

Kentucky Public Pensions Authority

GASB No. 74 Accounting Valuation Report

As of June 30, 2021





December 2, 2021
Board of Trustees
Kentucky Retirement System
County Employees Retirement System
Perimeter Park West
1260 Louisville Road
Frankfort, KY 40601

Re: GASB No. 74 Reporting – Actuarial Information

Dear Members of the Board:

This report provided herein contains certain information for the Insurance Plan for members in the County Employees Retirement System (CERS), the Kentucky Employees Retirement System (KERS), and the State Police Retirement System (SPRS) 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, 2021. 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 plan’s 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 System and the Board of Trustees of the County Employees Retirement System only in its entirety and only with the permission of the Boards. 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, 2020. The total OPEB liability was rolled-forward from the valuation date to the plan’s fiscal year ending June 30, 2021, using generally accepted actuarial principles. This information was determined separately for each fund (CERS Non-Hazardous fund, CERS Hazardous fund, KERS Non-Hazardous fund, KERS Hazardous fund, and SPRS) before being aggregated together. GASB No. 74 requires the disclosure of a 10-year history of certain information in the Required Supplementary Information within the 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 the prior actuary.

Actuarial Assumptions

The single discount rates used to calculate the total OPEB liability within each fund changed since the prior year. See further discussion on the calculation of the single discount rates later in this letter. The assumed increase in future health care costs, or trend assumption, was reviewed during the June 30, 2020 valuation process and was updated to better reflect the plan’s anticipated long-term healthcare cost increases. In general, the updated assumption is assuming higher future increases in healthcare costs. 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.

Plan Provisions

Senate Bill 169 passed during the 2021 legislative session and increased the disability benefits for certain qualifying members who become “totally and permanently disabled” in the line of duty or as a result of a duty-related disability. The total OPEB liability as of June 30, 2021 is determined using these updated benefit provisions.

Additionally, House Bill 8 passed during the 2021 legislative session and changed how employer contributions are allocated and collected from the participating employers in the KERS Non-Hazardous fund. This change does not impact the calculation of the total OPEB liability and only impacts the allocation of required contributions amongst the participating employers.

Further, House Bill 1 passed during the 2019 special legislative session and allowed certain agencies in the KERS Non-Hazardous fund to elect to cease participating in the KERS Non-Hazardous fund 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. Only one employer elected to cease participation under these provisions and freeze benefit accruals for their current employees. As such, there is no material impact on the total OPEB liability due to this legislation. 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.

Implicit Employer Subsidy for non-Medicare retirees

The fully-insured premiums paid 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.

Single Discount Rate

In accordance with paragraph 48 of GASB Statement No. 74, a single discount rate of 5.18% was used for the reporting and disclosure of the insurance plan. Note, this is the equivalent discount rate that produces the same total OPEB liability as the individual single discount rate assumptions used by each individual fund to measure the total OPEB liability for the fiscal year ending June 30, 2021. The single discount rates for each individual fund are provided in Exhibit 1 of this report and are based on the expected rate of return on OPEB plan investments of 6.25% and a municipal bond rate of 1.92%, as reported in Fidelity Index’s “20-Year Municipal GO AA Index” as of June 30, 2021.

Separate contribution rates are determined and separate assets are maintained for each fund. Based on the stated assumptions and the projection of cash flows as of each fiscal year ending, each fund’s fiduciary net position and future contributions were projected separately and were 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 fund. However, the cost associated with the implicit employer subsidy is not currently being included in the calculation of the



fund's actuarially determined contributions, and it is our understanding that any cost associated with the implicit subsidy will not be paid out of the fund'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. Future contributions are projected assuming that each participating employer in each insurance fund contributes the actuarially determined employer contribution each future year calculated in accordance with the current funding policy, as most recently revised by House Bill 8, passed during the 2021 legislative session. The assumed future employer contributions for the CERS funds reflect the provisions of House Bill 362 (passed during the 2018 legislative session) which limit the increases to the employer contribution rates to 12% over the prior fiscal year through June 30, 2028.

If there is a future 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).

401(h) Subaccount

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 an OPEB asset. As a result, the reported fiduciary net position includes these 401(h) assets. Additionally, these member contributions and associated investment income and administrative expenses are included in the reconciliation of the fiduciary net position.

Additional Disclosures

This report is based upon information, furnished to us by the Kentucky Public Pensions Authority (KPPA), 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 KPPA. Please see the "Actuarial Valuation Report as of June 30, 2020" 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 fiscal year ending June 30, 2021.

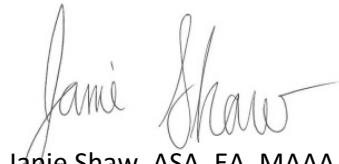
Future actuarial measurements may differ significantly from the current measurements presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; increases or decreases expected as part of the natural operation of the methodology used for these measurements; and changes in plan provisions or applicable law.



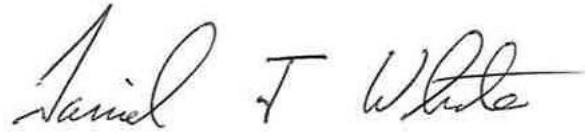
To the best of our knowledge, this report is complete and accurate and is in accordance with generally recognized actuarial practices and methods. All of the undersigned are Enrolled Actuaries, members of the American Academy of Actuaries and meet all of the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion herein. In addition, all are independent of KPPA and are 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 & Company



Jamie Shaw, ASA, EA, MAAA
Consultant and Actuary



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



Mehdi Riazzi, FSA, EA, FCA, MAAA
Senior Consultant and Actuary

Table of Contents

			Page
	COVER LETTER		
SECTION 1	SUPPORTING EXHIBITS		
	EXHIBIT 1	— DEVELOPMENT OF THE SINGLE DISCOUNT RATE	2
	EXHIBIT 2	— SCHEDULE OF EMPLOYERS' NET OPEB LIABILITY	3
	EXHIBIT 3	— SCHEDULE OF CHANGES IN EMPLOYERS' NET OPEB LIABILITY	4
	EXHIBIT 4	— SCHEDULE OF EMPLOYERS' CONTRIBUTIONS	5
	EXHIBIT 5	— SENSITIVITY OF THE NET OPEB LIABILITY TO CHANGES IN THE DISCOUNT RATE AND HEALTHCARE TREND RATE	7
APPENDIX A	DEVELOPMENT OF BASELINE CLAIMS COST		9
APPENDIX B	SUPPORTING EXHIBITS FOR INDIVIDUAL FUNDS		11

SECTION 1

EXHIBIT 1

Development of Single Discount Rate

	<u>Insurance Plan</u>	<u>CERS Non-Hazardous</u>	<u>CERS Hazardous</u>	<u>KERS Non-Hazardous</u>	<u>KERS Hazardous</u>	<u>SPRS</u>
Single Discount Rate	5.18% ¹	5.20%	5.05%	5.26%	5.01%	5.20%
Long-Term Expected Rate of Return		6.25%	6.25%	6.25%	6.25%	6.25%
Long-Term Municipal Bond Rate ²		1.92%	1.92%	1.92%	1.92%	1.92%

Note:

¹ In accordance with paragraph 48 of GASB Statement No. 74, a single discount rate was used for the reporting and disclosure of the insurance plan. Note, this is the equivalent discount rate that produces the same total OPEB liability as the discount rates used by each individual fund to measure the total OPEB liability for the fiscal year ending June 30, 2021. The single discount rates for each fund are blended rates based on the expected rate of return on OPEB plan investments of 6.25% and a municipal bond rate of 1.92%.

² 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, 2021.



EXHIBIT 2

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

Year	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability/(Asset)	Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	Covered Employee Payroll ¹	Net OPEB Liability as a Percentage of Covered Employee Payroll
(1)	(2)	(3)	(4) = (2) - (3)	(5) = (3) / (2)	(6)	(7) = (4) / (6)
2021	\$ 12,283,489	\$ 7,175,097	\$ 5,108,392	58.41%	\$ 4,905,905	104.13%
2020	11,745,554	5,686,474	6,059,080	48.41%	4,929,457	122.92%
2019	10,369,782	5,640,573	4,729,209	54.39%	4,877,191	96.97%
2018	10,232,580	5,296,232	4,936,348	51.76%	4,972,961	99.26%
2017	10,399,986	4,886,583	5,513,403	46.99%	4,835,897	114.01%

Note:

¹ Based on derived compensation using the provided employer contribution information. For 2021, derived compensation for KERS Hazardous fund based on pension contribution information, as there were no required employer contributions for the insurance fund for FYE2021.



EXHIBIT 3

Schedule of Changes in the Employers' Net OPEB Liability

(\$ in thousands)

Change in the Net OPEB Liability	2021	2020	2019	2018	2017
Total OPEB liability					
Service Cost	\$ 258,502	\$ 255,269	\$ 230,132	\$ 241,532	\$ 165,102
Interest on the total OPEB liability	617,700	577,636	589,654	598,167	592,515
Benefit Changes	6,036	0	0	6,856	0
Difference between actual and expected experience	(633,119)	873,712	(855,049)	(586,623)	(14,634)
Assumption Changes	726,071	136,923	591,634	(19,550)	1,472,895
Benefit Payments ¹	(437,255)	(467,768)	(419,169)	(407,788)	(372,118)
Net Change in Total OPEB Liability	537,935	1,375,772	137,202	(167,406)	1,843,760
Total OPEB Liability - Beginning	\$ 11,745,554	\$ 10,369,782	\$ 10,232,580	\$ 10,399,986	\$ 8,556,226
Total OPEB Liability - Ending (a)	\$ 12,283,489	\$ 11,745,554	\$ 10,369,782	\$ 10,232,580	\$ 10,399,986
Plan Fiduciary Net Position					
Contributions - Employer ²	\$ 486,616 ⁵	\$ 467,797	\$ 448,684	\$ 364,109	\$ 352,728
Contributions - Member	24,405	23,155	21,332	19,848	16,964
Benefit Payments ¹	(437,255)	(467,768)	(419,169)	(407,788)	(372,118)
OPEB Plan Net Investment Income	1,417,333	25,123	295,845	435,370	584,154
OPEB Plan Administrative Expense	(2,476)	(2,406)	(2,372)	(2,063)	(2,202)
Other	0	0	21 ⁴	173 ⁴	0
Net Change in Plan Fiduciary Net Position	1,488,623	45,901	344,341	409,649	579,526
Plan Fiduciary Net Position - Beginning	\$ 5,686,474	\$ 5,640,573	\$ 5,296,232	\$ 4,886,583	\$ 4,307,057
Plan Fiduciary Net Position - Ending (b)	\$ 7,175,097	\$ 5,686,474	\$ 5,640,573	\$ 5,296,232	\$ 4,886,583
Net OPEB Liability - Ending (a) - (b)	5,108,392	6,059,080	4,729,209	4,936,348	5,513,403
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	58.41%	48.41%	54.39%	51.76%	46.99%
Covered Employee Payroll³	\$ 4,905,905	\$ 4,929,457	\$ 4,877,191	\$ 4,972,961	\$ 4,835,897
Net OPEB Liability as a Percentage of Covered Employee Payroll	104.13%	122.92%	96.97%	99.26%	114.01%

Notes:

¹ 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).

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

³ Based on derived compensation using the provided employer contribution information.

⁴ Northern Trust Settlement.

⁵ Includes \$28.4 million employer cessation contribution for KERS Non-Hazardous fund.



EXHIBIT 4
Schedule of Employers' Contributions
(\$ in thousands)

Fiscal Year Ending ¹	Actuarially Determined Contribution ²	Total Employer Contributions ³	Contribution Deficiency (Excess)	Covered Employee Payroll ⁴	Actual Contributions as a Percentage of Covered Payroll
2021	\$ 374,009	\$ 386,963	\$ (12,954)	\$ 4,905,905	7.89%
2020	382,915	381,080	1,835	4,929,457	7.73%
2019	436,070	399,149	36,921	4,877,191	8.18%
2018	319,801	331,725	(11,924)	4,972,961	6.67%
2017	322,335	339,447	(17,112)	4,835,897	7.02%
2016	314,878	342,274	(27,396)	4,567,976	7.49%
2015	342,111	352,426	(10,315)	4,499,036	7.83%
2014	450,399	403,047	47,352	4,502,623	8.95%
2013	637,202	453,154	184,048	4,519,630	10.03%
2012	679,661	457,044	222,617	4,526,021	10.10%

Notes:

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

² Actuarially determined contribution for fiscal year ending 2021 is based on the contribution rates calculated with the June 30, 2019 actuarial valuation, as amended by SB249 (2020 legislative session) which reset the amortization period to 30 years. Separate contribution rates are determined for each fund.

³ Employer contributions do not include the expected implicit subsidy included in exhibit 3.

⁴ Based on derived compensation using the provided employer contribution information.

Notes to Schedule of Employers' Contributions for FYE 2021

The actuarially determined contribution effective for fiscal year ending 2021 that is documented in the schedule on the previous page was calculated as of June 30, 2019. Separate contribution rates are determined for each fund based on the liabilities associated with the current active members, former inactive members, and members receiving benefits from each respective fund, as well as the separately maintained asset balances for each fund.

Based on the June 30, 2019 actuarial valuation report (as amended by SB249, passed during the 2020 legislative session), the actuarial methods and assumptions used to calculate the required contributions are below:

Determined by the Actuarial Valuation as of:	June 30, 2019
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:	30-year closed period at June 30, 2019 <i>Gains/losses incurring after 2019 will be amortized over separate closed 20-year amortization bases</i>
Payroll Growth Rate:	2.00% for CERS funds 0.00% for KERS and SPRS funds
Investment Return:	6.25%
Inflation:	2.30%
Salary Increases:	3.30% to 10.30% for CERS non-hazardous members, varies by service 3.55% to 19.05% for CERS hazardous members, varies by service 3.30% to 15.30% for KERS non-hazardous members, varies by service 3.55% to 20.05% for KERS hazardous members, varies by service 3.55% to 16.05% for SPRS members, varies by service
Mortality:	System-specific mortality table based on mortality experience from 2013-2018, projected with the ultimate rates from MP-2014 mortality improvement scale using a base year of 2019.
Healthcare Trend Rates: Pre-65	Initial trend starting at 6.25% at January 1, 2021 and gradually decreasing to an ultimate trend rate of 4.05% over a period of 13 years. The 2020 premiums were known at the time of the valuation and were incorporated into the liability measurement.
Post-65	Initial trend starting at 5.50% at January 1, 2021 and gradually decreasing to an ultimate trend rate of 4.05% over a period of 14 years. The 2020 premiums were known at the time of the valuation and were incorporated into the liability measurement.
CERS Phase-in Provisions:	Board certified rate is phased into the actuarially determined rate in accordance with HB 362 enacted in 2018

EXHIBIT 5

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

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

1.00% Decrease	Current Discount Rate	1.00% Increase
\$ 6,836,824	\$ 5,108,392	\$ 3,699,038

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

1.00% Decrease	Current Healthcare Cost Trend Rate	1.00% Increase
\$ 3,787,512	\$ 5,108,392	\$ 6,708,061

APPENDIX A

Development of Baseline Claims Cost

Due to the impact of the COVID-19 pandemic on claims experience for calendar year 2020, the initial per capita costs were developed using retiree claims experience for calendar year 2019 for non-Medicare retirees. 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 paid to 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.

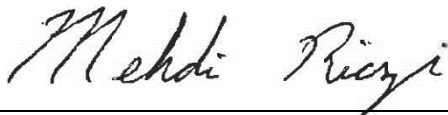
For Medicare retirees, the initial per capita costs were estimated based on the plan premiums effective January 1, 2021, and are used for both current and future retirees. An inherent assumption in this methodology is that the projected future retirees will have a similar distribution by plan type as 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	\$352.83	\$573.33
50	571.94	704.58
60	972.04	957.12
64	1,182.02	1,115.51

FOR THOSE ELIGIBLE FOR MEDICARE		
AGE	MALE	FEMALE
65	\$184.81	\$174.31
75	216.22	210.98
85	228.64	231.33

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, FCA, MAAA

APPENDIX B

EXHIBIT 1a

Schedule of the Employers' Net OPEB Liability – CERS Non-Hazardous Fund (\$ in thousands)

Year	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability/(Asset)	Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	Covered Employee Payroll ¹	Net OPEB Liability as a Percentage of Covered Employee Payroll
(1)	(2)	(3)	(4) = (2) - (3)	(5) = (3) / (2)	(6)	(7) = (4) / (6)
2021	\$ 5,161,251	\$ 3,246,801	\$ 1,914,450	62.91%	\$ 2,619,695	73.08%
2020	4,996,309	2,581,613	2,414,696	51.67%	2,620,585	92.14%
2019	4,251,466	2,569,511	1,681,955	60.44%	2,577,378	65.26%
2018	4,189,606	2,414,126	1,775,480	57.62%	2,570,156	69.08%
2017	4,222,878	2,212,536	2,010,342	52.39%	2,480,130	81.06%

Note:

¹ Based on derived compensation using the provided employer contribution information.



EXHIBIT 1b

Schedule of the Employers' Net OPEB Liability – CERS Hazardous Fund (\$ in thousands)

Year	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability/(Asset)	Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	Covered Employee Payroll ¹	Net OPEB Liability as a Percentage of Covered Employee Payroll
(1)	(2)	(3)	(4) = (2) - (3)	(5) = (3) / (2)	(6)	(7) = (4) / (6)
2021	\$ 2,436,383	\$ 1,627,824	\$ 808,559	66.81%	\$ 613,985	131.69%
2020	2,245,222	1,321,117	924,105	58.84%	596,001	155.05%
2019	2,080,574	1,340,714	739,860	64.44%	583,632	126.77%
2018	1,993,941	1,280,982	712,959	64.24%	588,526	121.14%
2017	2,015,673	1,189,001	826,672	58.99%	542,710	152.32%

Note:

¹ Based on derived compensation using the provided employer contribution information.



EXHIBIT 1c

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

Year	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability/(Asset)	Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	Covered Employee Payroll ¹	Net OPEB Liability as a Percentage of Covered Employee Payroll
(1)	(2)	(3)	(4) = (2) - (3)	(5) = (3) / (2)	(6)	(7) = (4) / (6)
2021	\$ 3,698,804	\$ 1,419,477	\$ 2,279,327	38.38%	\$ 1,452,345	156.94%
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:

¹ Based on derived compensation using the provided employer contribution information.



EXHIBIT 1d

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

Year	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability/(Asset)	Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	Covered Employee Payroll ¹	Net OPEB Liability as a Percentage of Covered Employee Payroll
(1)	(2)	(3)	(4) = (2) - (3)	(5) = (3) / (2)	(6)	(7) = (4) / (6)
2021	\$ 622,152	\$ 633,677	\$ (11,525)	101.85%	\$ 172,725	-6.67%
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:

¹ Based on derived compensation using the provided employer contribution information. For 2021, derived compensation based on pension contribution information, as there were no required employer contributions for the insurance fund for FYE2021.



EXHIBIT 1e

Schedule of the Employers' Net OPEB Liability – SPRS Fund (\$ in thousands)

Year	Total OPEB Liability	Plan Fiduciary Net Position	Net OPEB Liability/(Asset)	Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	Covered Employee Payroll ¹	Net OPEB Liability as a Percentage of Covered Employee Payroll
(1)	(2)	(3)	(4) = (2) - (3)	(5) = (3) / (2)	(6)	(7) = (4) / (6)
2021	\$ 364,899	\$ 247,318	\$ 117,581	67.78%	\$ 47,155	249.35%
2020	339,942	201,340	138,602	59.23%	48,231	287.37%
2019	312,553	201,206	111,347	64.38%	48,780	228.26%
2018	301,012	190,847	110,165	63.40%	50,064	220.05%
2017	313,234	178,838	134,396	57.09%	48,873	274.99%

Note:

¹ Based on derived compensation using the provided employer contribution information.

EXHIBIT 2a

Schedule of Changes in the Employers' Net OPEB Liability – CERS Non-Hazardous Fund (\$ in thousands)

Change in the Net OPEB Liability	2021	2020	2019	2018	2017
Total OPEB liability					
Service Cost	\$ 132,407	\$ 131,289	\$ 119,011	\$ 122,244	\$ 85,468
Interest on the total OPEB liability	262,128	236,126	240,352	242,048	240,854
Benefit Changes	3,359	0	0	4,306	0
Difference between actual and expected experience	(340,831)	505,843	(404,301)	(240,568)	(6,641)
Assumption Changes	282,975	60,225	268,842	(4,876)	520,286
Benefit Payments ¹	(175,096)	(188,640)	(162,044)	(156,426)	(140,120)
Net Change in Total OPEB Liability	164,942	744,843	61,860	(33,272)	699,847
Total OPEB Liability - Beginning	\$ 4,996,309	\$ 4,251,466	\$ 4,189,606	\$ 4,222,878	\$ 3,523,031
Total OPEB Liability - Ending (a)	\$ 5,161,251	\$ 4,996,309	\$ 4,251,466	\$ 4,189,606	\$ 4,222,878
Plan Fiduciary Net Position					
Contributions - Employer ²	\$ 186,509	\$ 179,521	\$ 168,905	\$ 145,809	\$ 133,326
Contributions - Member	13,613	12,964	11,801	10,825	9,158
Benefit Payments ¹	(175,096)	(188,640)	(162,044)	(156,426)	(140,120)
OPEB Plan Net Investment Income	641,084	9,160	137,591	202,068	264,782
OPEB Plan Administrative Expense	(922)	(903)	(877)	(761)	(789)
Other	0	0	9 ⁴	75 ⁴	0
Net Change in Plan Fiduciary Net Position	665,188	12,102	155,385	201,590	266,357
Plan Fiduciary Net Position - Beginning	\$ 2,581,613	\$ 2,569,511	\$ 2,414,126	\$ 2,212,536	\$ 1,946,179
Plan Fiduciary Net Position - Ending (b)	\$ 3,246,801	\$ 2,581,613	\$ 2,569,511	\$ 2,414,126	\$ 2,212,536
Net OPEB Liability - Ending (a) - (b)	1,914,450	2,414,696	1,681,955	1,775,480	2,010,342
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	62.91%	51.67%	60.44%	57.62%	52.39%
Covered Employee Payroll³	\$ 2,619,695	\$ 2,620,585	\$ 2,577,378	\$ 2,570,156	\$ 2,480,130
Net OPEB Liability as a Percentage of Covered Employee Payroll	73.08%	92.14%	65.26%	69.08%	81.06%

Notes:

¹ 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).

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

³ Based on derived compensation using the provided employer contribution information.

⁴ Northern Trust Settlement.



EXHIBIT 2b

Schedule of Changes in the Employers' Net OPEB Liability – CERS Hazardous Fund (\$ in thousands)

Change in the Net OPEB Liability	2021	2020	2019	2018	2017
Total OPEB liability					
Service Cost	\$ 48,413	\$ 47,443	\$ 32,623	\$ 33,948	\$ 20,493
Interest on the total OPEB liability	116,710	115,998	116,768	118,009	113,166
Benefit Changes	1,146	0	0	484	0
Difference between actual and expected experience	(47,937)	38,156	(103,317)	(100,348)	(2,470)
Assumption Changes	159,106	46,925	116,618	(2,500)	391,061
Benefit Payments ¹	(86,277)	(83,874)	(76,059)	(71,325)	(63,656)
Net Change in Total OPEB Liability	191,161	164,648	86,633	(21,732)	458,594
Total OPEB Liability - Beginning	\$ 2,245,222	\$ 2,080,574	\$ 1,993,941	\$ 2,015,673	\$ 1,557,079
Total OPEB Liability - Ending (a)	\$ 2,436,383	\$ 2,245,222	\$ 2,080,574	\$ 1,993,941	\$ 2,015,673
Plan Fiduciary Net Position					
Contributions - Employer ²	\$ 63,509	\$ 59,662	\$ 60,445	\$ 51,615	\$ 44,325
Contributions - Member	3,098	2,762	2,458	2,173	1,708
Benefit Payments ¹	(86,277)	(83,874)	(76,059)	(71,325)	(63,656)
OPEB Plan Net Investment Income	326,905	2,315	73,317	109,854	143,892
OPEB Plan Administrative Expense	(528)	(462)	(434)	(376)	(381)
Other	0	0	5 ⁴	40 ⁴	0
Net Change in Plan Fiduciary Net Position	306,707	(19,597)	59,732	91,981	125,888
Plan Fiduciary Net Position - Beginning	\$ 1,321,117	\$ 1,340,714	\$ 1,280,982	\$ 1,189,001	\$ 1,063,113
Plan Fiduciary Net Position - Ending (b)	\$ 1,627,824	\$ 1,321,117	\$ 1,340,714	\$ 1,280,982	\$ 1,189,001
Net OPEB Liability - Ending (a) - (b)	808,559	924,105	739,860	712,959	826,672
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	66.81%	58.84%	64.44%	64.24%	58.99%
Covered Employee Payroll³	\$ 613,985	\$ 596,001	\$ 583,632	\$ 588,526	\$ 542,710
Net OPEB Liability as a Percentage of Covered Employee Payroll	131.69%	155.05%	126.77%	121.14%	152.32%

Notes:

¹ 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).

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

³ Based on derived compensation using the provided employer contribution information.

⁴ Northern Trust Settlement.



EXHIBIT 2c

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

Change in the Net OPEB Liability	2021	2020	2019	2018	2017
Total OPEB liability					
Service Cost	\$ 58,831	\$ 59,600	\$ 61,345	\$ 66,360	\$ 46,992
Interest on the total OPEB liability	191,624	179,811	186,820	191,178	192,911
Benefit Changes	1,382	0	0	1,865	0
Difference between actual and expected experience	(231,631)	288,235	(302,189)	(191,147)	(3,921)
Assumption Changes	220,184	13,767	158,004	(11,235)	414,835
Benefit Payments ¹	(141,143)	(159,841)	(148,112)	(148,236)	(139,601)
Net Change in Total OPEB Liability	99,247	381,572	(44,132)	(91,215)	511,216
Total OPEB Liability - Beginning	\$ 3,599,557	\$ 3,217,985	\$ 3,262,117	\$ 3,353,332	\$ 2,842,116
Total OPEB Liability - Ending (a)	\$ 3,698,804	\$ 3,599,557	\$ 3,217,985	\$ 3,262,117	\$ 3,353,332
Plan Fiduciary Net Position					
Contributions - Employer ²	\$ 223,661 ⁵	\$ 208,300	\$ 201,155	\$ 152,985	\$ 162,636
Contributions - Member	6,318	6,128	5,963	5,786	5,156
Benefit Payments ¹	(141,143)	(159,841)	(148,112)	(148,236)	(139,601)
OPEB Plan Net Investment Income	270,811	11,820	45,749	64,028	94,239
OPEB Plan Administrative Expense	(819)	(847)	(875)	(760)	(861)
Other	0	0	4 ⁴	32 ⁴	0
Net Change in Plan Fiduciary Net Position	358,828	65,560	103,884	73,835	121,569
Plan Fiduciary Net Position - Beginning	\$ 1,060,649	\$ 995,089	\$ 891,205	\$ 817,370	\$ 695,801
Plan Fiduciary Net Position - Ending (b)	\$ 1,419,477	\$ 1,060,649	\$ 995,089	\$ 891,205	\$ 817,370
Net OPEB Liability - Ending (a) - (b)	2,279,327	2,538,908	2,222,896	2,370,912	2,535,962
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	38.38%	29.47%	30.92%	27.32%	24.37%
Covered Employee Payroll³	\$ 1,452,345	\$ 1,482,431	\$ 1,515,953	\$ 1,573,898	\$ 1,593,097
Net OPEB Liability as a Percentage of Covered Employee Payroll	156.94%	171.27%	146.63%	150.64%	159.18%

Notes:

¹ 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).

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

³ Based on derived compensation using the provided employer contribution information.

⁴ Northern Trust Settlement.

⁵ Includes \$28.4 million employer cessation contribution.



EXHIBIT 2d

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

Change in the Net OPEB Liability	2021	2020	2019	2018	2017
Total OPEB liability					
Service Cost	\$ 13,633	\$ 11,548	\$ 12,337	\$ 12,893	\$ 8,002
Interest on the total OPEB liability	29,254	28,101	27,990	28,500	27,591
Benefit Changes	48	0	0	167	0
Difference between actual and expected experience	(6,402)	27,668	(30,947)	(31,240)	(1,029)
Assumption Changes	42,022	11,428	31,687	(581)	89,401
Benefit Payments ¹	<u>(20,927)</u>	<u>(21,425)</u>	<u>(19,767)</u>	<u>(18,704)</u>	<u>(16,618)</u>
Net Change in Total OPEB Liability	57,628	57,320	21,300	(8,965)	107,347
Total OPEB Liability - Beginning	<u>\$ 564,524</u>	<u>\$ 507,204</u>	<u>\$ 485,904</u>	<u>\$ 494,869</u>	<u>\$ 387,522</u>
Total OPEB Liability - Ending (a)	<u>\$ 622,152</u>	<u>\$ 564,524</u>	<u>\$ 507,204</u>	<u>\$ 485,904</u>	<u>\$ 494,869</u>
Plan Fiduciary Net Position					
Contributions - Employer ²	\$ 3,556	\$ 7,441	\$ 5,556	\$ 5,165	\$ 4,579
Contributions - Member	1,167	1,105	934	909	811
Benefit Payments ¹	(20,927)	(21,425)	(19,767)	(18,704)	(16,618)
OPEB Plan Net Investment Income	128,244	704	28,373	42,950	59,614
OPEB Plan Administrative Expense	(118)	(123)	(117)	(104)	(105)
Other	<u>0</u>	<u>0</u>	<u>2</u> ⁴	<u>18</u> ⁴	<u>0</u>
Net Change in Plan Fiduciary Net Position	111,922	(12,298)	14,981	30,234	48,281
Plan Fiduciary Net Position - Beginning	<u>\$ 521,755</u>	<u>\$ 534,053</u>	<u>\$ 519,072</u>	<u>\$ 488,838</u>	<u>\$ 440,557</u>
Plan Fiduciary Net Position - Ending (b)	<u>\$ 633,677</u>	<u>\$ 521,755</u>	<u>\$ 534,053</u>	<u>\$ 519,072</u>	<u>\$ 488,838</u>
Net OPEB Liability - Ending (a) - (b)	(11,525)	42,769	(26,849)	(33,168)	6,031
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	101.85%	92.42%	105.29%	106.83%	98.78%
Covered Employee Payroll³	\$ 172,725	\$ 182,209	\$ 151,448	\$ 190,317	\$ 171,087
Net OPEB Liability as a Percentage of Covered Employee Payroll	-6.67%	23.47%	-17.73%	-17.43%	3.53%

Notes:

¹ 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).

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

³ Based on derived compensation using the provided employer contribution information. For 2021, derived compensation based on pension contribution information, as there were no required employer contributions for the insurance fund for FYE2021.

⁴ Northern Trust Settlement.



EXHIBIT 2e

Schedule of Changes in the Employers' Net OPEB Liability – SPRS Fund (\$ in thousands)

Change in the Net OPEB Liability	2021	2020	2019	2018	2017
Total OPEB liability					
Service Cost	\$ 5,218	\$ 5,389	\$ 4,816	\$ 6,087	\$ 4,147
Interest on the total OPEB liability	17,984	17,600	17,724	18,432	17,993
Benefit Changes	101	0	0	34	0
Difference between actual and expected experience	(6,318)	13,810	(14,295)	(23,320)	(573)
Assumption Changes	21,784	4,578	16,483	(358)	57,312
Benefit Payments ¹	<u>(13,812)</u>	<u>(13,988)</u>	<u>(13,187)</u>	<u>(13,097)</u>	<u>(12,123)</u>
Net Change in Total OPEB Liability	24,957	27,389	11,541	(12,222)	66,756
Total OPEB Liability - Beginning	\$ 339,942	\$ 312,553	\$ 301,012	\$ 313,234	\$ 246,478
Total OPEB Liability - Ending (a)	\$ 364,899	\$ 339,942	\$ 312,553	\$ 301,012	\$ 313,234
Plan Fiduciary Net Position					
Contributions - Employer ²	\$ 9,381	\$ 12,873	\$ 12,623	\$ 8,535	\$ 7,862
Contributions - Member	209	196	176	155	131
Benefit Payments ¹	(13,812)	(13,988)	(13,187)	(13,097)	(12,123)
OPEB Plan Net Investment Income	50,289	1,124	10,815	16,470	21,627
OPEB Plan Administrative Expense	(89)	(71)	(69)	(62)	(66)
Other	<u>0</u>	<u>0</u>	<u>1</u> ⁴	<u>8</u> ⁴	<u>0</u>
Net Change in Plan Fiduciary Net Position	45,978	134	10,359	12,009	17,431
Plan Fiduciary Net Position - Beginning	\$ 201,340	\$ 201,206	\$ 190,847	\$ 178,838	\$ 161,407
Plan Fiduciary Net Position - Ending (b)	\$ 247,318	\$ 201,340	\$ 201,206	\$ 190,847	\$ 178,838
Net OPEB Liability - Ending (a) - (b)	117,581	138,602	111,347	110,165	134,396
Plan Fiduciary Net Position as a Percentage of the Total OPEB Liability	67.78%	59.23%	64.38%	63.40%	57.09%
Covered Employee Payroll³	\$ 47,155	\$ 48,231	\$ 48,780	\$ 50,064	\$ 48,873
Net OPEB Liability as a Percentage of Covered Employee Payroll	249.35%	287.37%	228.26%	220.05%	274.99%

Notes:

¹ 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).

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

³ Based on derived compensation using the provided employer contribution information.

⁴ Northern Trust Settlement.



EXHIBIT 3a

Schedule of Employers' Contributions – CERS Non-Hazardous Fund (\$ in thousands)

Fiscal Year Ending ¹	Actuarially Determined Contribution ²	Total Employer Contributions ³	Contribution Deficiency (Excess)	Covered Employee Payroll ⁴	Actual Contributions as a Percentage of Covered Payroll
2021	\$ 142,249	\$ 129,903	\$ 12,346	\$ 2,619,695	4.96%
2020	124,740	129,268	(4,528)	2,620,585	4.93%
2019	160,055	139,655	20,400	2,577,378	5.42%
2018	120,797	124,619	(3,822)	2,570,156	4.85%
2017	122,270	120,712	1,558	2,480,130	4.87%
2016	110,987	111,836	(849)	2,352,762	4.75%
2015	119,511	119,444	67	2,296,716	5.20%
2014	130,652	123,278	7,374	2,272,270	5.43%
2013	195,561	159,993	35,568	2,236,277	7.15%
2012	214,421	171,925	42,496	2,236,546	7.69%

Notes:

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

² Actuarially determined contribution for fiscal year ending 2021 is based on the contribution rate calculated with the June 30, 2019 actuarial valuation, as amended by SB249 (2020 legislative session) which reset the amortization period to 30 years.

³ Employer contributions do not include the expected implicit subsidy included in exhibit 2.

⁴ Based on derived compensation using the provided employer contribution information.

EXHIBIT 3b

Schedule of Employers' Contributions – CERS Hazardous Fund (\$ in thousands)

Fiscal Year Ending ¹	Actuarially Determined Contribution ²	Total Employer Contributions ³	Contribution Deficiency (Excess)	Covered Employee Payroll ⁴	Actual Contributions as a Percentage of Covered Payroll
2021	\$ 60,539	\$ 59,799	\$ 740	\$ 613,985	9.74%
2020	56,739	57,897	(1,158)	596,001	9.71%
2019	71,028	62,272	8,756	583,632	10.67%
2018	55,027	56,002	(975)	588,526	9.52%
2017	53,131	51,537	1,594	542,710	9.50%
2016	64,253	67,619	(3,366)	492,851	13.72%
2015	69,103	71,778	(2,675)	483,641	14.84%
2014	74,360	74,792	(432)	479,164	15.61%
2013	102,011	85,319	16,692	461,673	18.48%
2012	110,763	92,564	18,199	464,229	19.94%

Notes:

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

² Actuarially determined contribution for fiscal year ending 2021 is based on the contribution rate calculated with the June 30, 2019 actuarial valuation, as amended by SB249 (2020 legislative session) which reset the amortization period to 30 years.

³ Employer contributions do not include the expected implicit subsidy included in exhibit 2.

⁴ Based on derived compensation using the provided employer contribution information.

EXHIBIT 3c

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

Fiscal Year Ending ¹	Actuarially Determined Contribution ²	Total Employer Contributions ³	Contribution Deficiency (Excess)	Covered Employee Payroll ⁴	Actual Contributions as a Percentage of Covered Payroll
2021	\$ 161,936	\$ 186,676	\$ (24,740)	\$ 1,452,345	12.85%
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%

Notes:

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

² Actuarially determined contribution for fiscal year ending 2021 is based on the contribution rate calculated with the June 30, 2019 actuarial valuation, as amended by SB249 (2020 legislative session) which reset the amortization period to 30 years.

³ Employer contributions do not include the expected implicit subsidy included in exhibit 2.

⁴ Based on derived compensation using the provided employer contribution information.

EXHIBIT 3d

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

Fiscal Year Ending ¹	Actuarially Determined Contribution ²	Total Employer Contributions ³	Contribution Deficiency (Excess)	Covered Employee Payroll ⁴	Actual Contributions as a Percentage of Covered Payroll
2021	\$ 0	\$ 1,300	\$ (1,300)	\$ 172,725	0.75%
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%

Notes:

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

² Actuarially determined contribution for fiscal year ending 2021 is based on the contribution rate calculated with the June 30, 2019 actuarial valuation, as amended by SB249 (2020 legislative session) which reset the amortization period to 30 years.

³ Employer contributions do not include the expected implicit subsidy included in exhibit 2.

⁴ Based on derived compensation using the provided employer contribution information.

EXHIBIT 3e

Schedule of Employers' Contributions – SPRS Fund (\$ in thousands)

Fiscal Year Ending ¹	Actuarially Determined Contribution ²	Total Employer Contributions ³	Contribution Deficiency (Excess)	Covered Employee Payroll ⁴	Actual Contributions as a Percentage of Covered Payroll
2021	\$ 9,285	\$ 9,285	\$ 0	\$ 47,155	19.69%
2020	13,133	13,133	0	48,231	27.23%
2019	13,283	13,288	(5)	48,780	27.24%
2018	9,062	9,397	(335)	50,064	18.77%
2017	9,222	9,222	0	48,873	18.87%
2016	8,553	10,237	(1,684)	45,551	22.47%
2015	9,890	10,382	(492)	45,765	22.69%
2014	20,879	14,493	6,386	44,616	32.48%
2013	27,234	16,829	10,405	45,256	37.19%
2012	28,247	11,960	16,287	48,373	24.72%

Notes:

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

² Actuarially determined contribution for fiscal year ending 2021 is based on the contribution rate calculated with the June 30, 2019 actuarial valuation, as amended by SB249 (2020 legislative session) which reset the amortization period to 30 years.

³ Employer contributions do not include the expected implicit subsidy included in exhibit 2.

⁴ Based on derived compensation using the provided employer contribution information.

EXHIBIT 4a

Sensitivity of the Net OPEB Liability to Changes in the Discount Rate and Healthcare Trend Rate

CERS Non-Hazardous Fund (\$ in thousands)

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

1.00% Decrease, 4.20%	Current Discount Rate, 5.20%	1.00% Increase, 6.20%
\$ 2,628,525	\$ 1,914,450	\$ 1,328,433

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

1.00% Decrease	Current Healthcare Cost Trend Rate	1.00% Increase
\$ 1,378,176	\$ 1,914,450	\$ 2,561,740

EXHIBIT 4b

Sensitivity of the Net OPEB Liability to Changes in the Discount Rate and Healthcare Trend Rate

CERS Hazardous Fund (\$ in thousands)

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

1.00% Decrease, 4.05%	Current Discount Rate, 5.05%	1.00% Increase, 6.05%
\$ 1,172,258	\$ 808,559	\$ 516,349

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

1.00% Decrease	Current Healthcare Cost Trend Rate	1.00% Increase
\$ 529,812	\$ 808,559	\$ 1,149,958

EXHIBIT 4c

Sensitivity of the Net OPEB Liability to Changes in the Discount Rate and Healthcare Trend Rate

KERS Non-Hazardous Fund (\$ in thousands)

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

1.00% Decrease, 4.26%	Current Discount Rate, 5.26%	1.00% Increase, 6.26%
\$ 2,783,547	\$ 2,279,327	\$ 1,865,935

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

1.00% Decrease	Current Healthcare Cost Trend Rate	1.00% Increase
\$ 1,882,957	\$ 2,279,327	\$ 2,756,702

EXHIBIT 4d

Sensitivity of the Net OPEB Liability to Changes in the Discount Rate and Healthcare Trend Rate

KERS Hazardous Fund (\$ in thousands)

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

1.00% Decrease, 4.01%	Current Discount Rate, 5.01%	1.00% Increase, 6.01%
\$ 82,367	\$ (11,525)	\$ (86,891)

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

1.00% Decrease	Current Healthcare Cost Trend Rate	1.00% Increase
\$ (79,113)	\$ (11,525)	\$ 71,015

EXHIBIT 4e

Sensitivity of the Net OPEB Liability to Changes in the Discount Rate and Healthcare Trend Rate

SPRS Fund (\$ in thousands)

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

1.00% Decrease, 4.20%	Current Discount Rate, 5.20%	1.00% Increase, 6.20%
\$ 170,127	\$ 117,581	\$ 75,212

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

1.00% Decrease	Current Healthcare Cost Trend Rate	1.00% Increase
\$ 75,680	\$ 117,581	\$ 168,646