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Kentucky Public Pensions Authority

Public Pensions Oversight Board

August 22, 2023

Investment Returns and Cash Flows as of June 30, 2023
Projected Employer Costs for FY 24, FY 25 and FY 26

David Eager, Executive Director
Steve Willer, Chief Investment Officer



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Fiscal 2023 Highlights

- 1) There was a wide variance in returns by asset class
 - L.C. growth equities +27.7%
 - L.C. value equities to +12.3%
 - 10 year U.S. Government Bonds -6.5%
- 2) KPPA met or exceeded its performance benchmarks in all ten plans
- 3) We are still working to get asset allocations into compliance within IPS ranges in Equities, Fixed Income and Inflation Protection
- 4) Cash flows including investment income were positive in all five pension plans
 - +\$315.1 in KERS Nonhazardous, KERS Hazardous and SPRS combined without investment income
- 5) KERS Nonhazardous pension contributions will decline by \$193.2 million in both FY 25 and 26

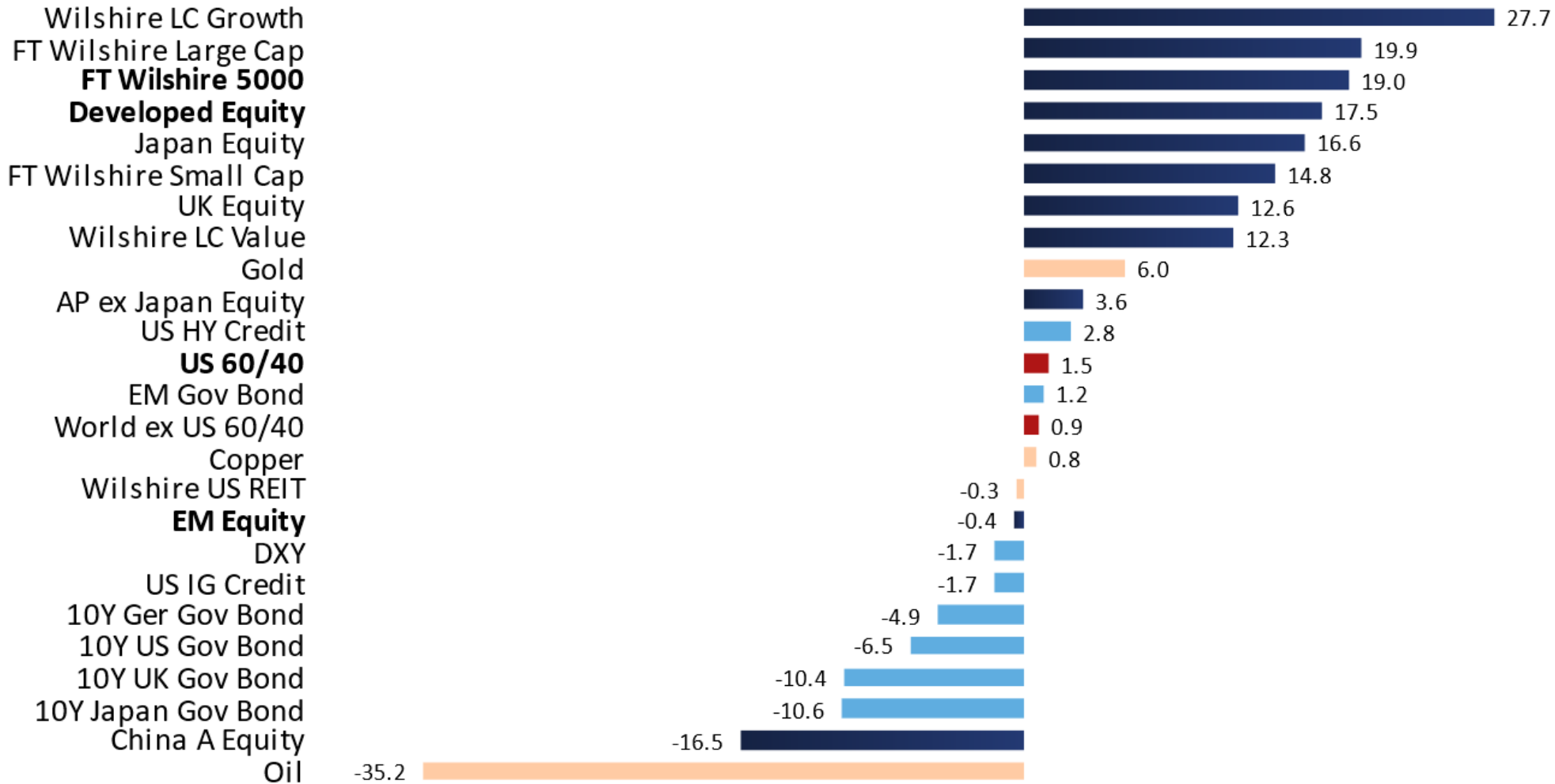


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Market Asset Class Returns For year ending June 30, 2023

12M USD TR %



PENSION – INVESTMENT RETURNS

PERIODS ENDING JUNE 30, 2023



NET OF FEES RATES OF RETURN

	MARKET VALUE (\$ IN MILLIONS)	1 YEAR	3 YEARS	5 YEARS	10 YEARS	20 YEARS	30 YEARS
KERS NH	\$3,522.03	7.0%	7.5%	6.1%	6.7%	6.6%	7.5%
PLAN BENCHMARK		7.0%	7.1%	5.7%	6.4%	6.6%	7.5%
KERS HAZ	\$898.81	9.5%	8.8%	6.6%	7.1%	6.9%	7.7%
PLAN BENCHMARK		8.7%	9.0%	6.7%	7.0%	6.9%	7.7%
SPRS	\$587.51	7.6%	7.7%	6.2%	6.6%	6.6%	7.5%
PLAN BENCHMARK		7.0%	7.1%	5.7%	6.4%	6.6%	7.5%
CERS NH	\$8,693.83	10.2%	9.3%	6.8%	7.3%	6.9%	7.7%
PLAN BENCHMARK		9.5%	8.8%	6.6%	6.9%	6.9%	7.7%
CERS HAZ	\$3,006.30	10.3%	9.2%	6.8%	7.2%	6.9%	7.7%
PLAN BENCHMARK		9.5%	8.8%	6.6%	6.9%	6.9%	7.7%

Assumed Rates of Return for Fiscal Year 2023 for Pension Plans: KERS NH and SPRS 5.25% All other Plans 6.25%

INSURANCE – INVESTMENT RETURNS

PERIODS ENDING JUNE 30, 2023



NET OF FEES RATES OF RETURN

	MARKET VALUE (\$ IN MILLIONS)	1 YEAR	3 YEARS	5 YEARS	10 YEARS	20 YEARS	30 YEARS
KERS NH	\$1,452.26	9.9%	8.9%	6.5%	6.9%	6.5%	6.7%
PLAN BENCHMARK		8.7%	8.8%	6.5%	7.0%	7.0%	7.1%
KERS HAZ	\$615.98	9.3%	9.3%	6.7%	7.2%	6.7%	6.8%
PLAN BENCHMARK		8.7%	8.9%	6.4%	7.0%	7.0%	7.1%
SPRS	\$245.83	9.5%	9.4%	6.9%	7.4%	6.8%	6.9%
PLAN BENCHMARK		8.7%	8.7%	6.4%	7.0%	7.0%	7.1%
CERS NH	\$3,274.94	10.3%	9.2%	6.7%	7.2%	6.7%	6.8%
PLAN BENCHMARK		9.5%	8.6%	6.3%	6.9%	6.9%	7.0%
CERS HAZ	\$1,606.04	10.1%	9.4%	6.8%	7.3%	6.7%	6.9%
PLAN BENCHMARK		9.5%	8.6%	6.3%	6.9%	6.9%	7.0%

Assumed Rate of Return for Fiscal Year 2023 was 6.25% for all Insurance Plans



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Asset Allocation vs. IPS Targets & Ranges

June 30, 2023

		KRS PENSION COMPOSITE			CERS PENSION COMPOSITE			KRS INSURANCE COMPOSITE			CERS INSURANCE COMPOSITE		
		ACTUAL	TARGET	RANGE	ACTUAL	TARGET	RANGE	ACTUAL	TARGET	RANGE	ACTUAL	TARGET	RANGE
EQUITY													
PUBLIC EQUITY		35.4%	34.5%	25.1%-43.4%	45.1%	50.0%	35.0%-65.0%	44.5%	43.5%	30.0%-50.0%	39.9%	43.5%	30%-50%
	PRIVATE EQUITY	4.8%	7.5%	5.4%-9.7%	10.7%	10.0%	7.0%-13.0%	7.4%	10.0%	7.0%-13.0%	11.1%	10%	7%-13%
FIXED INCOME													
SPECIALTY CREDIT		17.9%	15.0%	10.4%-19.6%	21.6%	10.0%	7.0%-13.0%	20.7%	15.0%	10.0%-20.0%	21.9%	15.0%	10%-20%
	CORE FIXED INCOME	19.2%	18.6%	15.0%-22.3%	11.8%	10.0%	8.0%-12.0%	12.0%	10.0%	8.0%-12.0%	12.3%	10%	10%-12%
	CASH	15.5%	4.4%	0%-3%	0.5%	0.0%	0.0%-3.0%	7.6%	1.5%	0.0%-3.0%	4.2%	1.5%	0%-3%
INFLATION PROTECTED													
REAL RETURN		2.2%	10.0%	7.0%-13.0%	2.8%	13.0%	9.0%-17.0%	2.5%	10.0%	7.0%-13.0%	2.8%	10.0%	7%-13%
REAL ESTATE		5.0%	10.0%	7.0%-13.0%	7.4%	7.0%	5.0%-9.0%	5.3%	10.0%	7.0%-13.0%	7.8%	10.0%	7%-13%



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Cash Flows

Data for the fiscal years ended June 30, 2022 and 2023



PENSION FUND CONTRIBUTION REPORT (KERS NHZ, KERS HAZ, & SPRS)
FOR THE TWELVE-MONTH PERIOD ENDING JUNE 30, 2023 AND JUNE 30, 2022 (\$ IN MILLIONS)

***NET CONTRIBUTIONS ARE LESS NET INVESTMENT INCOME**



CONTRIBUTIONS	FY23	FY22	FY23	FY22	FY23	FY22
MEMBER CONTRIBUTIONS	\$84.6	\$74.2	\$17.5	\$15.1	\$5.2	\$3.9
EMPLOYER CONTRIBUTIONS	136.4	156.3	72.7	64.6	58.1	63.2
ACTUARIALLY ACCRUED LIABILITY CONTRIBUTIONS	898.5	912.7	-	-	-	-
GENERAL FUND APPROPRIATIONS	240.0	-	-	-	-	215.0
EMPLOYER CESSATION CONTRIBUTIONS	-	63.1	-	-	-	-
NET INVESTMENT INCOME	85.5	52.7	20.7	15.1	15.4	6.3
CONTRIBUTION INFLOWS	1,445.0	1,259.1	110.9	94.8	78.7	288.4
BENEFIT PAYMENTS/REFUNDS	1,035.6	1,035.5	82.7	82.0	64.0	64.4
ADMINISTRATIVE EXPENSES	13.8	13.3	1.5	1.5	0.3	0.3
CONTRIBUTION OUTFLOWS	1,049.4	1,048.8	84.2	83.5	64.3	64.7
NET CONTRIBUTIONS	395.6	210.2	26.7	11.3	14.4	223.7
REALIZED AND UNREALIZED GAIN/(LOSS)	134.8	(218.6)	56.6	(67.0)	25.4	(28.5)
CHANGE IN NET POSITION	530.4	(8.4)	83.3	(55.7)	39.8	195.2
BEGINNING OF PERIOD	3,076.7	3,085.0	819.2	874.9	552.9	357.7
END OF PERIOD	\$3,607.1	\$3,076.7	\$902.5	\$819.2	\$592.7	\$552.9
NET CONTRIBUTIONS (WITHOUT INVESTMENT INCOME)	\$310.1	\$157.6	\$6.0	(\$3.8)	(\$1.0)	\$217.4
CASH FLOW AS % OF ASSETS	8.60%	5.12%	0.67%	-0.46%	-0.17%	39.31%
NET INVESTMENT INCOME	\$85.5	\$52.7	\$20.7	\$15.1	\$15.4	\$6.3
YIELD AS % OF ASSETS	2.37%	1.71%	2.29%	1.84%	2.59%	1.15%



PENSION FUND CONTRIBUTION REPORT (CERS NHZ AND CERS HAZ)
FOR THE TWELVE-MONTH PERIOD ENDING JUNE 30, 2023 AND JUNE 30, 2022 (\$ IN MILLIONS)

***NET CONTRIBUTIONS ARE LESS NET INVESTMENT INCOME**



CONTRIBUTIONS	FY23	FY22	FY23	FY22
MEMBER CONTRIBUTIONS	\$145.5	\$144.4	\$53.3	\$52.7
EMPLOYER CONTRIBUTIONS	686.6	649.0	288.1	238.8
NET INVESTMENT INCOME	178.0	136.8	62.7	48.7
CONTRIBUTION INFLOWS	1,010.1	930.2	404.1	340.2
BENEFIT PAYMENTS/REFUNDS	917.6	878.0	326.2	311.6
ADMINISTRATIVE EXPENSES	24.1	22.7	2.1	2.0
CONTRIBUTION OUTFLOWS	941.7	900.7	328.3	313.6
NET CONTRIBUTIONS	68.4	29.5	75.8	26.6
REALIZED AND UNREALIZED GAIN/(LOSS)	637.3	(637.8)	219.2	(224.1)
CHANGE IN NET POSITION	705.7	(608.3)	295.0	(197.5)
BEGINNING OF PERIOD	8,062.3	8,670.7	2,736.9	2,934.4
END OF PERIOD	8,768.1	8,062.3	3,031.9	2,736.9
NET CONTRIBUTIONS (WITHOUT INVESTMENT INCOME)	(\$109.6)	(\$107.3)	\$13.1	(\$22.1)
CASH FLOW AS % OF ASSETS	-1.25%	-1.33%	0.43%	-0.80%
NET INVESTMENT INCOME	\$178.0	\$136.8	\$62.7	\$48.7
YIELD AS % OF ASSETS	2.03%	1.70%	2.07%	1.78%



INSURANCE FUND CONTRIBUTION REPORT (KERS NHZ, KERS HAZ, & SPRS)

FOR THE TWELVE-MONTH PERIOD ENDING JUNE 30, 2023 AND JUNE 30, 2022 (\$ IN MILLIONS)

*NET CONTRIBUTIONS ARE LESS NET INVESTMENT INCOME



CONTRIBUTIONS	FY23	FY22	FY23	FY22	FY23	FY22
EMPLOYER CONTRIBUTIONS	\$35.5	\$31.6	-	-	\$9.3	\$8.8
ACTUARIALLY ACCRUED LIABILITY CONTRIBUTIONS	87.7	101.6	-	-	-	-
EMPLOYER CESSATION CONTRIBUTIONS	-	2.4	-	-	-	-
INSURANCE PREMIUMS	-	0.2	(0.1)	-	(0.1)	-
HUMANA GAIN SHARE	4.9	7.3	0.4	0.5	0.2	0.3
RETIRED REEMPLOYED HEALTHCARE	5.9	5.1	1.5	1.3	-	-
HEALTH INSURANCE CONTRIBUTIONS (HB1)	8.4	6.6	1.6	1.2	0.4	0.3
NET INVESTMENT INCOME	32.1	20.0	13.1	9.5	5.3	3.6
CONTRIBUTION INFLOW	174.5	174.8	16.5	12.5	15.1	13.0
HEALTHCARE PREMIUMS	105.6	120.0	19.8	20.5	14.3	14.5
ADMINISTRATIVE EXPENSES	0.8	0.8	0.1	0.1	0.1	0.1
CONTRIBUTION OUTFLOW	106.4	120.8	19.9	20.6	14.4	14.6
NET CONTRIBUTIONS	68.1	54.0	(3.4)	(8.1)	0.7	(1.6)
REALIZED AND UNREALIZED GAIN/(LOSS)	95.9	(105.6)	39.9	(36.9)	16.1	(14.4)
CHANGE IN NET POSITION	164.0	(51.6)	36.5	(45.0)	16.8	(16.0)
BEGINNING OF PERIOD	1,301.5	1,353.1	579.9	624.9	230.0	246.0
ENDING OF PERIOD	\$1,465.5	\$1,301.5	\$616.4	\$579.9	\$246.8	\$230.0
NET CONTRIBUTIONS (WITHOUT INVESTMENT INCOME)	\$36.0	\$34.0	(\$16.5)	(\$17.6)	(\$4.6)	(\$5.2)
CASH FLOW AS % OF ASSETS	2.46%	2.61%	-2.67%	-3.02%	-1.88%	-2.27%
NET INVESTMENT INCOME	\$32.1	\$20.0	\$13.1	\$9.5	\$5.3	\$3.6
YIELD AS % OF ASSETS	2.19%	1.54%	2.12%	1.63%	2.16%	1.58%



INSURANCE FUND CONTRIBUTION REPORT (CERS NHZ, & CERS HAZ)
FOR THE TWELVE-MONTH PERIOD ENDING JUNE 30, 2023 AND JUNE 30, 2022 (\$ IN MILLIONS)

*NET CONTRIBUTIONS ARE LESS NET INVESTMENT INCOME





CONTRIBUTIONS

	FY23	FY22	FY23	FY22
EMPLOYER CONTRIBUTIONS	\$99.5	\$118.6	\$45.6	\$58.4
INSURANCE PREMIUMS	0.3	0.5	(0.5)	(0.3)
HUMANA GAIN SHARE	6.0	8.9	0.9	1.3
RETIRED REEMPLOYED HEALTHCARE	4.9	4.8	1.6	1.5
HEALTH INSURANCE CONTRIBUTIONS (HB1)	17.5	16.0	4.0	3.8
NET INVESTMENT INCOME	66.0	51.6	32.1	24.8
CONTRIBUTION INFLOW	194.2	200.4	83.7	89.5
HEALTHCARE PREMIUMS	126.8	137.7	93.7	89.5
ADMINISTRATIVE EXPENSES	0.9	0.9	0.5	0.5
CONTRIBUTION OUTFLOW	127.7	138.6	94.2	90.0
NET CONTRIBUTIONS	66.5	61.8	(10.5)	(0.5)
REALIZED AND UNREALIZED GAIN/(LOSS)	240.0	(222.4)	116.6	(103.3)
CHANGE IN NET POSITION	306.5	(160.6)	106.1	(103.8)
BEGINNING OF PERIOD	2,981.2	3,141.8	1,504.0	1,607.8
ENDING OF PERIOD	\$3,287.7	\$2,981.2	\$1,610.1	\$1,504.0
NET CONTRIBUTIONS (WITHOUT INVESTMENT INCOME)	\$0.5	\$10.2	(\$42.6)	(\$25.3)
CASH FLOW AS % OF ASSETS	0.02%	0.34%	-2.65%	-1.68%
NET INVESTMENT INCOME	\$66.0	\$51.6	\$32.1	\$24.8
YIELD AS % OF ASSETS	2.01%	1.73%	2.00%	1.65%



Projected Employer Costs 10-Year Trend (\$ in Millions)

					
	SALARY	TOTAL EMPLOYER	NORMAL COST	AALC	RATE
2017	1,591.3	772.6		-	48.59%
2018	1,573.2	777.8		-	49.47%
2019	1,508.6	1,140.7		-	83.43%/49.47%
2020	1,479.6	1,125.8		-	83.43%/49.47%
2021	1,452.5	1,120.8		-	83.43%/49.47%
2022	1,435.3	1,160.0	145.7	1,014.3	10.10%
2023	1,669.2	1,159.9	165.5	994.4	9.97%
2024	1,669.2	1,160.8	166.4	994.4	9.97%
2025	1,669.2	967.6	148.6	819.0	8.90%
2026	1,669.2	967.6	148.6	819.0	8.90%

		
SALARY	EMPLOYER	RATE
2,465.8	460.6	18.68%
2,514.7	482.3	19.18%
2,567.2	551.3	21.48%
2,608.3	627.4	24.06%
2,605.1	626.7	24.06%
2,826.1	761.5	26.95%
2,932.2	785.5	26.79%
2,990.9	698.1	23.34%
3,050.7	624.2	20.46%
3,111.7	636.7	20.46%

*Salaries and contributions for FY 2017-2023 are actual, all others are estimates using actuarial assumptions.

*Projected Employer costs for CERS Hazardous, KERS Hazardous and SPRS are noted Appendix A of this presentation.

*FY 17-FY 21: Normal Cost and the Unfunded Liability both calculated as a % of payroll.

*FY 18 and beyond: Normal Cost calculated as a % of payroll and the unfunded liability paid as each employer's portion (in dollars) of the total unfunded liability



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Appendix





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Projected Employer Costs 10-Year Trend (\$ in Millions)

 KERS HAZARDOUS <small>Kentucky Employees Retirement System</small>			
	SALARY	EMPLOYER	RATE
2017	171.3	40.8	23.82%
2018	171.8	40.7	23.70%
2019	165.2	60.8	36.85%
2020	182.5	67.2	36.85%
2021	183.1	65.9	36.00%
2022	188.7	63.1	33.43%
2023	220.4	70.2	31.82%
2024	220.4	70.1	31.82%
2025	220.4	62.0	28.13%
2026	220.4	62.0	28.13%

 SPRS <small>State Police Retirement System</small>			
	SALARY	EMPLOYER	RATE
	48.9	43.6	89.21%
	49.2	44.9	91.24%
	48.7	71.2	146.28%
	48.2	70.4	146.28%
	47.0	67.5	143.48%
	47.9	70.0	146.06%
	65.7	65.3	99.43%
	65.7	65.3	99.43%
	65.7	53.0	80.78%
	65.7	53.0	80.78%

 CERS HAZARDOUS <small>County Employees Retirement System</small>			
	SALARY	EMPLOYER	RATE
	556.3	172.8	31.06%
	565.3	178.4	31.55%
	579.9	204.9	35.34%
	595.2	235.5	39.58%
	610.2	241.5	39.58%
	665.5	294.9	44.33%
	671.6	332.8	49.59%
	685.0	299.3	43.69%
	698.7	276.6	39.59%
	712.7	282.1	39.59%

*Salaries and contributions for FY 2017-2023 are actual, all others are estimates using actuarial assumptions.



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Current Asset Class Assumptions

	Equity						Fixed Income						Real Assets						
	US Stock	Dev ex-US Stock	Emg Stock	Global ex-US Stock	Global Stock	Private Equity	Cash	Core Bond	LT Core Bond	TIPS	High Yield	Private Credit	Dev ex-US Bond (Hdg)	US RES	Global RES	Private RE	Cmdty	Real Assets	US CPI
Compound Return (%)	5.50	6.50	6.75	6.85	6.15	9.00	3.85	4.85	4.80	4.05	6.20	8.35	3.05	5.75	5.90	6.00	6.10	6.60	2.25
Expected Risk (%)	17.00	18.00	26.00	19.05	17.10	29.65	0.75	4.70	9.85	6.00	10.00	12.75	4.00	17.50	16.45	13.90	16.00	12.35	1.75
Cash Yield (%)	1.50	3.10	2.60	2.95	2.05	0.00	3.85	4.95	5.15	4.35	9.40	5.00	3.60	4.05	4.05	2.30	3.85	3.25	0.00
Growth Exposure	8.00	8.00	8.00	8.00	8.00	14.00	0.00	-0.95	-2.40	-3.00	4.00	5.10	-1.00	6.00	6.00	3.50	0.00	2.70	0.00
Inflation Exposure	-3.00	0.00	5.00	1.45	-1.30	-3.75	0.00	-2.50	-6.80	2.50	-1.00	-1.50	-3.00	1.00	1.80	1.00	12.00	5.25	1.00
Correlations																			
US Stock	1.00																		
Dev ex-US Stock (USD)	0.81	1.00																	
Emerging Mkt Stock	0.74	0.74	1.00																
Global ex-US Stock	0.84	0.95	0.89	1.00															
Global Stock	0.95	0.91	0.84	0.94	1.00														
Private Equity	0.72	0.63	0.61	0.67	0.73	1.00													
Cash Equivalents	-0.05	-0.09	-0.05	-0.08	-0.06	0.00	1.00												
Core Bond	0.28	0.13	0.00	0.08	0.20	0.30	0.18	1.00											
LT Core Bond	0.31	0.15	0.01	0.11	0.24	0.31	0.11	0.94	1.00										
TIPS	-0.05	0.00	0.15	0.06	-0.01	-0.03	0.20	0.60	0.48	1.00									
High Yield Bond	0.54	0.39	0.49	0.46	0.53	0.31	-0.10	0.24	0.32	0.05	1.00								
Private Credit	0.68	0.55	0.58	0.60	0.68	0.44	0.00	0.24	0.30	0.00	0.76	1.00							
Dev ex-US Bond (Hdg)	0.16	0.25	-0.01	0.16	0.17	0.26	0.10	0.68	0.66	0.39	0.26	0.22	1.00						
US RE Securities	0.58	0.47	0.44	0.49	0.57	0.49	-0.05	0.17	0.22	0.10	0.56	0.62	0.05	1.00					
Global RE Securities	0.64	0.57	0.54	0.60	0.65	0.55	-0.05	0.17	0.21	0.11	0.61	0.68	0.04	0.96	1.00				
Private Real Estate	0.55	0.45	0.45	0.49	0.54	0.50	-0.05	0.19	0.25	0.09	0.58	0.63	0.05	0.79	0.78	1.00			
Commodities	0.25	0.34	0.39	0.38	0.32	0.28	0.00	-0.03	-0.03	0.25	0.29	0.29	-0.10	0.25	0.28	0.25	1.00		
Real Assets	0.62	0.63	0.65	0.69	0.67	0.57	-0.03	0.22	0.24	0.30	0.64	0.69	0.04	0.78	0.84	0.76	0.64	1.00	
Inflation (CPI)	-0.10	-0.15	-0.13	-0.15	-0.13	-0.10	0.10	-0.12	-0.12	0.15	-0.08	0.00	-0.08	0.05	0.04	0.05	0.44	0.22	1.00