

Kentucky Employees Retirement System

GASB No. 67 Accounting Valuation Report
As of June 30, 2021





December 2, 2021

Board of Trustees
Kentucky Retirement System
Perimeter Park West
1260 Louisville Road
Frankfort, KY 40601

Re: GASB 67 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. 67, “Financial Reporting for 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. 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 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 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, 2020. The total pension 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 the non-hazardous pension fund and the hazardous pension fund before being aggregated together. GASB 67 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 and Plan Provisions

There have been no actuarial assumption or method changes since June 30, 2020. 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 pension 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 pension 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 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 pension 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. 67.

Single Discount Rate

In accordance with paragraph 40 of GASB Statement No. 67, a single discount rate of 5.33% was used for the reporting and disclosure of the KERS pension plan. Note, this is the equivalent discount rate that produces the same total pension liability as the individual single discount rate assumptions used by the non-hazardous pension fund and hazardous pension fund to measure the total pension liability for the fiscal year ending June 30, 2021 (5.25% for the non-hazardous pension fund and 6.25% for the hazardous pension fund). The single discount rate determined for each fund is based on the expected rate of return on pension plan investments for each fund.

Separate contribution rates are determined and separate assets are maintained for the non-hazardous and hazardous funds. Based on the stated assumptions and the projection of cash flows as of each fiscal year ending, the non-hazardous and hazardous pension funds' fiduciary net position and future contributions were separately projected and were each sufficient to finance all the future benefit payments of the current fund 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 fund.

The projection of cash flows used to determine the single discount rate for each fund must include an assumption regarding actual employer contributions made each future year. Future contributions are projected assuming that each participating employer in each pension 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.

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 42 of GASB Statement No. 67).

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 positions as of June 30, 2017 and later are net of the 401(h) asset balance.



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 the fiscal year ending June 30, 2021.

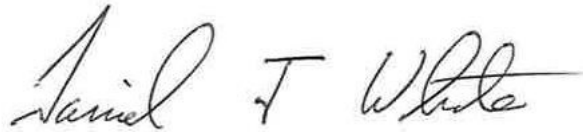
To the best of our knowledge, this report is complete and accurate and is in accordance with generally recognized actuarial practices and methods. Both of the undersigned are Enrolled Actuaries, members of the American Academy of Actuaries and meet all of the Qualification Standards of the American Academy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



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SECTION 1

EXHIBIT 1

Development of the Single Discount Rate

	<u>KERS</u>	<u>KERS Non-Hazardous</u>	<u>KERS Hazardous</u>
Single Discount Rate	5.33% ¹	5.25%	6.25%
Long-Term Expected Rate of Return		5.25%	6.25%
Long-Term Municipal Bond Rate ²		1.92%	1.92%

Notes:

¹ In accordance with paragraph 40 of GASB Statement No. 67, a single discount rate was used for the reporting and disclosure of the KERS pension plan. Note, this is the equivalent discount rate that produces the same total pension liability as the discount rates used by each individual fund to measure the total pension liability for the fiscal year ending June 30, 2021 (5.25% used for the non-hazardous pension fund and 6.25% used for the hazardous pension fund). The single discount rate determined for each fund is based on the expected rate of return on pension plan investments for each fund.

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 Pension Liability (\$ in 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 ¹	Net Pension Liability as a Percentage of Covered Employee Payroll
(1)	(2)	(3)	(4) = (2) - (3)	(5) = (3) / (2)	(6)	(7) = (4) / (6)
2021	\$ 17,647,424	\$ 3,884,800	\$ 13,762,624	22.01%	\$ 1,614,062	852.67%
2020	17,723,760	2,998,430	14,725,330	16.92%	1,647,996	893.53%
2019	17,583,900	2,914,604	14,669,296	16.58%	1,646,454	890.96%
2018	16,758,831	2,649,931	14,108,900	15.81%	1,662,891	848.46%
2017	16,543,836	2,658,399	13,885,437	16.07%	1,780,907	779.68%
2016	14,299,298	2,508,171	11,791,127	17.54%	1,789,853	658.78%
2015	13,255,106	2,880,251	10,374,855	21.73%	1,672,914	620.17%
2014	12,366,960	3,139,775	9,227,185	25.39%	1,706,572	540.69%

Note:

¹ Based on derived compensation using the provided employer contribution information for fiscal years 2017 and later.



EXHIBIT 3

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

Change in the Net Pension Liability	2021	2020	2019	2018	2017	2016	2015	2014
Total pension liability								
Service Cost	\$ 199,922	\$ 205,270	\$ 212,105	\$ 224,322	\$ 164,939	\$ 160,382	\$ 162,576	\$ 150,241
Interest	913,827	906,535	862,820	851,659	937,314	956,748	920,514	913,247
Benefit Changes	2,117	0	0	10,329	0	0	0	0
Difference between actual and expected experience	(95,479)	114,420	71,924	177,780	(107,477)	0	37,025	0
Assumption Changes	0	0	751,122	0	2,273,408	923,999	746,757	0
Benefit Payments	(1,096,723)	(1,086,365)	(1,072,902)	(1,049,095)	(1,023,647)	(996,937)	(978,726)	(960,715)
Net Change in Total Pension Liability	\$ (76,336)	\$ 139,860	\$ 825,069	\$ 214,995	\$ 2,244,537	\$ 1,044,192	\$ 888,146	\$ 102,773
Total Pension Liability - Beginning	\$ 17,723,760	\$ 17,583,900	\$ 16,758,831	\$ 16,543,836	\$ 14,299,298	\$ 13,255,106	\$ 12,366,960	\$ 12,264,187
Total Pension Liability - Ending (a)	\$ 17,647,424	\$ 17,723,760	\$ 17,583,900	\$ 16,758,831	\$ 16,543,836	\$ 14,299,298	\$ 13,255,106	\$ 12,366,960
Plan Fiduciary Net Position¹								
Contributions - Employer	\$ 1,196,432 ⁶	\$ 1,007,707	\$ 1,090,721	\$ 732,804	\$ 810,095	\$ 536,843	\$ 550,227	\$ 308,506
Contributions - Member ²	110,163	116,363	110,877	122,863	118,067	122,234	117,813	110,033
Refunds of contributions to members	(13,333)	(14,691)	(15,026)	(16,104)	(13,925)	(14,341)	(16,162)	(16,457)
Retirement benefits	(1,083,390)	(1,071,674)	(1,057,876)	(1,032,991)	(1,009,721)	(982,594)	(962,564)	(944,257)
Net Investment Income ²	689,375	59,238	148,751	196,348	291,979	(22,316)	53,271	418,647
Administrative Expense ²	(12,877)	(13,117)	(12,815)	(11,667)	(11,876)	(11,905)	(11,318)	(12,042)
Other	0	0	41 ⁵	334 ⁵	(34,391) ⁴	0	9,209	0
Net Change in Plan Fiduciary Net Position	\$ 886,370	\$ 83,826	\$ 264,673	\$ (8,413)	\$ 150,228	\$ (372,079)	\$ (259,524)	\$ (135,570)
Plan Fiduciary Net Position - Beginning	\$ 2,998,430	\$ 2,914,604	\$ 2,649,931	\$ 2,658,399	\$ 2,508,171	\$ 2,880,251	\$ 3,139,775	\$ 3,275,345
Prior Year Adjustment	0	0	0	(55)	0	0	0	0
Plan Fiduciary Net Position - Ending (b)	\$ 3,884,800	\$ 2,998,430	\$ 2,914,604	\$ 2,649,931	\$ 2,658,399	\$ 2,508,171	\$ 2,880,251	\$ 3,139,775
Net Pension Liability - Ending (a) - (b)	\$ 13,762,624	\$ 14,725,330	\$ 14,669,296	\$ 14,108,900	\$ 13,885,437	\$ 11,791,127	\$ 10,374,855	\$ 9,227,185
Plan Fiduciary Net Position as a Percentage	22.01%	16.92%	16.58%	15.81%	16.07%	17.54%	21.73%	25.39%
Covered Employee Payroll³	\$ 1,614,062	\$ 1,647,996	\$ 1,646,454	\$ 1,662,891	\$ 1,780,907	\$ 1,789,853	\$ 1,672,914	\$ 1,706,572
Net Pension Liability as a Percentage of Covered Employee Payroll	852.67%	893.53%	890.96%	848.46%	779.68%	658.78%	620.17%	540.69%

Notes:

¹ Does not include 401(h) assets for fiscal years 2017 and later

² Does not include 401(h) contributions, associated administrative expenses, and investment income on 401(h) contributions for fiscal years 2017 and later

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

⁴ Adjustment due to 401(h) plan asset balance being considered an OPEB asset under GASB 74 for fiscal years 2017 and later

⁵ Northern Trust Settlement

⁶ Includes \$175.6 million employer cessation contribution



EXHIBIT 4

Schedule of Employers' Contributions (\$ in thousands)

Fiscal Year Ending	Actuarially Determined Contribution ¹	Total Employer Contributions	Contribution Deficiency (Excess)	Covered Employee Payroll ²	Actual Contributions as a Percentage of Covered Payroll
2021	\$ 1,118,392	\$ 1,196,432	\$ (78,040)	\$ 1,614,062	74.13%
2020	1,107,609	1,007,707	99,902	1,647,996	61.15%
2019	1,110,632	1,090,721	19,911	1,646,454	66.25%
2018	665,200	732,804	(67,604)	1,662,891	44.07%
2017	661,443	810,095	(148,652)	1,780,907	45.49%
2016	536,360	536,843	(483)	1,789,853	29.99%
2015	549,322	550,227	(905)	1,672,914	32.89%
2014	534,335	308,506	225,829	1,706,572	18.08%
2013	506,898	308,208	198,690	1,775,424	17.36%
2012	461,359	235,595	225,764	1,776,874	13.26%

Notes:

¹ 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 the non-hazardous pension fund and hazardous pension fund.

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

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 the non-hazardous fund and the hazardous 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	0.00%
Investment Return:	5.25% for the KERS Non-Hazardous fund assets 6.25% for the KERS Hazardous fund assets
Inflation:	2.30%
Salary Increases:	3.30% to 15.30% for non-hazardous members, varies by service 3.55% to 20.05% for hazardous 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

EXHIBIT 5

Sensitivity of the Net Pension Liability to Changes in the Discount Rate (\$ in thousands)

1.00% Decrease	Current Discount Rate	1.00% Increase
\$ 15,950,744	\$ 13,762,624	\$ 11,965,291

APPENDIX 1

EXHIBIT 1a

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

Fiscal Year Ending June 30, (1)	Total Pension Liability (2)	Plan Fiduciary Net Position (3)	Employers' Net Pension Liability (Asset) (4) = (2) - (3)	Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (5) = (3) / (2)	Covered Employee Payroll ¹ (6)	Net Pension Liability as a Percentage of Covered Employee Payroll (7) = (4) / (6)
2021	\$ 16,335,657	\$ 3,018,660	\$ 13,316,997	18.48%	\$ 1,441,337	923.93%
2020	16,472,733	2,308,080	14,164,653	14.01%	1,476,156	959.56%
2019	16,356,674	2,233,672	14,123,002	13.66%	1,485,854	950.50%
2018	15,608,221	2,004,446	13,603,775	12.84%	1,509,955	900.94%
2017	15,445,206	2,056,870	13,388,336	13.32%	1,602,396	835.52%
2016	13,379,781	1,980,292	11,399,489	14.80%	1,631,025	698.92%
2015	12,359,673	2,327,783	10,031,890	18.83%	1,544,234	649.64%
2014	11,550,110	2,578,291	8,971,819	22.32%	1,577,496	568.74%

Note:

¹ 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 – KERS Hazardous Fund (\$ in 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 ¹	Net Pension Liability as a Percentage of Covered Employee Payroll
(1)	(2)	(3)	(4) = (2) - (3)	(5) = (3) / (2)	(6)	(7) = (4) / (6)
2021	\$ 1,311,767	\$ 866,140	\$ 445,627	66.03%	\$ 172,725	258.00%
2020	1,251,027	690,350	560,677	55.18%	171,840	326.28%
2019	1,227,226	680,932	546,294	55.49%	160,600	340.16%
2018	1,150,610	645,485	505,125	56.10%	152,936	330.29%
2017	1,098,630	601,529	497,101	54.75%	178,511	278.47%
2016	919,517	527,879	391,638	57.41%	158,828	246.58%
2015	895,433	552,468	342,965	61.70%	128,680	266.53%
2014	816,850	561,484	255,366	68.74%	129,076	197.84%

Note:

¹ 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 – KERS Non-Hazardous Fund

(\$ in thousands)

Change in the Net Pension Liability	2021	2020	2019	2018	2017	2016	2015	2014
Total pension liability								
Service Cost	\$ 171,472	\$ 179,702	\$ 184,988	\$ 195,681	\$ 143,858	\$ 139,631	\$ 143,847	\$ 133,361
Interest	838,084	832,178	793,163	785,123	870,725	891,897	859,509	853,653
Benefit Changes	2,091	0	0	9,624	0	0	0	0
Difference between actual and expected experience	(130,268)	115,515	70,529	153,565	(134,379)	0	30,958	0
Assumption Changes	0	0	700,464	0	2,145,530	923,999	694,592	0
Benefit Payments	(1,018,455)	(1,011,336)	(1,000,691)	(980,978)	(960,309)	(935,419)	(919,343)	(903,564)
Net Change in Total Pension Liability	\$ (137,076)	\$ 116,059	\$ 748,453	\$ 163,015	\$ 2,065,425	\$ 1,020,108	\$ 809,563	\$ 83,450
Total Pension Liability - Beginning	\$ 16,472,733	\$ 16,356,674	\$ 15,608,221	\$ 15,445,206	\$ 13,379,781	\$ 12,359,673	\$ 11,550,110	\$ 11,466,660
Total Pension Liability - Ending (a)	\$ 16,335,657	\$ 16,472,733	\$ 16,356,674	\$ 15,608,221	\$ 15,445,206	\$ 13,379,781	\$ 12,359,673	\$ 11,550,110
Plan Fiduciary Net Position¹								
Contributions - Employer	\$ 1,134,232 ⁶	\$ 948,592	\$ 1,035,462	\$ 689,143	\$ 757,121	\$ 513,084	\$ 521,691	\$ 296,836
Contributions - Member ²	90,202	96,594	93,759	104,972	100,543	106,495	104,606	97,487
Refunds of contributions to members	(8,953)	(11,523)	(12,342)	(13,603)	(11,819)	(12,130)	(13,552)	(13,627)
Retirement benefits	(1,009,502)	(999,813)	(988,349)	(967,375)	(948,490)	(923,288)	(905,791)	(889,937)
Net Investment Income ²	516,223	52,499	112,371	144,881	220,985	(20,663)	44,570	337,923
Administrative Expense ²	(11,622)	(11,941)	(11,712)	(10,692)	(10,957)	(10,989)	(10,474)	(11,145)
Other	0	0	37 ⁵	301 ⁵	(30,805) ⁴	0	8,442	0
Net Change in Plan Fiduciary Net Position	\$ 710,580	\$ 74,408	\$ 229,226	\$ (52,373)	\$ 76,578	\$ (347,491)	\$ (250,508)	\$ (182,463)
Plan Fiduciary Net Position - Beginning	\$ 2,308,080	\$ 2,233,672	\$ 2,004,446	\$ 2,056,870	\$ 1,980,292	\$ 2,327,783	\$ 2,578,291	\$ 2,760,754
Prior Year Adjustment	0	0	0	(51)	0	0	0	0
Plan Fiduciary Net Position - Ending (b)	\$ 3,018,660	\$ 2,308,080	\$ 2,233,672	\$ 2,004,446	\$ 2,056,870	\$ 1,980,292	\$ 2,327,783	\$ 2,578,291
Net Pension Liability - Ending (a) - (b)	\$ 13,316,997	\$ 14,164,653	\$ 14,123,002	\$ 13,603,775	\$ 13,388,336	\$ 11,399,489	\$ 10,031,890	\$ 8,971,819
Plan Fiduciary Net Position as a Percentage	18.48%	14.01%	13.66%	12.84%	13.32%	14.80%	18.83%	22.32%
Covered Employee Payroll³	\$ 1,441,337	\$ 1,476,156	\$ 1,485,854	\$ 1,509,955	\$ 1,602,396	\$ 1,631,025	\$ 1,544,234	\$ 1,577,496
Net Pension Liability as a Percentage of Covered Employee Payroll	923.93%	959.56%	950.50%	900.94%	835.52%	698.92%	649.64%	568.74%

Notes:

¹ Does not include 401(h) assets for fiscal years 2017 and later

² Does not include 401(h) contributions, associated administrative expenses, and investment income on 401(h) contributions for fiscal years 2017 and later

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

⁴ Adjustment due to 401(h) plan asset balance being considered an OPEB asset under GASB 74 for fiscal years 2017 and later

⁵ Northern Trust Settlement

⁶ Includes \$175.6 million employer cessation contribution



EXHIBIT 2b

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

Change in the Net Pension Liability	2021	2020	2019	2018	2017	2016	2015	2014
Total pension liability								
Service Cost	\$ 28,450	\$ 25,568	\$ 27,117	\$ 28,641	\$ 21,081	\$ 20,751	\$ 18,729	\$ 16,880
Interest	75,743	74,357	69,657	66,536	66,589	64,851	61,005	59,594
Benefit Changes	26	0	0	705	0	0	0	0
Difference between actual and expected experience	34,789	(1,095)	1,395	24,215	26,902	0	6,067	0
Assumption Changes	0	0	50,658	0	127,878	0	52,165	0
Benefit Payments	(78,268)	(75,029)	(72,211)	(68,117)	(63,338)	(61,518)	(59,383)	(57,151)
Net Change in Total Pension Liability	\$ 60,740	\$ 23,801	\$ 76,616	\$ 51,980	\$ 179,112	\$ 24,084	\$ 78,583	\$ 19,323
Total Pension Liability - Beginning	\$ 1,251,027	\$ 1,227,226	\$ 1,150,610	\$ 1,098,630	\$ 919,517	\$ 895,433	\$ 816,850	\$ 797,527
Total Pension Liability - Ending (a)	\$ 1,311,767	\$ 1,251,027	\$ 1,227,226	\$ 1,150,610	\$ 1,098,630	\$ 919,517	\$ 895,433	\$ 816,850
Plan Fiduciary Net Position¹								
Contributions - Employer	\$ 62,200	\$ 59,115	\$ 55,259	\$ 43,661	\$ 52,974	\$ 23,759	\$ 28,536	\$ 11,670
Contributions - Member ²	19,961	19,769	17,118	17,891	17,524	15,739	13,207	12,546
Refunds of contributions to members	(4,380)	(3,168)	(2,684)	(2,501)	(2,106)	(2,211)	(2,610)	(2,830)
Retirement benefits	(73,888)	(71,861)	(69,527)	(65,616)	(61,231)	(59,306)	(56,773)	(54,320)
Net Investment Income ²	173,152	6,739	36,380	51,467	70,994	(1,653)	8,701	80,724
Administrative Expense ²	(1,255)	(1,176)	(1,103)	(975)	(919)	(916)	(844)	(897)
Other	0	0	4 ⁵	33 ⁵	(3,586) ⁴	0	767	0
Net Change in Plan Fiduciary Net Position	\$ 175,790	\$ 9,418	\$ 35,447	\$ 43,960	\$ 73,650	\$ (24,588)	\$ (9,016)	\$ 46,893
Plan Fiduciary Net Position - Beginning	\$ 690,350	\$ 680,932	\$ 645,485	\$ 601,529	\$ 527,879	\$ 552,468	\$ 561,484	\$ 514,591
Prior Year Adjustment	0	0	0	(4)	0	0	0	0
Plan Fiduciary Net Position - Ending (b)	\$ 866,140	\$ 690,350	\$ 680,932	\$ 645,485	\$ 601,529	\$ 527,879	\$ 552,468	\$ 561,484
Net Pension Liability - Ending (a) - (b)	\$ 445,627	\$ 560,677	\$ 546,294	\$ 505,125	\$ 497,101	\$ 391,638	\$ 342,965	\$ 255,366
Plan Fiduciary Net Position as a Percentage	66.03%	55.18%	55.49%	56.10%	54.75%	57.41%	61.70%	68.74%
Covered Employee Payroll³	\$ 172,725	\$ 171,840	\$ 160,600	\$ 152,936	\$ 178,511	\$ 158,828	\$ 128,680	\$ 129,076
Net Pension Liability as a Percentage of Covered Employee Payroll	258.00%	326.28%	340.16%	330.29%	278.47%	246.58%	266.53%	197.84%

Notes:

¹ Does not include 401(h) assets for fiscal years 2017 and later

² Does not include 401(h) contributions, associated administrative expenses, and investment income on 401(h) contributions for fiscal years 2017 and later

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

⁴ Adjustment due to 401(h) plan asset balance being considered an OPEB asset under GASB 74 for fiscal years 2017 and later

⁵ Northern Trust Settlement



EXHIBIT 3a

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

Fiscal Year Ending	Actuarially Determined Contribution ¹	Total Employer Contributions	Contribution Deficiency (Excess)	Covered Employee Payroll ²	Actual Contributions as a Percentage of Covered Payroll
2021	\$ 1,056,211	\$ 1,134,232	\$ (78,021)	\$ 1,441,337	78.69%
2020	1,048,513	948,592	99,921	1,476,156	64.26%
2019	1,055,402	1,035,462	19,940	1,485,854	69.69%
2018	633,879	689,143	(55,264)	1,509,955	45.64%
2017	623,813	757,121	(133,308)	1,602,396	47.25%
2016	512,670	513,084	(414)	1,631,025	31.46%
2015	520,948	521,691	(743)	1,544,234	33.78%
2014	520,765	296,836	223,929	1,577,496	18.82%
2013	485,396	280,874	204,522	1,644,409	17.08%
2012	441,094	214,786	226,308	1,644,897	13.06%

Notes:

¹ 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.

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

EXHIBIT 3b

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

Fiscal Year Ending	Actuarially Determined Contribution ¹	Total Employer Contributions	Contribution Deficiency (Excess)	Covered Employee Payroll ²	Actual Contributions as a Percentage of Covered Payroll
2021	\$ 62,181	\$ 62,200	\$ (19)	\$ 172,725	36.01%
2020	59,096	59,115	(19)	171,840	34.40%
2019	55,230	55,259	(29)	160,600	34.41%
2018	31,321	43,661	(12,340)	152,936	28.55%
2017	37,630	52,974	(15,344)	178,511	29.68%
2016	23,690	23,759	(69)	158,828	14.96%
2015	28,374	28,536	(162)	128,680	22.18%
2014	13,570	11,670	1,900	129,076	9.04%
2013	21,502	27,334	(5,832)	131,015	20.86%
2012	20,265	20,809	(544)	131,977	15.77%

Notes:

¹ 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.

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

EXHIBIT 4

Sensitivity of the Net Pension Liability to Changes in the Discount Rate (\$ in thousands)

Table 1. KERS Non-Hazardous Fund

1.00% Decrease (4.25%)	Current Discount Rate (5.25%)	1.00% Increase (6.25%)
\$ 15,340,588	\$ 13,316,997	\$ 11,653,150

Table 2. KERS Hazardous Fund

1.00% Decrease (5.25%)	Current Discount Rate (6.25%)	1.00% Increase (7.25%)
\$ 610,156	\$ 445,627	\$ 312,141