that is often encountered in actuarial valuations performed to determine the employer's contribution requirement). The pension expense recognized each fiscal year is equal to the change in the net pension liability from the beginning of the year to the end of the year, adjusted for deferred recognition of certain changes due to the liability and investment experience.

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 performed as of June 30, 2017. The total pension liability was rolled-forward from the valuation date to the measurement period ending June 30, 2018, using generally accepted actuarial principles.

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 and No. 68.

Executive Summary

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 to the Retirement System subsequent to the measurement date of the Net Pension Liability and prior to the end of the employer's reporting period can 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, 2018.

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 as of June 30, 2018. This single discount rate was based on the expected rate of return on pension plan investments of 5.25%. Based on the stated assumptions and the projection of cash flows, the pension plan's fiduciary net position and future contributions were sufficient to finance the future benefit payments of the current plan members for all projection years. 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 for each fiscal year end assumed that the State will contribute the actuarially determined contribution determined in accordance with Kentucky State Code.

Summary of Membership Information

The following table provides a summary of the number of participants with a benefit in the plan as of the last actuarial valuation date, June 30, 2017.

Inactive plan members currently receiving benefits:	1,536
Inactive plan members entitled to but no yet receiving benefits:	480
Active plan members:	903
Total plan members:	2,919

Executive Summary

Recognition of Deferred Outflows and Inflows of Resources

GASB 68 requires that *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 measurement period ending June 30, 2018, the expected remaining service lives of all employees was 9,790 years, resulting in a 3.35 years (9,790 total expected remaining service period divided 2,919 plan members) average for the expected remaining service lives for purposes of recognizing the applicable deferred outflows and inflows of resources established in the 2018 plan year.

Total expected remaining service lives of all employees (years):	9,367
Total plan members:	2,919
Average expected remaining service life (years):	3.21

Additionally, 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, 2018, the Net Pension Liability is \$702,049,691. 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%
\$823,796,476	\$702,049,691	\$601,849,813

SECTION 2

ACCOUNTING EXHIBITS

Exhibit 1

Schedule of Pension Expense as of June 30, 2018

1. Service cost	\$	11,889,962
2. Interest on the Total Pension Liability		47,977,531
3. Current period benefit changes		183,771
4. Member contributions		(5,521,761)
5. Projected earnings on plan investments		(13,252,911)
6. Administrative expense		193,758
7. Other changes in fiduciary net position		(20,128)
8. Recognition of outflows (inflow) of resources - liability experience		11,164,922
9. Recognition of outflows (inflow) of resources - assumption changes		62,958,285
10. Recognition of outflows (inflow) of resources - investment experience		<u>(303,108)</u>
11. Pension Expense	\$	115,270,321

Exhibit 2

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

	Deferred Outflow of Resources	Deferred Inflow of Resources
	(1)	(2)
1. Differences between expected and actual liability experience	\$ 20,565,881	\$ -
2. Changes in assumptions	56,441,012	-
3. Differenced between projected and actual earnings on plan investments	11,800,340	11,173,943
4. Employer contributions subsequent to the measurement date ¹	Unknown	
5. Total	\$ 88,807,233	\$ 11,173,943

¹ Employer contributions to the Retirement System 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, 2018	Original Recognition Period (Years)	Increase/(Decrease) in Pension Expense Arising from the Recognition of the Effects of Differences Between Expected and Actual Liability Experience					
				2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	Thereafter
2013-2014	\$ -	\$ -	3.32	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2014-2015	9,330,977	-	3.32	899,372	-	-	-	-	-
2015-2016	-	-	3.09	-	-	-	-	-	-
2016-2017	8,142,618	3,266,798	3.34	2,437,910	2,437,910	828,888	-	-	-
2017-2018	25,126,723	17,299,083	3.21	7,827,640	7,827,640	7,827,640	1,643,803	-	-
		\$ 20,565,881		\$ 11,164,922	\$ 10,265,550	\$ 8,656,528	\$ 1,643,803	\$ -	\$ -

Differences Between Projected and Actual Earnings on Pension Plan Investments									
Year	Original Outflow/(Inflow)	Deferred Outflow/(Inflow) as of June 30, 2018	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					
				2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	Thereafter
2013-2014	\$ (22,188,538)	\$ -	5.00	\$ (4,437,706)	\$ -	\$ -	\$ -	\$ -	\$ -
2014-2015	16,134,410	3,226,882	5.00	3,226,882	3,226,882	-	-	-	-
2015-2016	21,433,645	8,573,458	5.00	4,286,729	4,286,729	4,286,729	-	-	-
2016-2017	(11,710,557)	(7,026,335)	5.00	(2,342,111)	(2,342,111)	(2,342,111)	(2,342,113)	-	-
2017-2018	(5,184,510)	(4,147,608)	5.00	(1,036,902)	(1,036,902)	(1,036,902)	(1,036,902)	(1,036,902)	-
		\$ 626,397		\$ (303,108)	\$ 4,134,598	\$ 907,716	\$ (3,379,015)	\$ (1,036,902)	\$ -

Effects of Changes of Assumptions									
Year	Original Outflow/(Inflow)	Deferred Outflow/(Inflow) as of June 30, 2018	Original Recognition Period (Years)	Increase/(Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions					
				2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	Thereafter
2013-2014	\$ -	\$ -	3.32	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2014-2015	40,200,657	-	3.32	3,874,761	-	-	-	-	-
2015-2016	56,190,811	1,636,627	3.09	18,184,728	1,636,627	-	-	-	-
2016-2017	136,601,977	54,804,385	3.34	40,898,796	40,898,796	13,905,589	-	-	-
2017-2018	-	-	3.21	-	-	-	-	-	-
		\$ 56,441,012		\$ 62,958,285	\$ 42,535,423	\$ 13,905,589	\$ -	\$ -	\$ -

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	\$ 56,935,571
2. Fiscal Year + 2	23,469,833
3. Fiscal Year + 3	(1,735,212)
4. Fiscal Year + 4	(1,036,902)
5. Fiscal Year + 5	-
6. Thereafter	-
7. Total	\$ 77,633,290

Exhibit 5

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

	2018	2017	2016	2015	2014
Total pension liability					
1. Service Cost	11,890	8,297	8,402	7,695	7,142
2. Interest (on the Total Pension Liability)	47,978	51,769	52,951	50,661	50,391
3. Benefit Changes	184	0	0	0	0
4. Difference between expected and actual experience	25,126	8,143	0	9,331	0
5. Changes of assumptions	0	136,602	56,191	40,201	0
6. Benefit payments	(58,805)	(56,934)	(56,268)	(54,765)	(53,026)
7. Refund of member contributions	(22)	(26)	(11)	(85)	(213)
8. Net change in total pension liability	\$ 26,351	\$ 147,850	\$ 61,265	\$ 53,038	\$ 4,294
9. Total pension liability – beginning	943,271	795,421	734,156	681,118	676,824
10. Total pension liability – ending	\$ 969,622	\$ 943,271	\$ 795,421	\$ 734,156	\$ 681,118
Plan fiduciary net position¹					
1. Contributions – employer	\$ 46,877	\$ 63,239	\$ 25,822	\$ 31,990	\$ 20,279
2. Contributions – member ²	5,522	5,348	5,263	5,244	5,075
3. Net investment income ²	18,437	26,795	(3,843)	3,426	40,374
4. Benefit payments	(58,805)	(56,934)	(56,268)	(54,765)	(53,026)
5. Refund of member contributions	(22)	(26)	(11)	(85)	(213)
6. Administrative Expense	(194)	(181)	(178)	(201)	(215)
7. Other ⁴	21	(517)	0	645	0
8. Net change in plan fiduciary net position	\$ 11,836	\$ 37,724	\$ (29,215)	\$ (13,746)	\$ 12,274
9. Plan fiduciary net position – beginning	255,737	218,012	247,228	260,974	248,700
10. Prior year Adjustment	(1)	-	-	-	-
11. Plan fiduciary net position – ending	\$ 267,572	\$ 255,737	\$ 218,012	\$ 247,228	\$ 260,974
Net pension liability	\$ 702,050	\$ 687,534	\$ 577,409	\$ 486,928	\$ 420,144
Plan fiduciary net position as a percentage of the total pension liability	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%

Note:

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

The employer contribution for FY 2018 includes a \$10 million appropriation to the Retirement System from the State's General Fund.

Exhibit 6

Schedule of the Employers' Contributions for the Measurement Period Ending June 30, 2018 (\$ 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
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 June 30, 2018 that are documented in the schedule on the previous pages are calculated based on the June 30, 2016 actuarial valuation. The principal actuarial methods and assumptions used to calculate these contribution rates are below:

Item	SPRS
Determined by an 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)