

# Kentucky County Employees 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 County Employees Retirement System (CERS) 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 6.25% 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).

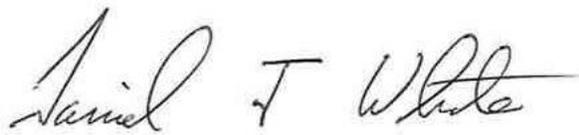
Based on guidance issued by GASB in connection with GASB Statement No. 74, the 1% of pay member contributions for Tier 2 and Tier 3 members to a 401(h) subaccount is considered as an OPEB asset. As a result, the reported fiduciary net positions as of June 30, 2017 and later are net of the 401(h) asset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

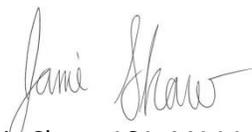
Sincerely,



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

# Table of Contents

			<b>Page</b>
	<b>COVER LETTER</b>		
<b>SECTION 1</b>	<b>SUPPORTING EXHIBITS</b>		
	EXHIBIT 1	— SCHEDULE OF EMPLOYERS' NET PENSION LIABILITY	2
	EXHIBIT 2	— SCHEDULE OF CHANGES IN EMPLOYERS' NET PENSION LIABILITY	4
	EXHIBIT 3	— SCHEDULE OF EMPLOYERS' CONTRIBUTIONS	6
	EXHIBIT 4	— SENSITIVITY OF THE NET PENSION LIABILITY TO CHANGES IN THE DISCOUNT RATE	9

**SECTION 1**

---

## EXHIBIT 1a

### Schedule of the Employers' Net Pension Liability – CERS Non-Hazardous Plan (\$ 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 <sup>1</sup>	Net Pension Liability as a Percentage of Covered Employee Payroll
(1)	(2)	(1) - (2)	(2) / (1)	(3)	[(1) - (2)] / (3)	
2018	\$ 13,109,268	\$ 7,018,963	\$ 6,090,305	53.54%	\$ 2,454,927	248.08%
2017	12,540,545	6,687,237	5,853,308	53.32%	2,376,290	246.32%
2016	11,065,013	6,141,395	4,923,618	55.50%	2,417,187	203.69%
2015	10,740,325	6,440,800	4,299,525	59.97%	2,296,716	187.20%
2014	9,772,522	6,528,146	3,244,376	66.80%	2,272,270	142.78%

Note:

<sup>1</sup> 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 – CERS Hazardous Plan (\$ 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 <sup>1</sup>	Net Pension Liability as a Percentage of Covered Employee Payroll
(1)	(2)	(1) - (2)	(2) / (1)	(3)	[(1) - (2)] / (3)	
2018	\$ 4,766,794	\$ 2,348,337	\$ 2,418,457	49.26%	\$ 562,853	429.68%
2017	4,455,275	2,217,996	2,237,279	49.78%	526,559	424.89%
2016	3,726,115	2,010,174	1,715,941	53.95%	526,334	326.02%
2015	3,613,308	2,078,202	1,535,106	57.52%	483,641	317.41%
2014	3,288,826	2,087,002	1,201,824	63.46%	479,164	250.82%

Note:

<sup>1</sup> 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 – CERS Non-Hazardous Plan (\$ thousands)

Change in the Net Pension Liability	2018	2017	2016	2015	2014
<b>Total pension liability</b>					
Service Cost	\$ 254,169	\$ 193,082	\$ 209,101	\$ 207,400	\$ 192,482
Interest	760,622	803,555	780,587	733,002	710,526
Benefit Changes	15,708	0	0	0	0
Difference between actual and expected experience	279,401	(208,015)	0	49,966	0
Assumption Changes	0	1,388,800	0	606,293	0
Benefit Payments	(741,177)	(701,891)	(665,000)	(628,858)	(597,136)
<b>Net Change in Total Pension Liability</b>	<b>\$ 568,723</b>	<b>\$ 1,475,532</b>	<b>\$ 324,687</b>	<b>\$ 967,803</b>	<b>\$ 305,872</b>
<b>Total Pension Liability - Beginning</b>	<b>\$ 12,540,545</b>	<b>\$ 11,065,013</b>	<b>\$ 10,740,325</b>	<b>\$ 9,772,522</b>	<b>\$ 9,466,650</b>
<b>Total Pension Liability - Ending (a)</b>	<b>\$ 13,109,268</b>	<b>\$ 12,540,545</b>	<b>\$ 11,065,013</b>	<b>\$ 10,740,325</b>	<b>\$ 9,772,522</b>
<b>Plan Fiduciary Net Position<sup>1</sup></b>					
Contributions - Employer	\$ 358,017	\$ 333,554	\$ 284,105	\$ 298,565	\$ 324,231
Contributions - Member <sup>2</sup>	160,370	150,715	141,674	140,311	128,568
Refunds of contributions to members	(14,608)	(14,430)	(13,753)	(13,523)	(14,286)
Retirement benefits	(726,569)	(687,461)	(651,246)	(615,335)	(582,850)
Net Investment Income <sup>2</sup>	573,829	825,900	(40,800)	110,568	895,530
Administrative Expense	(19,592)	(19,609)	(19,385)	(18,212)	(18,615)
Other	361 <sup>4</sup>	(42,827)	0	10,280	0
<b>Net Change in Plan Fiduciary Net Position</b>	<b>\$ 331,808</b>	<b>\$ 545,843</b>	<b>\$ (299,405)</b>	<b>\$ (87,346)</b>	<b>\$ 732,578</b>
<b>Plan Fiduciary Net Position - Beginning</b>	<b>\$ 6,687,237</b>	<b>\$ 6,141,395</b>	<b>\$ 6,440,800</b>	<b>\$ 6,528,146</b>	<b>\$ 5,795,568</b>
Prior Year Adjustment	(82)	-	-	-	-
<b>Plan Fiduciary Net Position - Ending (b)</b>	<b>\$ 7,018,963</b>	<b>\$ 6,687,237</b>	<b>\$ 6,141,395</b>	<b>\$ 6,440,800</b>	<b>\$ 6,528,146</b>
<b>Net Pension Liability - Ending (a) - (b)</b>	<b>\$ 6,090,305</b>	<b>\$ 5,853,308</b>	<b>\$ 4,923,618</b>	<b>\$ 4,299,525</b>	<b>\$ 3,244,376</b>
<b>Plan Fiduciary Net Position as a Percentage</b>	<b>53.54%</b>	<b>53.32%</b>	<b>55.50%</b>	<b>59.97%</b>	<b>66.80%</b>
<b>Covered Employee Payroll<sup>3</sup></b>	<b>\$ 2,454,927</b>	<b>\$ 2,376,290</b>	<b>\$ 2,417,187</b>	<b>\$ 2,296,716</b>	<b>\$ 2,272,270</b>
<b>Net Pension Liability as a Percentage of Covered Employee Payroll</b>	<b>248.08%</b>	<b>246.32%</b>	<b>203.69%</b>	<b>187.20%</b>	<b>142.78%</b>

Notes:

<sup>1</sup> Does not include 401(h) assets for fiscal years 2017 and later

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

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

<sup>4</sup> Northern Trust Settlement

## EXHIBIT 2b

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

Change in the Net Pension Liability	2018	2017	2016	2015	2014
<b>Total pension liability</b>					
Service Cost	\$ 81,103	\$ 58,343	\$ 66,249	\$ 71,934	\$ 66,761
Interest	270,694	270,860	262,886	247,008	238,665
Benefit Changes	2,172	0	0	0	0
Difference between actual and expected experience	205,882	92,588	0	41,935	0
Assumption Changes	0	536,667	0	166,849	0
Benefit Payments	(248,332)	(229,299)	(216,327)	(203,244)	(192,299)
<b>Net Change in Total Pension Liability</b>	<b>\$ 311,519</b>	<b>\$ 729,159</b>	<b>\$ 112,807</b>	<b>\$ 324,482</b>	<b>\$ 113,127</b>
<b>Total Pension Liability - Beginning</b>	<b>\$ 4,455,275</b>	<b>\$ 3,726,115</b>	<b>\$ 3,613,308</b>	<b>\$ 3,288,826</b>	<b>\$ 3,175,699</b>
<b>Total Pension Liability - Ending (a)</b>	<b>\$ 4,766,794</b>	<b>\$ 4,455,275</b>	<b>\$ 3,726,115</b>	<b>\$ 3,613,308</b>	<b>\$ 3,288,826</b>
<b>Plan Fiduciary Net Position<sup>1</sup></b>					
Contributions - Employer	\$ 127,660	\$ 115,947	\$ 105,713	\$ 108,071	\$ 115,240
Contributions - Member <sup>2</sup>	61,089	60,101	52,972	47,692	43,722
Refunds of contributions to members	(4,214)	(2,315)	(2,879)	(3,111)	(2,664)
Retirement benefits	(244,118)	(226,984)	(213,448)	(200,134)	(189,635)
Net Investment Income <sup>2</sup>	191,324	270,473	(9,020)	37,104	288,490
Administrative Expense	(1,504)	(1,421)	(1,366)	(1,288)	(1,721)
Other	111 <sup>4</sup>	(7,979)	0	2,865	0
<b>Net Change in Plan Fiduciary Net Position</b>	<b>\$ 130,348</b>	<b>\$ 207,822</b>	<b>\$ (68,028)</b>	<b>\$ (8,801)</b>	<b>\$ 253,432</b>
<b>Plan Fiduciary Net Position - Beginning</b>	<b>\$ 2,217,996</b>	<b>\$ 2,010,174</b>	<b>\$ 2,078,202</b>	<b>\$ 2,087,002</b>	<b>\$ 1,833,570</b>
Prior Year Adjustment	(7)	-	-	-	-
<b>Plan Fiduciary Net Position - Ending (b)</b>	<b>\$ 2,348,337</b>	<b>\$ 2,217,996</b>	<b>\$ 2,010,174</b>	<b>\$ 2,078,202</b>	<b>\$ 2,087,002</b>
<b>Net Pension Liability - Ending (a) - (b)</b>	<b>\$ 2,418,457</b>	<b>\$ 2,237,279</b>	<b>\$ 1,715,941</b>	<b>\$ 1,535,106</b>	<b>\$ 1,201,824</b>
<b>Plan Fiduciary Net Position as a Percentage</b>	<b>49.26%</b>	<b>49.78%</b>	<b>53.95%</b>	<b>57.52%</b>	<b>63.46%</b>
<b>Covered Employee Payroll<sup>3</sup></b>	<b>\$ 562,853</b>	<b>\$ 526,559</b>	<b>\$ 526,334</b>	<b>\$ 483,641</b>	<b>\$ 479,164</b>
<b>Net Pension Liability as a Percentage of Covered Employee Payroll</b>	<b>429.68%</b>	<b>424.89%</b>	<b>326.02%</b>	<b>317.41%</b>	<b>250.82%</b>

Notes:

<sup>1</sup> Does not include 401(h) assets for fiscal years 2017 and later

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

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

<sup>4</sup> Northern Trust Settlement

## EXHIBIT 3a

### Schedule of Employers' Contributions – CERS Non-Hazardous Plan (\$ thousands)

Fiscal Year Ending	Actuarially Determined Contribution <sup>1</sup>	Total Employer Contributions	Contribution Deficiency (Excess)	Covered Employee Payroll <sup>2</sup>	Actual Contributions as a Percentage of Covered Payroll
2018	\$ 355,473	\$ 358,017	\$ (2,544)	\$ 2,454,927	14.58%
2017	331,492	333,554	(2,062)	2,376,290	14.04%
2016	282,767	284,106	(1,339)	2,417,187	11.75%
2015	297,715	298,566	(851)	2,296,716	13.00%
2014	324,231	324,231	0	2,272,270	14.27%
2013	294,914	294,914	0	2,236,277	13.19%
2012	261,764	275,736	(13,972)	2,236,546	12.33%
2011	218,985	248,519	(29,534)	2,276,596	10.92%
2010	186,724	207,076	(20,352)	2,236,855	9.26%
2009	161,097	179,285	(18,188)	2,183,612	8.21%

Notes:

<sup>1</sup> Actuarially determined contribution rate for fiscal year ending 2018 is based on the contribution rate calculated with the the June 30, 2016 actuarial valuation.

<sup>2</sup> Based on derived compensation using the provided employer contribution information for fiscal years 2017 and later

## EXHIBIT 3b

### Schedule of Employers' Contributions – CERS Hazardous Plan (\$ thousands)

Fiscal Year Ending	Actuarially Determined Contribution <sup>1</sup>	Total Employer Contributions	Contribution Deficiency (Excess)	Covered Employee Payroll <sup>2</sup>	Actual Contributions as a Percentage of Covered Payroll
2018	\$ 124,953	\$ 127,660	\$ (2,707)	\$ 562,853	22.68%
2017	114,316	115,947	(1,631)	526,559	22.02%
2016	104,952	105,713	(761)	526,334	20.08%
2015	107,514	108,071	(557)	483,641	22.35%
2014	115,240	115,240	0	479,164	24.05%
2013	120,140	120,140	0	461,673	26.02%
2012	83,589	89,329	(5,740)	464,229	19.24%
2011	78,796	85,078	(6,282)	466,964	18.22%
2010	76,391	82,887	(6,496)	466,549	17.77%
2009	69,056	78,152	(9,096)	469,315	16.65%

**Notes:**

<sup>1</sup> Actuarially determined contribution rate for fiscal year ending 2018 is based on the contribution rate calculated with the the June 30, 2016 actuarial valuation.

<sup>2</sup> Based on derived compensation using the provided employer contribution information for fiscal years 2017 and later

## Notes to Schedule of Employers' Contributions for FY 2018

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	CERS Non-Hazardous	CERS Hazardous
Determined by the Actuarial Valuation as of:	June 30, 2016	June 30, 2016
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:	27 Years, Closed	27 Years, Closed
Investment Return:	7.50%	7.50%
Inflation:	3.25%	3.25%
Salary Increases:	4.00%, average	4.00%, average
Mortality:	RP-2000 Combined Mortality Table, projected to 2013 with Scale BB (set back 1 year for females)	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)

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

1.00% Decrease (5.25%)	Current Discount Rate (6.25%)	1.00% Increase (7.25%)
\$ 7,667,063	\$ 6,090,305	\$ 4,769,258

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

1.00% Decrease (5.25%)	Current Discount Rate (6.25%)	1.00% Increase (7.25%)
\$ 3,030,168	\$ 2,418,457	\$ 1,912,763