



KPPA

Kentucky Public Pensions Authority

Public Pensions Oversight Board

November 20, 2023

Actuarial Valuations Updates

David Eager, Executive Director



<u>Period</u>		<u>FY</u>
May – June 2023	Boards approve their assumptions	2023
July – November 2023	Actuary prepares the 6/30/23 valuations	2024
November 2023	Valuations sent to LRC and the Boards	
December 2023	Boards approve the valuations	
July 1, 2024	New contribution rates go into effect	2025



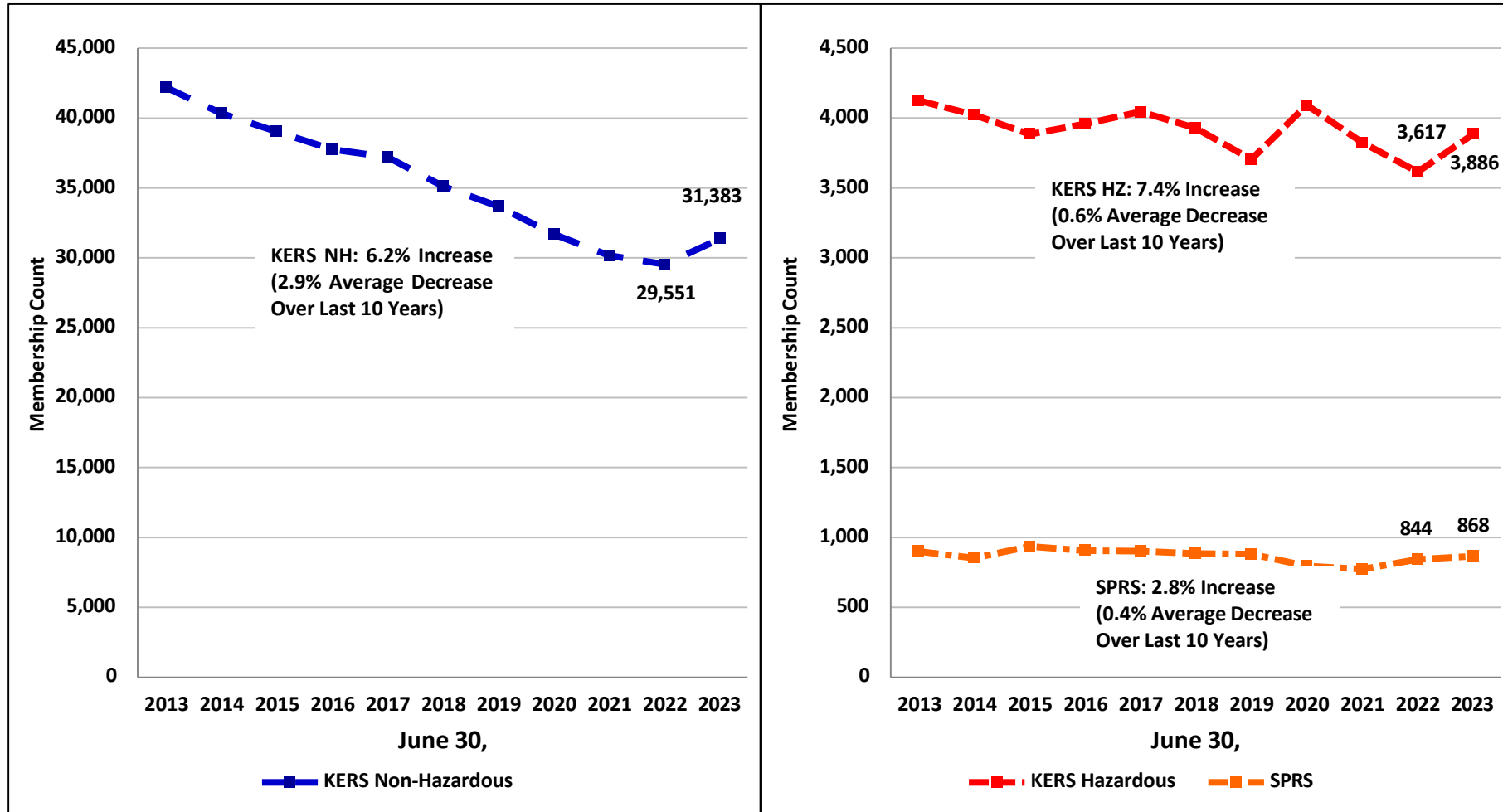
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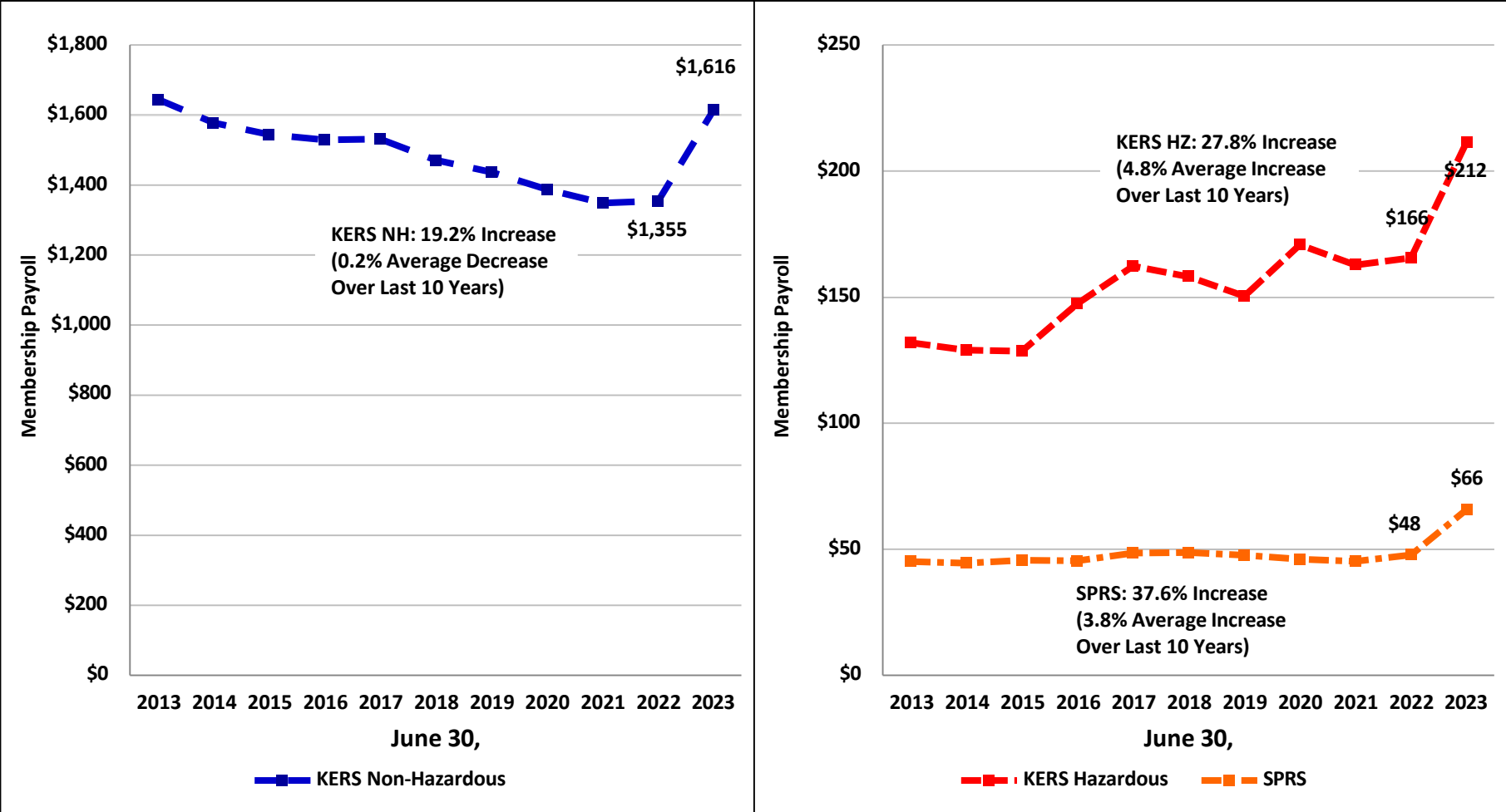
Highlights: June 30, 2023 Fiscal Year End

- All five pension funds had their funded statuses improve
 - Four of the five insurance funds are fully funded
- The additional \$695 million in appropriations over FY 2022-2024 had a very positive impact
- Our investments outperformed:
 - Their market benchmarks
 - Their public fund peer median
 - Their assumed rates of return
- In aggregate, cash flow was positive
- HB 8 is having the desired beneficial effect

Active Membership Count



Membership Payroll (\$ in Millions)





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Presentation Focus

- June 30, 2023 GRS Valuation Reports including the upcoming budget
- A five year look back at funding and employer rates/costs
- KERS Nonhazardous Pension Plan
- To a lesser extent the KERS Hazardous and State Police Retirement Funds
- Highlights from the CERS plans

If you would like more detail on any or all of the plans, please let me know



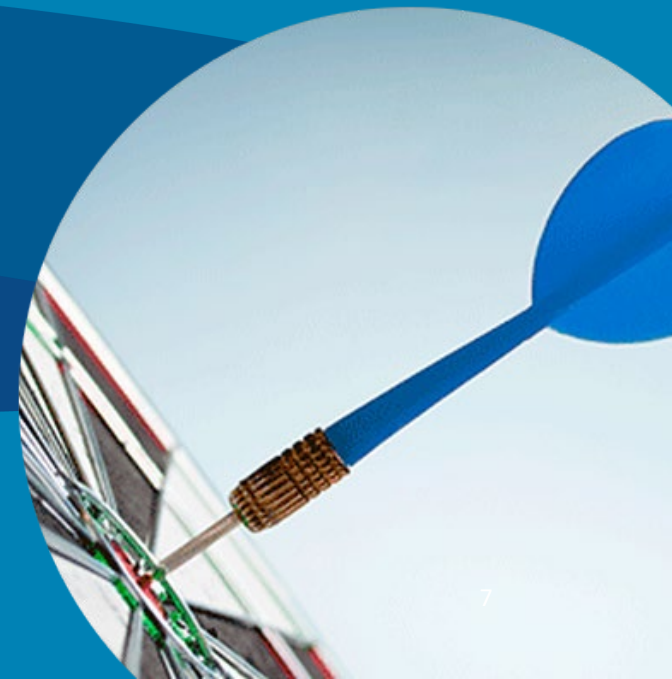
Kentucky Retirement Systems

2023 Actuarial Valuation Results

November 14, 2023

Janie Shaw, ASA, EA, MAAA

Danny White, FSA, EA, MAAA



Comments on Valuation Results

- Change in active membership and payroll
 - Active membership increased across all funds
 - KERS Hazardous: 28% increase in membership payroll
 - SPRS: 38% increase in membership payroll
 - Employer contribution for the KERS non-hazardous fund is no longer tied to payroll

Comments on Valuation Results

- Overview of legislation passed in 2023
 - **HB 506:** reinstated the Partial Lump Sum Option Form of payment, and adjusted the minimum required separation period for return to work
 - **HB 1 and HB 604:** provides \$240 million in additional appropriations to the non-hazardous retirement fund each year for two years (FY 2023 and FY 2024)

Comments on Valuation Results

- FYE 2023 Investment Experience
 - 7% to 9% return on market value (varies by fund)
 - Assumed rate of return: 5.25% for KERS non-hazardous and SPRS retirement funds
 - Assumed rate of return: 6.25% for KERS hazardous retirement fund
 - Assumed rate of return: 6.25% for insurance funds (6.50% after the 2023 after the valuation date)
 - Fund assets \$158M more than expected for KERS and SPRS (\$87M pension and \$71M insurance)
 - \$11M in asset gains recognized this year (\$10M pension and \$1M insurance)

Comments on Valuation Results

- Retirement Fund Liability Experience
 - \$545M loss for all KERS/SPRS retirement funds combined
 - Primarily attributed to salary increases being greater than expected for individual active members
- Insurance Fund Liability Experience
 - \$199M loss for all KERS/SPRS insurance funds combined
 - 2024 Pre-Medicare premiums higher than expected partially offset by Medicare premiums lower than expected

Actuarially Determined Employer Contributions

	KERS Non-Hazardous		KERS Hazardous		SPRS	
	2022 Val	2023 Val	2022 Val	2023 Val	2022 Val	2023 Val
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Pension Fund	7.74%	6.99%	30.12%	23.74%	85.39%	65.79%
Insurance Fund	<u>1.86%</u>	<u>1.45%</u>	<u>0.00%</u>	<u>0.00%</u>	<u>3.68%</u>	<u>2.31%</u>
Actuarially Determined Contribution, payable as a percentage of payroll	9.60%	8.44%	30.12%	23.74%	89.07%	68.10%
Difference		-1.16%		-6.38%		-20.97%
Amortization Cost – Pension	\$ 901M	\$ 855M				
Amortization Cost – Insurance	<u>5M</u>	<u>2M</u>				
Amortization Cost - Total	\$ 906M	\$ 857M	N/A	N/A	N/A	N/A
Difference		\$(49)				

Note: The 2023 valuation establishes the contribution requirement for FYE2025 and FYE2026. The 2022 valuation was provided for informational purposes only.



Actuarially Determined Employer Contributions (\$millions)

	KERS Non-Hazardous		KERS Hazardous		SPRS	
	2022 Val	2023 Val	2022 Val	2023 Val	2022 Val	2023 Val
(1)	(2)	(3)	(4)	(5)	(4)	(5)
Pension Fund	\$1,006	\$968	\$50	\$50	\$41	\$43
Insurance Fund	<u>30</u>	<u>25</u>	<u>0</u>	<u>0</u>	<u>2</u>	<u>2</u>
Total Actuarially Determined Employer Contribution	\$1,036	\$993	\$50	\$50	\$43	\$45
Change in Actuarially Determined Employer Contribution		\$(43)		\$0		\$2

Note: The 2023 valuation establishes the contribution requirement for FYE2025 and FYE2026. The 2022 valuation was provided for informational purposes only.

Unfunded Actuarial Accrued Liability – Actuarial Value of Asset Basis (\$ in Billions)

	KERS Non-Hazardous		KERS Hazardous		SPRS	
	2022 Val	2023 Val	2022 Val	2023 Val	2022 Val	2023 Val
(1)	(2)	(3)	(4)	(5)	(4)	(5)
Pension Fund	\$13.51	\$12.75	\$0.48	\$0.47	\$0.51	\$0.50
Insurance Fund	<u>0.37</u>	<u>0.34</u>	<u>(0.25)</u>	<u>(0.26)</u>	<u>(0.00)</u>	<u>(0.00)</u>
Total Unfunded Actuarial Accrued Liability	\$13.88	\$13.10	\$0.23	\$0.22	\$0.51	\$0.50
Change in Unfunded Actuarial Accrued Liability		\$(0.79)		\$(0.02)		\$(0.01)

Funding Results – KERS (\$ in millions)

Item	Non-Hazardous System				Hazardous System			
	Pension		Insurance		Pension		Insurance	
	2022	2023	2022	2023	2022	2023	2022	2023
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Total Normal Cost Rate	11.76%	11.13%	2.29%	1.94%	15.72%	15.00%	4.07%	2.77%
Member Rate	<u>(5.00)%</u>	<u>(5.00)%</u>	<u>(0.49)%</u>	<u>(0.54)%</u>	<u>(8.00)%</u>	<u>(8.00)%</u>	<u>(0.70)%</u>	<u>(0.75)%</u>
Employer Normal Cost Rate	6.76%	6.13%	1.80%	1.40%	7.72%	7.00%	3.37%	2.02%
Administrative Expenses	0.98%	0.86%	0.06%	0.05%	0.88%	0.71%	0.08%	0.06%
Amortization Cost	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>21.52%</u>	<u>16.03%</u>	<u>(13.39)%</u>	<u>(11.29)%</u>
Total Actuarially Determined Rate	7.74%	6.99%	1.86%	1.45%	30.12%	23.74%	0.00%	0.00%
Amortization Cost to be Allocated	\$ 901M	\$ 855M	5M	2M	N/A	N/A	N/A	N/A
Actuarial Accrued Liability (AAL)	\$16,577	\$16,304	\$1,782	\$1,877	\$1,317	\$1,363	\$347	\$364
Actuarial Value of Assets	<u>\$3,065</u>	<u>\$3,552</u>	<u>\$1,410</u>	<u>\$1,533</u>	<u>\$832</u>	<u>\$891</u>	<u>\$598</u>	<u>\$620</u>
Unfunded AAL	\$13,511	\$12,752	\$373	\$344	\$484	\$472	\$(251)	\$(256)
Funded Ratio	18.5%	21.8%	79.1%	81.7%	63.2%	65.4%	172.2%	170.4%



Funding Results – SPRS (\$ in millions)

Item	Pension		Insurance	
	2022	2023	2022	2023
(1)	(2)	(3)	(4)	(5)
Total Normal Cost Rate	26.92%	26.97%	7.03%	5.39%
Member Rate	<u>(8.00)%</u>	<u>(8.00)%</u>	<u>(0.52)%</u>	<u>(0.57)%</u>
Employer Normal Cost Rate	18.92%	18.97%	6.51%	4.82%
Administrative Expenses	0.57%	0.44%	0.15%	0.11%
Amortization Cost	<u>65.90%</u>	<u>46.38%</u>	<u>(2.98)%</u>	<u>(2.62)%</u>
Total Actuarially Determined Rate	85.39%	65.79%	3.68%	2.31%
Actuarial Accrued Liability (AAL)	\$1,067	\$1,092	\$233	\$244
Actuarial Value of Assets	<u>\$560</u>	<u>\$590</u>	<u>\$234</u>	<u>\$245</u>
Unfunded AAL	\$507	\$502	\$(1)	\$(1)
Funded Ratio	52.5%	54.0%	100.6%	100.5%





County Employees Retirement System

2023 Actuarial Valuation Results

November 8, 2023

Janie Shaw, ASA, EA, MAAA

Danny White, FSA, EA, MAAA

Funding Results – CERS (\$ in millions)

Item	Non-Hazardous System				Hazardous System			
	Pension		Insurance		Pension		Insurance	
	2022	2023	2022	2023	2022	2023	2022	2023
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Total Normal Cost Rate	10.22%	9.46%	2.69%	2.35%	18.02%	17.46%	4.50%	3.77%
Member Rate	<u>(5.00)%</u>	<u>(5.00)%</u>	<u>(0.59)%</u>	<u>(0.63)%</u>	<u>(8.00)%</u>	<u>(8.00)%</u>	<u>(0.59)%</u>	<u>(0.64)%</u>
Employer Normal Cost Rate	5.22%	4.46%	2.10%	1.72%	10.02%	9.46%	3.91%	3.13%
Administrative Expenses	0.84%	0.83%	0.04%	0.03%	0.32%	0.31%	0.08%	0.08%
Amortization Cost	<u>17.28%</u>	<u>14.46%</u>	<u>(3.01)%</u>	<u>(2.85)%</u>	<u>30.77%</u>	<u>27.02%</u>	<u>(1.41)%</u>	<u>(1.05)%</u>
Total Actuarially Determined Rate	23.34%	19.75%	0.00%	0.00%	41.11%	36.79%	2.58%	2.16%
Actuarial Accrued Liability (AAL)	\$15,674	\$15,296	\$2,392	\$2,560	\$5,862	\$5,850	\$1,538	\$1,604
Actuarial Value of Assets	<u>\$8,149</u>	<u>\$8,571</u>	<u>\$3,160</u>	<u>\$3,364</u>	<u>\$2,789</u>	<u>\$2,984</u>	<u>\$1,554</u>	<u>\$1,612</u>
Unfunded AAL	\$7,525	\$6,725	\$(768)	\$(804)	\$3,073	\$2,866	\$(16)	\$(8)
Funded Ratio	52.0%	56.0%	132.1%	131.4%	47.6%	51.0%	101.0%	100.5%





Actuarial Information

		Pension					Retiree Health				
		2019	2020	2021	2022	2023	2019	2020	2021	2022	2023
KERS NONHAZ	UL \$ B	\$14.260	\$14.026	\$13.585	\$13.511	\$12.752	\$1.742	\$1.469	\$1.283	\$0.373	\$0.344
	Funding %	13.4%	14.2%	16.8%	18.5%	21.8%	36.3%	42.7%	50.2%	79.1%	81.7%
KERS HAZ	UL \$ B	\$0.555	\$0.574	\$0.513	\$0.484	\$0.472	(\$0.099)	(\$0.111)	(\$0.151)	(\$0.251)	(\$0.256)
	Funding %	54.8%	55.3%	60.4%	63.2%	65.4%	123.1%	126.0%	135.5%	172.2%	170.4%
SPRS	UL \$ B	\$0.763	\$0.757	\$0.730	\$0.507	\$0.502	\$0.079	\$0.069	\$0.049	(\$0.001)	(\$0.001)
	Funding %	27.0%	28.1%	30.7%	52.5%	54.0%	71.3%	75.0%	82.0%	100.6%	100.5%
CERS NONHAZ	UL \$ B	\$7.307	\$7.390	\$7.179	\$7.525	\$6.711	\$1.045	\$0.731	\$0.503	(\$0.768)	(\$0.806)
	Funding %	49.1%	49.4%	51.8%	52.0%	56.1%	70.7%	78.5%	85.4%	132.1%	131.5%
CERS HAZ	UL \$ B	\$2.870	\$2.983	\$3.001	\$3.073	\$2.842	\$0.419	\$0.379	\$0.276	(\$0.016)	(\$0.011)
	Funding %	45.3%	45.1%	46.7%	47.6%	51.4%	75.8%	78.2%	84.3%	101.0%	100.7%



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Employer Contribution Rates and Cost

		2019	2020	2021	2022	2023	Projected 2024	Projected 2025
KERS NONHAZ	Rate %	83.43%	83.43%	84.43%	10.10%	9.97%	9.97%	8.44%
	Cost \$ M	\$1,112.4	\$1,119.1	\$1,112.2	\$172.6	\$172.0	\$187.6*	\$158.9*
	AALC	-	-	-	\$1,014.3	\$986.2	\$994.4	\$857.0
	GF App	\$75.9	-	-	-	\$240.0	\$240.0	-
KERS HAZ	Rate %	36.85%	36.85%	36.00%	33.43%	31.82%	31.82%	23.74%
	Cost \$ M	\$59.0	\$63.6	\$62.2	\$59.1	\$72.8	\$87.1*	\$64.9*
SPRS	Rate %	146.28%	146.28%	143.48%	146.06%	99.43%	99.43%	68.10%
	Cost \$ M	\$72.2	\$71.5	\$68.5	\$71.1	\$67.4	\$71.6*	\$49.0*
	GF App	\$1.1	\$1.1	\$0.4	\$215.0	-	-	-
CERS NONHAZ	Rate %	21.48%	24.06%	24.06%	26.95%	26.79%	23.34%	19.75%
	Cost \$ M	\$528.9	\$600.1	\$596.9	\$725.3	\$798.8	\$654.4*	\$553.5*
CERS HAZ	Rate %	35.34%	39.58%	39.58%	44.33%	49.59%	43.69%	38.95%
	Cost \$ M	\$198.8	\$224.9	\$230.5	\$280.3	\$356.8	\$319.9*	\$285.0*

*Projected cost are calculated using current salaries and approved rates FY24 and GRS recommended rates for FY25.



It is the projection of future costs and funded statuses if the future experience is different than the current assumptions.

- **Investment Returns:** Can have a significant impact
- **Payroll Growth:** Has no impact for KERS Nonhazardous in the post HB 8 era
- **Inflation:** Usually has a modest impact

We assume the future happens in line with the new assumptions and not the old (e.g. will earn 6.25% instead of 5.25%).

Sensitivity Analysis - Discount rate
KERS Nonhazardous Members
(Dollar amounts expressed in billions)

	Decrease Discount Rate	Valuation Results	Increase Discount Rate
(1)	(2)	(3)	(4)
Discount Rate - Retirement	4.25%	5.25%	6.25%
Discount Rate - Insurance	5.50%	6.50%	7.50%
	Retirement		
Actuarial Accrued Liability	\$18.2	\$16.3	\$14.7
Actuarial Value of Assets	3.6	3.6	3.6
Unfunded Actuarial Accrued Liability	14.7	12.8	11.2
Funded Ratio	19.5%	21.8%	24.2%
Normal Cost Rate	10.12%	6.99%	4.86%
Amortization Cost	\$0.9	\$0.9	\$0.8