

State Police Retirement System

GASB Statements No. 68 Accounting and Financial
Reporting for Pensions as of June 30, 2019





February 6, 2020

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, 2019

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 State of Kentucky for fiscal years ending between (and including) June 30, 2019 and June 30, 2020, for 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 No. 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 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 performed as of June 30, 2018. The total pension liability was rolled-forward from the valuation date to the measurement date at June 30, 2019, using generally accepted actuarial principles.

There have been no changes in plan provisions since June 30, 2018. However, the Board of Trustees has adopted new actuarial assumptions since June 30, 2018. These assumptions are documented in the report titled "Kentucky Retirement Systems 2018 Actuarial Experience Study for the Period Ending June 30, 2018". The Total Pension liability as of June 30, 2019 is determined using these updated assumptions. It is our opinion that these procedures are reasonable and appropriate, and comply with applicable requirements under GASB No. 68.

This report is based upon information furnished 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. This report complements the GASB 67 accounting valuation report as of June 30, 2019, which was provided to KRS for plan accounting purposes, the "Actuarial Valuation Report as of June 30, 2018", which was provided for plan funding purposes, and the "2018 Actuarial Experience Study for the Period Ending June 30, 2018" 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, 2019. Please see the GASB 67 accounting valuation report as of June 30, 2019 for additional discussion of accounting information and the actuarial valuation report and experience study report for information regarding the nature of actuarial calculations, participant data, economic and demographic assumptions, and benefit provisions.

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 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.

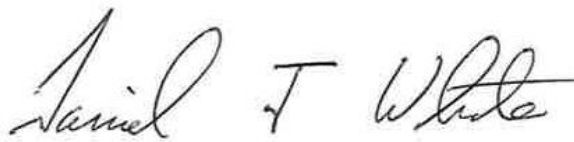
Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or 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. 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, 2018
Measurement Date	June 30, 2019
Membership Information	
Number of	
- Inactive employees or beneficiaries currently receiving benefits	1,600
- Inactive employees entitled to but not yet receiving benefits	499
- Active employees	886
- Total	<u>2,985</u>
Covered Payroll ¹	\$ 49,515,058
Net Pension Liability	
Total Pension Liability	\$ 1,034,999,802
Plan Fiduciary Net Position	<u>286,165,095</u>
Net Pension Liability	\$ 748,834,707
Plan Fiduciary Net Position as a Percentage of Total Pension Liability	27.65%
Net Pension Liability as a Percentage of Covered Payroll	1512.34%
Pension Expense and Deferred Outflows/(Inflows) of Resources	
GASB 68 Pension Expense	\$ 119,558,108
Deferred Outflows of Resources	73,238,575
Deferred Inflow of Resources	8,329,964
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 2019

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, 2018	\$ 969,622	\$ 267,572	\$ 702,050
Adjustment to prior year		-	-
1. Service cost	11,726		11,726
2. Interest	49,301		49,301
3. Benefit changes	-		-
4. Assumption changes	44,510		44,510
5. Difference between expected and actual experience	20,952		20,952
6. Employer contributions ¹		60,048	(60,048)
7. Member contributions		5,062	(5,062)
8. Net investment income		14,816	(14,816)
9. Benefit payments	(60,949)	(60,949)	-
10. Refund of member contributions	(162)	(162)	-
11. Administrative expense	-	(225)	225
12. Other changes ²	-	3	(3)
13. Net changes	\$ 65,378	\$ 18,593	\$ 46,785
Balance at June 30, 2019	\$ 1,035,000	\$ 286,165	\$ 748,835

Notes:

¹ Employer contributions include a \$1.086 million appropriation from the State's General Fund.

² Northern Trust Settlement

Executive Summary

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 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 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 performed as of June 30, 2018. The total pension liability was rolled-forward from the valuation date to the measurement date at June 30, 2019, using generally accepted actuarial principles.

There have been no changes in plan provisions since June 30, 2018. However, the Board of Trustees has adopted new actuarial assumptions since June 30, 2018. These assumptions are documented in the report titled "Kentucky Retirement Systems 2018 Actuarial Experience Study for the Period Ending June 30, 2018". The Total Pension liability as of June 30, 2019 is determined using these updated assumptions. It is our opinion that these procedures are reasonable and appropriate, and comply with applicable requirements under GASB 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 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, 2019.

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, 2019. This single discount rate was based on the expected rate of return on pension plan investments for the 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 fund receives the entire actuarially determined contribution in all future years.

Summary of Membership Information

The total pension liability described in this report is based on the plan membership as of June 30, 2018:

Inactive plan members currently receiving benefits:	1,600
Inactive plan members entitled to but no yet receiving benefits:	499
Active plan members:	886
Total plan members:	<u>2,985</u>

Executive Summary

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 2019 measurement period, the expected remaining service lives of all employees was 9,423 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 2019 measurement period was 3.16 years (9,423 total expected remaining service period divided 2,985 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, 2019, the Net Pension Liability is \$748,834,707. 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%
\$883,454,654	\$748,834,707	\$638,834,557

SECTION 2

ACCOUNTING EXHIBITS

Exhibit 1

Schedule of Pension Expense as of June 30, 2019

1. Service cost	\$	11,725,903
2. Interest on the Total Pension Liability		49,301,003
3. Current period benefit changes		-
4. Member contributions		(5,061,567)
5. Projected earnings on plan investments		(14,146,705)
6. Administrative expense		224,552
7. Other changes in fiduciary net position		(2,597)
8. Recognition of outflows (inflow) of resources - liability experience		16,895,671
9. Recognition of outflows (inflow) of resources - assumption changes		56,621,008
10. Recognition of outflows (inflow) of resources - investment experience		<u>4,000,840</u>
11. Pension Expense	\$	119,558,108

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	\$ 24,621,392	\$ -
2. Changes in assumptions	44,330,454	-
3. Differenced between projected and actual earnings on plan investments	4,286,729	8,329,964
4. Employer contributions subsequent to the measurement date ¹	<u>Unknown</u>	<u> </u>
5. Total	\$ 73,238,575	\$ 8,329,964

Notes:

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, 2019	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
				2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	
2014-2015	\$ 9,330,977	\$ -	3.32	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015-2016	-	-	3.09	-	-	-	-	-	-
2016-2017	8,142,618	828,888	3.34	2,437,910	828,888	-	-	-	-
2017-2018	25,126,723	9,471,443	3.21	7,827,640	7,827,640	1,643,803	-	-	-
2018-2019	20,951,182	<u>14,321,061</u>	3.16	<u>6,630,121</u>	<u>6,630,121</u>	<u>6,630,121</u>	<u>1,060,819</u>	-	-
		\$ 24,621,392		\$ 16,895,671	\$ 15,286,649	\$ 8,273,924	\$ 1,060,819	\$ -	\$ -

Differences Between Projected and Actual Earnings on Pension Plan Investments

Year	Original Outflow/(Inflow)	Deferred Outflow/(Inflow) as of June 30, 2019	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
				2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	
2014-2015	\$ 16,134,410	\$ -	5.00	\$ 3,226,882	\$ -	\$ -	\$ -	\$ -	\$ -
2015-2016	21,433,645	4,286,729	5.00	4,286,729	4,286,729	-	-	-	-
2016-2017	(11,710,557)	(4,684,224)	5.00	(2,342,111)	(2,342,111)	(2,342,113)	-	-	-
2017-2018	(5,184,510)	(3,110,706)	5.00	(1,036,902)	(1,036,902)	(1,036,902)	(1,036,902)	-	-
2018-2019	(668,792)	<u>(535,034)</u>	5.00	<u>(133,758)</u>	<u>(133,758)</u>	<u>(133,758)</u>	<u>(133,758)</u>	<u>(133,760)</u>	-
		\$ (4,043,235)		\$ 4,000,840	\$ 773,958	\$ (3,512,773)	\$ (1,170,660)	\$ (133,760)	\$ -

Effects of Changes of Assumptions

Year	Original Outflow/(Inflow)	Deferred Outflow/(Inflow) as of June 30, 2019	Original Recognition Period (Years)	Increase/(Decrease) in Pension Expense Arising from the Recognition of the Effects of Changes of Assumptions					Thereafter
				2018-2019	2019-2020	2020-2021	2021-2022	2022-2023	
2014-2015	\$ 40,200,657	\$ -	3.32	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2015-2016	56,190,811	-	3.09	1,636,627	-	-	-	-	-
2016-2017	136,601,977	13,905,589	3.34	40,898,796	13,905,589	-	-	-	-
2017-2018	-	-	3.21	-	-	-	-	-	-
2018-2019	44,510,450	<u>30,424,865</u>	3.16	<u>14,085,585</u>	<u>14,085,585</u>	<u>14,085,585</u>	<u>2,253,695</u>	-	-
		\$ 44,330,454		\$ 56,621,008	\$ 27,991,174	\$ 14,085,585	\$ 2,253,695	\$ -	\$ -

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	\$ 44,051,781
2. Fiscal Year + 2	18,846,736
3. Fiscal Year + 3	2,143,854
4. Fiscal Year + 4	(133,760)
5. Fiscal Year + 5	-
6. Thereafter	-
7. Total	\$ 64,908,611

Exhibit 5

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

	2019	2018	2017	2016	2015	2014
Total pension liability						
1. Service Cost	11,726	11,890	8,297	8,402	7,695	7,142
2. Interest (on the Total Pension Liability)	49,301	47,978	51,769	52,951	50,661	50,391
3. Benefit Changes	0	184	0	0	0	0
4. Difference between expected and actual experience	20,952	25,126	8,143	0	9,331	0
5. Changes of assumptions	44,510	0	136,602	56,191	40,201	0
6. Benefit payments	(60,949)	(58,805)	(56,934)	(56,268)	(54,765)	(53,026)
7. Refund of member contributions	(162)	(22)	(26)	(11)	(85)	(213)
8. Net change in total pension liability	\$ 65,378	\$ 26,351	\$ 147,850	\$ 61,265	\$ 53,038	\$ 4,294
9. Total pension liability – beginning	969,622	943,271	795,421	734,156	681,118	676,824
10. Total pension liability – ending	\$ 1,035,000	\$ 969,622	\$ 943,271	\$ 795,421	\$ 734,156	\$ 681,118
Plan fiduciary net position¹						
1. Contributions – employer ⁵	\$ 60,048	\$ 46,877	\$ 63,239	\$ 25,822	\$ 31,990	\$ 20,279
2. Contributions – member ²	5,062	5,522	5,348	5,263	5,244	5,075
3. Net investment income ²	14,816	18,437	26,795	(3,843)	3,426	40,374
4. Benefit payments	(60,949)	(58,805)	(56,934)	(56,268)	(54,765)	(53,026)
5. Refund of member contributions	(162)	(22)	(26)	(11)	(85)	(213)
6. Administrative Expense	(225)	(194)	(181)	(178)	(201)	(215)
7. Other ⁴	3	21	(517)	0	645	0
8. Net change in plan fiduciary net position	\$ 18,593	\$ 11,836	\$ 37,724	\$ (29,215)	\$ (13,746)	\$ 12,274
9. Plan fiduciary net position – beginning	267,572	255,737	218,012	247,228	260,974	248,700
10. Prior year Adjustment	-	(1)	-	-	-	-
11. Plan fiduciary net position – ending	\$ 286,165	\$ 267,572	\$ 255,737	\$ 218,012	\$ 247,228	\$ 260,974
Net pension liability	\$ 748,835	\$ 702,050	\$ 687,534	\$ 577,409	\$ 486,928	\$ 420,144
Plan fiduciary net position as a percentage of the total pension liability	27.65%	27.60%	27.11%	27.41%	33.68%	38.32%
Covered-employee payroll³	\$ 49,515	\$ 50,346	\$ 54,065	\$ 46,685	\$ 45,765	\$ 44,616
Net pension liability as a percentage of covered employee payroll	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

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 for fiscal year 2018 and 2019

⁵ Employer contributions include a \$1.086 million appropriation from the State's General Fund.

Exhibit 6

Schedule of the Employers' Contributions for the Measurement Period Ending June 30, 2019 (\$ 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
2019	\$ 58,948	\$ 60,048 ³	\$ (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%
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%

Notes:

¹ Actuarially determined contribution rate for fiscal year ending 2019 is based on the contribution rate calculated with the the June 30, 2017 actuarial valuation.

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

³ Contributions for fiscal year 2019 include a \$1.086 million appropriation from the State's General Fund.

Notes to Schedule of Employers' Contributions

The actuarially determined contribution rate effective for fiscal year ending 2019 that is documented in the schedule on the previous page was calculated as of June 30, 2017. Based on the June 30, 2017 actuarial valuation report, the actuarial methods and assumptions used to calculate this contribution rate is below:

Item	SPRS
Determined by an Actuarial Valuation as of:	June 30, 2017
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:	26 Years, Closed
Payroll Growth Rate:	0.00%
Investment Return:	5.25%
Inflation:	2.30%
Salary Increases:	3.05% to 15.55%, varies by service
Mortality:	RP-2000 Combined Mortality Table, projected to 2013 with Scale BB (set back 1 year for females)

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 2.30% per annum.

Asset Class	Target Allocation	Long-Term Expected Real Rate of Return
Growth	53.50%	
US Equity	15.75%	4.30%
Non-US Equity	15.75%	4.80%
Private Equity	7.00%	6.65%
Specialty Credit/High Yield	15.00%	2.60%
Liquidity	23.50%	
Core Bonds	20.50%	1.35%
Cash	3.00%	0.20%
Diversifying Strategies	23.00%	
Real Estate	5.00%	4.85%
Opportunistic	3.00%	2.97%
Real Return	15.00%	4.10%

Source: Kentucky Retirement Systems