

# Kentucky Employees Retirement System

GASB No. 74 Accounting Valuation Report  
As of June 30, 2020





December 3, 2020  
Board of Trustees  
Kentucky Retirement Systems  
Perimeter Park West  
1260 Louisville Road  
Frankfort, KY 40601

**Re: GASB No. 74 Reporting – Actuarial Information – Kentucky Employees’ Retirement System**

Dear Members of the Board:

This report provided herein contains certain information for the Kentucky Employees’ Retirement System (KERS) in connection with the Governmental Accounting Standards Board (GASB) Statement No. 74, “Financial Reporting for Postemployment Benefit Plans Other than Pension Plans” for the fiscal year ending June 30, 2020. A separate report will be provided at a later date with additional accounting information determined in accordance with GASB Statement No. 75, “Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions”.

The liability calculations presented in this report were performed for the purpose of satisfying the requirements of GASB No. 74 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. GRS is not responsible for unauthorized use of this report.

The total OPEB liability, net OPEB liability, and sensitivity information shown in this report are based on an actuarial valuation date of June 30, 2019. The total OPEB liability was rolled-forward from the valuation date to the plan’s fiscal year ending June 30, 2020, using generally accepted actuarial principles. GASB No. 74 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.

The discount rate used to calculate the total OPEB liability decreased from 5.73% to 5.43% for the Non-Hazardous Fund and from 5.66% to 5.28% for the Hazardous Fund (see further discussion on the calculation of the single discount rate later in this letter). The assumed increase in future health care costs, or trend assumption, was reviewed during the June 30, 2019 valuation process and was updated to better reflect more current expectations relating to anticipated future increases in the medical costs. Also, the June 30, 2020 GASB No. 74 actuarial information reflects the anticipated savings from the repeal of the “Cadillac Tax” and “Health Insurer Fee”, which occurred in December of 2019. The assumed load on pre-Medicare premiums to reflect the cost of the Cadillac Tax was removed and the Medicare premiums were reduced by 11% to reflect the repeal of the Health Insurer Fee. There were no other material assumption changes and it is our opinion that these procedures are reasonable and appropriate, and comply with applicable requirements under GASB No. 74.

House Bill 1 passed during the 2019 Special Legislative Session and allowed certain agencies in the Non-Hazardous plan to elect to cease participating in the System as of June 30, 2020 under different provisions than were previously established. Senate Bill 249 passed during the 2020 Legislative Session and delayed the effective date of cessation for these provisions to June 30, 2021. Since each employer's election is unknown at this time, we did not make any adjustment to the Total OPEB Liability to reflect this legislation.

Senate Bill 249 also changed the funding period for the amortization of the unfunded liability to 30 years as of June 30, 2019. Gains and losses incurring in future years will be amortized over separate 20-year amortization bases. This change does not impact the calculation of the Total OPEB Liability and only impacts the calculation of the contribution rates that would be payable starting July 1, 2020. There were no other material plan provision changes and it is our opinion that these procedures are reasonable and appropriate, and comply with applicable requirements under GASB No. 74.

The fully-insured premiums KRS pays for the Kentucky Employees' Health Plan are blended rates based on the combined experience of active and retired members. Because the average cost of providing health care benefits to retirees under age 65 is higher than the average cost of providing health care benefits to active employees, there is an implicit employer subsidy for the non-Medicare eligible retirees. GASB No. 74 requires that the liability associated with this implicit subsidy be included in the calculation of the Total OPEB Liability.

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, 2019" for additional discussion of the nature of the actuarial calculations and more information related to participant data, economic and demographic assumptions, and benefit provisions. These reports should be considered together as a complete report for KRS's fiscal year ending June 30, 2020.

Single discount rates of 5.43% for the non-hazardous system and 5.28% for hazardous system were used to measure the total OPEB liability as of June 30, 2020. The single discount rates are based on the expected rate of return on OPEB plan investments of 6.25% and a municipal bond rate of 2.45%, as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of June 30, 2020. Based on the stated assumptions and the projection of cash flows as of each fiscal year ending, the plan's fiduciary net position and future contributions were projected to be sufficient to finance the future benefit payments of the current plan members. Therefore, the long-term expected rate of return on insurance plan investments was applied to all periods of the projected benefit payments paid from the retirement system. However, the cost associated with the implicit employer subsidy is not currently being included in the calculation of the System's actuarial determined contributions, and it is our understanding that any cost associated with the implicit subsidy will not be paid out of the System's trust. Therefore, the municipal bond rate was applied to future expected benefit payments associated with the implicit subsidy.

The projection of cash flows used to determine the single discount rate must include an assumption regarding actual employer contributions made each future year. Except where noted below, the future contributions are projected assuming that each participating employer in the System contribute the actuarially determined employer contribution rate each future year calculated in accordance with the current funding policy, as most recently revised by Senate Bill 249, passed during the 2020 Legislative Session.



If there is a pattern of legislation that has a resulting effect of employers making contributions less than the actuarially determined rate, we may be required to project contributions that are reflective of recent actual contribution efforts regardless of the stated funding policy (as required by paragraph 50 of GASB Statement No. 74). Legislation has been enacted three times (for FY 18/19, FY 19/20, and FY 20/21) that allowed certain employers (referred to as “Quasi” agencies) in the KERS Non-Hazardous Fund to contribute 8.41% of pay into the insurance fund, which is less than the actuarially determined contribution rate. We believe this constitutes a pattern and as such, the projection for the KERS Non-Hazardous Fund assumes these Quasi agencies contribute no more than 8.41% of pay throughout the entire projection.

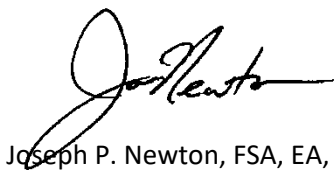
Based on guidance issued by GASB in connection with GASB Statement No. 74, the 1% of pay member contributions for Tier 2 and Tier 3 members to a 401(h) subaccount is considered as an OPEB asset. As a result, the reported fiduciary net position includes these 401(h) assets. Additionally, these member contributions and associated investment income are included in the reconciliation of the fiduciary net position.

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.

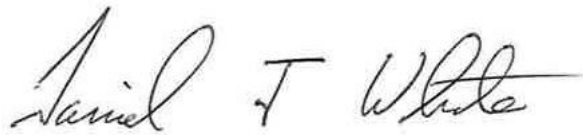
To the best of our knowledge, this report is complete and accurate and is in accordance with generally recognized actuarial practices and methods. Mr. Newton, Mr. White, and Mr. Riazi are Enrolled Actuaries. All of the undersigned are independent actuaries and consultants and members of the American 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 systems. This communication shall not be construed to provide tax advice, legal advice or investment advice.

Sincerely,

**Gabriel Roeder Smith & Co.**



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Pension Market Leader and Actuary



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**SECTION 1**

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## EXHIBIT 1a

### Schedule of the Employers' Net OPEB Liability – KERS Non-Hazardous Plan (\$ in thousands)

| Year | Total<br>OPEB<br>Liability<br>(1) | Plan Fiduciary<br>Net Position<br>(2) | Net OPEB<br>Liability/(Asset)<br>(3) = (1) - (2) | Plan Fiduciary<br>Net Position<br>as a Percentage<br>of the Total<br>OPEB Liability<br>(4) = (2) / (1) | Covered<br>Employee<br>Payroll <sup>1</sup><br>(5) | Net OPEB Liability<br>as a Percentage<br>of Covered<br>Employee Payroll<br>(6) = (3) / (5) |
|------|-----------------------------------|---------------------------------------|--|--|--|--|
| 2020 | \$ 3,599,557                      | \$ 1,060,649                          | \$ 2,538,908                                     | 29.47%   | \$ 1,482,431                                       | 171.27%  |
| 2019 | 3,217,985                         | 995,089                               | 2,222,896  | 30.92%   | 1,515,953  | 146.63%  |
| 2018 | 3,262,117                         | 891,205                               | 2,370,912  | 27.32%   | 1,573,898  | 150.64%  |
| 2017 | 3,353,332                         | 817,370                               | 2,535,962  | 24.37%   | 1,593,097  | 159.18%  |

Note:

<sup>1</sup> Based on derived compensation using the provided employer contribution information.



## EXHIBIT 1b

### Schedule of the Employers' Net OPEB Liability – KERS Hazardous Plan (\$ in thousands)

| Year | Total<br>OPEB<br>Liability<br>(1) | Plan Fiduciary<br>Net Position<br>(2) | Net OPEB<br>Liability/(Asset)<br>(3) = (1) - (2) | Plan Fiduciary<br>Net Position<br>as a Percentage<br>of the Total<br>OPEB Liability<br>(4) = (2) / (1) | Covered<br>Employee<br>Payroll <sup>1</sup><br>(5) | Net OPEB Liability<br>as a Percentage<br>of Covered<br>Employee Payroll<br>(6) = (3) / (5) |
|------|-----------------------------------|---------------------------------------|--|--|--|--|
| 2020 | \$ 564,524                        | \$ 521,755                            | \$ 42,769  | 92.42%   | \$ 182,209   | 23.47%   |
| 2019 | 507,204                           | 534,053                               | (26,849)   | 105.29%  | 151,448  | -17.73%  |
| 2018 | 485,904                           | 519,072                               | (33,168)   | 106.83%  | 190,317  | -17.43%  |
| 2017 | 494,869                           | 488,838                               | 6,031  | 98.78%   | 171,087  | 3.53%  |

Note:

<sup>1</sup> Based on derived compensation using the provided employer contribution information.





## EXHIBIT 2

### Development of Single Discount Rate

|  | <u>KERS<br/>Non-Hazardous</u> | <u>KERS<br/>Hazardous</u> |
|--|-------------------------------|---------------------------|
| Single Discount Rate                       | 5.43%                         | 5.28%                     |
| Long-Term Expected Rate of Return          | 6.25%                         | 6.25%                     |
| Long-Term Municipal Bond Rate <sup>1</sup> | 2.45%                         | 2.45%                     |

Notes:

<sup>1</sup> Fixed-income municipal bonds with 20 years to maturity that include only federally tax-exempt municipal bonds as reported in Fidelity Index's "20-Year Municipal GO AA Index" as of June 30, 2020.

## EXHIBIT 3a

### Schedule of the Employers' Net OPEB Liability – KERS Non-Hazardous Plan

(\$ in thousands)

| Change in the Net OPEB Liability   | 2020                | 2019                  | 2018                   | 2017                |
|--|---------------------|-----------------------|------------------------|---------------------|
| <b>Total OPEB liability</b>  |                     |                       |                        |                     |
| Service Cost   | \$ 59,600           | \$ 61,345             | \$ 66,360              | \$ 46,992           |
| Interest on the total OPEB liability   | 179,811             | 186,820               | 191,178                | 192,911             |
| Benefit Changes  | 0                   | 0                     | 1,865                  | 0                   |
| Difference between actual and expected experience                              | 288,235             | (302,189)             | (191,147)              | (3,921)             |
| Assumption Changes   | 13,767              | 158,004               | (11,235)               | 414,835             |
| Benefit Payments <sup>1</sup>  | <u>(159,841)</u>    | <u>(148,112)</u>      | <u>(148,236)</u>       | <u>(139,601)</u>    |
| <b>Net Change in Total OPEB Liability</b>                                      | 381,572             | (44,132)              | (91,215)               | 511,216             |
| <b>Total OPEB Liability - Beginning</b>  | <u>\$ 3,217,985</u> | <u>\$ 3,262,117</u>   | <u>\$ 3,353,332</u>    | <u>\$ 2,842,116</u> |
| <b>Total OPEB Liability - Ending (a)</b>                                       | <u>\$ 3,599,557</u> | <u>\$ 3,217,985</u>   | <u>\$ 3,262,117</u>    | <u>\$ 3,353,332</u> |
| <b>Plan Fiduciary Net Position</b>   |                     |                       |                        |                     |
| Contributions - Employer <sup>2</sup>  | \$ 208,300          | \$ 201,155            | \$ 152,985             | \$ 162,636          |
| Contributions - Member   | 6,128               | 5,963                 | 5,786                  | 5,156               |
| Benefit Payments <sup>1</sup>  | (159,841)           | (148,112)             | (148,236)              | (139,601)           |
| OPEB Plan Net Investment Income  | 11,820              | 45,749                | 64,028                 | 94,239              |
| OPEB Plan Administrative Expense   | (847)               | (875)                 | (760)                  | (861)               |
| Other  | <u>0</u>            | <u>4</u> <sup>4</sup> | <u>32</u> <sup>4</sup> | <u>0</u>            |
| <b>Net Change in Plan Fiduciary Net Position</b>                               | 65,560              | 103,884               | 73,835                 | 121,569             |
| <b>Plan Fiduciary Net Position - Beginning</b>                                 | <u>\$ 995,089</u>   | <u>\$ 891,205</u>     | <u>\$ 817,370</u>      | <u>\$ 695,801</u>   |
| <b>Plan Fiduciary Net Position - Ending (b)</b>                                | <u>\$ 1,060,649</u> | <u>\$ 995,089</u>     | <u>\$ 891,205</u>      | <u>\$ 817,370</u>   |
| <b>Net OPEB Liability - Ending (a) - (b)</b>                                   | <b>2,538,908</b>    | <b>2,222,896</b>      | <b>2,370,912</b>       | <b>2,535,962</b>    |
| <b>Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability</b> | 29.47%              | 30.92%                | 27.32%                 | 24.37%              |
| <b>Covered Employee Payroll<sup>3</sup></b>                                    | \$ 1,482,431        | \$ 1,515,953          | \$ 1,573,898           | \$ 1,593,097        |
| <b>Net OPEB Liability as a Percentage of Covered Employee Payroll</b>          | 171.27%             | 146.63%               | 150.64%                | 159.18%             |

Notes:

<sup>1</sup> Benefit payments include expected benefits due to the implicit subsidy for members under age 65. They are also offset by insurance premiums received from retirees, Medicare Drug Reimbursements, and Humana Gain Share Payments (in applicable years).

<sup>2</sup> Employer contributions include expected benefits due to the implicit subsidy for members under age 65.

<sup>3</sup> Based on derived compensation using the provided employer contribution information.

<sup>4</sup> Northern Trust Settlement



## EXHIBIT 3b

### Schedule of the Employers' Net OPEB Liability – KERS Hazardous Plan (\$ in thousands)

| Change in the Net OPEB Liability   | 2020              | 2019                  | 2018                   | 2017              |
|--|-------------------|-----------------------|------------------------|-------------------|
| <b>Total OPEB liability</b>  |                   |                       |                        |                   |
| Service Cost   | \$ 11,548         | \$ 12,337             | \$ 12,893              | \$ 8,002          |
| Interest on the total OPEB liability   | 28,101            | 27,990                | 28,500                 | 27,591            |
| Benefit Changes  | 0                 | 0                     | 167                    | 0                 |
| Difference between actual and expected experience                              | 27,668            | (30,947)              | (31,240)               | (1,029)           |
| Assumption Changes   | 11,428            | 31,687                | (581)                  | 89,401            |
| Benefit Payments <sup>1</sup>  | <u>(21,425)</u>   | <u>(19,767)</u>       | <u>(18,704)</u>        | <u>(16,618)</u>   |
| <b>Net Change in Total OPEB Liability</b>                                      | 57,320            | 21,300                | (8,965)                | 107,347           |
| <b>Total OPEB Liability - Beginning</b>  | <u>\$ 507,204</u> | <u>\$ 485,904</u>     | <u>\$ 494,869</u>      | <u>\$ 387,522</u> |
| <b>Total OPEB Liability - Ending (a)</b>                                       | <u>\$ 564,524</u> | <u>\$ 507,204</u>     | <u>\$ 485,904</u>      | <u>\$ 494,869</u> |
| <b>Plan Fiduciary Net Position</b>   |                   |                       |                        |                   |
| Contributions - Employer <sup>2</sup>  | \$ 7,441          | \$ 5,556              | \$ 5,165               | \$ 4,579          |
| Contributions - Member   | 1,105             | 934                   | 909                    | 811               |
| Benefit Payments <sup>1</sup>  | (21,425)          | (19,767)              | (18,704)               | (16,618)          |
| OPEB Plan Net Investment Income  | 704               | 28,373                | 42,950                 | 59,614            |
| OPEB Plan Administrative Expense   | (123)             | (117)                 | (104)                  | (105)             |
| Other  | <u>0</u>          | <u>2</u> <sup>4</sup> | <u>18</u> <sup>4</sup> | <u>0</u>          |
| <b>Net Change in Plan Fiduciary Net Position</b>                               | (12,298)          | 14,981                | 30,234                 | 48,281            |
| <b>Plan Fiduciary Net Position - Beginning</b>                                 | <u>\$ 534,053</u> | <u>\$ 519,072</u>     | <u>\$ 488,838</u>      | <u>\$ 440,557</u> |
| <b>Plan Fiduciary Net Position - Ending (b)</b>                                | <u>\$ 521,755</u> | <u>\$ 534,053</u>     | <u>\$ 519,072</u>      | <u>\$ 488,838</u> |
| <b>Net OPEB Liability - Ending (a) - (b)</b>                                   | 42,769            | (26,849)              | (33,168)               | 6,031             |
| <b>Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability</b> | 92.42%            | 105.29%               | 106.83%                | 98.78%            |
| <b>Covered Employee Payroll<sup>3</sup></b>                                    | \$ 182,209        | \$ 151,448            | \$ 190,317             | \$ 171,087        |
| <b>Net OPEB Liability as a Percentage of Covered Employee Payroll</b>          | 23.47%            | -17.73%               | -17.43%                | 3.53%             |

Notes:

<sup>1</sup> Benefit payments include expected benefits due to the implicit subsidy for members under age 65. They are also offset by insurance premiums received from retirees, Medicare Drug Reimbursements, and Humana Gain Share Payments (in applicable years).

<sup>2</sup> Employer contributions include expected benefits due to the implicit subsidy for members under age 65.

<sup>3</sup> Based on derived compensation using the provided employer contribution information.

<sup>4</sup> Northern Trust Settlement



## EXHIBIT 4a

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

| Fiscal<br>Year<br>Ending <sup>1</sup> | Actuarially<br>Determined<br>Contribution <sup>2</sup> | Total Employer<br>Contributions <sup>3</sup> | Contribution<br>Deficiency<br>(Excess) | Covered<br>Employee<br>Payroll <sup>4</sup> | Actual<br>Contributions<br>as a Percentage<br>of Covered<br>Payroll |
|---------------------------------------|--|--|--|---|---|
| 2020                                  | \$ 183,821   | \$ 175,006                                   | \$ 8,815                               | \$ 1,482,431                                | 11.81%  |
| 2019                                  | 187,978  | 178,964                                      | 9,014                                  | 1,515,953                                   | 11.81%  |
| 2018                                  | 132,365  | 136,419                                      | (4,054)                                | 1,573,898                                   | 8.67%   |
| 2017                                  | 133,024  | 152,356                                      | (19,332)                               | 1,593,097                                   | 9.56%   |
| 2016                                  | 121,899  | 135,816                                      | (13,917)                               | 1,529,249                                   | 8.88%   |
| 2015                                  | 130,455  | 135,940                                      | (5,485)                                | 1,544,234                                   | 8.80%   |
| 2014                                  | 208,881  | 166,610                                      | 42,271                                 | 1,577,496                                   | 10.56%  |
| 2013                                  | 286,143  | 165,331                                      | 120,812                                | 1,644,409                                   | 10.05%  |
| 2012                                  | 297,904  | 156,057                                      | 141,847                                | 1,644,897                                   | 9.49%   |
| 2011                                  | 294,898  | 129,336                                      | 165,562                                | 1,731,633                                   | 7.47%   |

Notes:

<sup>1</sup> Data for years prior to 2018 is based on contribution data provided in the 2017 CAFR, based on calculations provided by the prior actuary.

<sup>2</sup> Actuarially determined contribution for fiscal year ending 2020 is based on the contribution rate calculated with the June 30, 2017 actuarial valuation.

<sup>3</sup> Employer contributions do not include the expected implicit subsidy included in exhibit 3.

<sup>4</sup> Based on derived compensation using the provided employer contribution information.



## EXHIBIT 4b

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

| Fiscal<br>Year<br>Ending <sup>1</sup> | Actuarially<br>Determined<br>Contribution <sup>2</sup> | Total Employer<br>Contributions <sup>3</sup> | Contribution<br>Deficiency<br>(Excess) | Covered<br>Employee<br>Payroll <sup>4</sup> | Actual<br>Contributions<br>as a Percentage<br>of Covered<br>Payroll |
|---------------------------------------|--|--|--|---|---|
| 2020                                  | \$ 4,482   | \$ 5,776                                     | \$ (1,294)                             | \$ 182,209                                  | 3.17%   |
| 2019                                  | 3,726  | 4,970  | (1,244)                                | 151,448                                     | 3.28%   |
| 2018                                  | 2,550  | 5,288  | (2,738)                                | 190,317                                     | 2.78%   |
| 2017                                  | 4,688  | 5,620  | (932)                                  | 171,087                                     | 3.28%   |
| 2016                                  | 9,186  | 16,766                                       | (7,580)                                | 147,563                                     | 11.36%  |
| 2015                                  | 13,152   | 14,882                                       | (1,730)                                | 128,680                                     | 11.57%  |
| 2014                                  | 15,627   | 23,874                                       | (8,247)                                | 129,076                                     | 18.50%  |
| 2013                                  | 26,253   | 25,682                                       | 571                                    | 132,015                                     | 19.45%  |
| 2012                                  | 28,326   | 24,538                                       | 3,788                                  | 131,977                                     | 18.59%  |
| 2011                                  | 29,585   | 19,953                                       | 9,632                                  | 133,054                                     | 15.00%  |

Notes:

<sup>1</sup> Data for years prior to 2018 is based on contribution data provided in the 2017 CAFR, based on calculations provided by the prior actuary.

<sup>2</sup> Actuarially determined contribution for fiscal year ending 2020 is based on the contribution rate calculated with the June 30, 2017 actuarial valuation.

<sup>3</sup> Employer contributions do not include the expected implicit subsidy included in exhibit 3.

<sup>4</sup> Based on derived compensation using the provided employer contribution information.



## Notes to Schedule of Employers' Contributions for FYE 2020

The actuarially determined contribution rates effective for fiscal year ending 2020 that are documented in the schedule on the previous pages were calculated as of June 30, 2017. Based on the June 30, 2017 actuarial valuation report, the actuarial methods and assumptions used to calculate these contribution rates are below:

| Item  | KERS Non-Hazardous  | KERS Hazardous  |
|---|---|---|
| Determine by the Actuarial Valuation as of: | June 30, 2017   | June 30, 2017   |
| 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:                        | 26 Years, Closed  | 26 Years, Closed  |
| Payroll Growth Rate:                        | 0.00%   | 0.00%   |
| Investment Return:                          | 6.25%   | 6.25%   |
| Inflation:                                  | 2.30%   | 2.30%   |
| Salary Increases:                           | 3.55% to 15.55%, varies by service  | 3.55% to 19.55%, varies by service  |
| 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)   |
| Healthcare Trend Rates:                     |   |   |
| Pre-65                                      | Initial trend starting at 7.25% at January 1, 2019 and gradually decreasing to an ultimate trend rate of 4.05% over a period of 13 years. The 2018 premiums were known at the time of the valuation and were incorporated into the liability measurement. | Initial trend starting at 7.25% at January 1, 2019 and gradually decreasing to an ultimate trend rate of 4.05% over a period of 13 years. The 2018 premiums were known at the time of the valuation and were incorporated into the liability measurement. |
| Post-65                                     | Initial trend starting at 5.10% at January 1, 2019 and gradually decreasing to an ultimate trend rate of 4.05% over a period of 11 years. The 2018 premiums were known at the time of the valuation and were incorporated into the liability measurement. | Initial trend starting at 5.10% at January 1, 2019 and gradually decreasing to an ultimate trend rate of 4.05% over a period of 11 years. The 2018 premiums were known at the time of the valuation and were incorporated into the liability measurement. |



## EXHIBIT 5a

### Sensitivity of the Net OPEB Liability to Changes in the Discount Rate and Healthcare Trend Rate KERS Non-Hazardous Plan (\$ in thousands)

**Table 1. Sensitivity of the Net OPEB Liability to Changes in the Discount Rate**

| 1.00%<br>Decrease,<br>4.43% | Current<br>Discount Rate,<br>5.43% | 1.00%<br>Increase,<br>6.43% |
|-----------------------------|------------------------------------|-----------------------------|
| \$ 3,026,103                | \$ 2,538,908                       | \$ 2,139,021                |

**Table 2. Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rate**

| 1.00%<br>Decrease | Current Healthcare<br>Cost Trend Rate | 1.00%<br>Increase |
|-------------------|---------------------------------------|-------------------|
| \$ 2,136,914      | \$ 2,538,908                          | \$ 3,025,819      |

## EXHIBIT 5b

### Sensitivity of the Net OPEB Liability to Changes in the Discount Rate and Healthcare Trend Rate KERS Hazardous Plan (\$ in thousands)

**Table 1. Sensitivity of the Net OPEB Liability to Changes in the Discount Rate**

| 1.00%<br>Decrease,<br>4.28% | Current<br>Discount Rate,<br>5.28% | 1.00%<br>Increase,<br>6.28% |
|-----------------------------|------------------------------------|-----------------------------|
| \$ 126,165                  | \$ 42,769                          | \$ (24,330)                 |

**Table 2. Sensitivity of the Net OPEB Liability to Changes in the Healthcare Cost Trend Rate**

| 1.00%<br>Decrease | Current Healthcare<br>Cost Trend Rate | 1.00%<br>Increase |
|-------------------|---------------------------------------|-------------------|
| \$ (20,042)       | \$ 42,769                             | \$ 119,675        |



# APPENDIX 1

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# Appendix 1

## Development of Baseline Claims Cost

For non-Medicare retirees, the initial per capita costs were developed using retiree claims experience for calendar year 2019. The claims were projected on an incurred claim basis, adjusted for prescription drug rebates, and loaded for administrative expense. The per capita costs shown in the table below also include HRA contributions for retirees on the CDHP plans. An inherent assumption in this methodology is that the projected future retirees will have a similar distribution by plan type as the current retirees. The fully-insured premiums KRS pays the Kentucky Employees' Health Plan are blended rates based on the combined experience of active and retired members. Because the average cost of providing health care benefits to retirees under age 65 is higher than the average cost of providing health care benefits to active employees, there is an implicit employer subsidy for the non-Medicare eligible retirees.

For Medicare retirees, the initial per capita costs were estimated based on the plan premiums effective January 1, 2020, and are used for both current and future retirees. An inherent assumption in this methodology is that the projected future retirees will have a similar distribution by plan type as the current retirees.

Age graded and sex distinct premiums are utilized by this valuation. These costs are appropriate for the unique age and sex distribution currently existing. Over the future years covered by this valuation, the age and sex distribution will most likely change. Therefore, our process "distributes" the average premium over all age/sex combinations and assigns a unique premium for each combination. The age/sex specific costs more accurately reflect the health care utilization and cost at that age.

| FOR THOSE NOT ELIGIBLE FOR MEDICARE |          |          |
|-------------------------------------|----------|----------|
| AGE                                 | MALE     | FEMALE   |
| 40                                  | \$337.39 | \$548.24 |
| 50                                  | 546.91   | 673.74   |
| 60                                  | 929.50   | 915.24   |
| 64                                  | 1,130.30 | 1,066.69 |

| FOR THOSE ELIGIBLE FOR MEDICARE |          |          |
|---------------------------------|----------|----------|
| AGE                             | MALE     | FEMALE   |
| 65                              | \$186.68 | \$176.08 |
| 75                              | 218.42   | 213.13   |
| 85                              | 230.96   | 233.68   |

Mehdi Riazi is a Member of the American Academy of Actuaries (MAAA) and meets the Qualification Standards of the American Academy of Actuaries to render the actuarial opinions contained herein.



Mehdi Riazi, FSA, EA, MAAA