Connecticut Pension Stress Test – November 2022
State Employees Retirement System (SERS) and Teacher Retirement System (TRS)

Pursuant to Title 4, Ch 50m, Sec 4-68ee of the Connecticut General Statutes, this report contains a stress test analysis for the Connecticut State Employees Retirement System (SERS) and the Teachers Retirement System (TRS).

This analysis was prepared for the Connecticut Office of Policy and Management by GovInvest based on assumptions and other data available in the 2021 actuarial valuation for SERS, 2020 biennial valuation for TRS, and other public documents. In addition, the TRS results incorporate reported investment experience, retiree COLA experience, and calculated ADEC from the recently published 2022 actuarial valuation. Baseline projections are designed to match as closely as possible, but not replicate, official projections developed by plan actuaries.

The report is divided into four sections: 1) baseline projection 2) stress test analysis 3) sensitivity analysis and 4) budget impact analysis. Results are presented on a combined basis that includes both SERS and TRS to provide a wholistic view of pension funding and costs from a statewide perspective. Plan-specific results for the stress test are included as Exhibits 1-6.

Key Findings from the analysis include:

- Baseline contribution requirements are projected grow from current levels of $3.4 billion to $3.7 billion by FY 2027 and then remain stable for the next 20 years until the unfunded liability is paid off in FY 2047. This combined result reflects modest contribution reductions for SERS over this time period and modest growth for TRS.

- Without the FY 2022 supplemental payments totaling $4.1 billion, the annual contribution plateau would have occurred around $4 billion and cost the state an additional $8 billion over the projection period.

- Funding levels would continue to improve over time even when investments underperform if contributions are adjusted according to the funding policy. Maintaining baseline contribution patterns in an asset shock scenario, which includes a significant asset loss in FY 2023, instead of following the Actuarially Determined Contribution (ADC) would lead to slower funding recovery for both SERS and TRS and persistently low operating cash flow ratio for SERS.

- In the near term, the asset shock scenario causes contribution requirements to grow faster than projected revenues over the next 5 years, potentially leading to budget crowd out. Increases at TRS drive this growth, increasing 10% per year on average from FY 24-28 under these scenarios.

Baseline Projections

The starting point for this risk assessment is a baseline projection of combined SERS and TRS funding levels and required employer contributions under a scenario where all assumptions are met each year. The first year of the projection reflects the funded status of the plans at the start of FY 22 on a market value basis- 44% for SERS and 61% for TRS- including the impacts of strong FY 2021 investment performance above 25% and supplemental contributions of $1.6 billion. The second year reflects the net funding decline that occurred after accounting for FY 2022 investment losses and another $4.1 billion in supplemental contributions. Beyond FY 2023, the projection assumes investment performance meets the 6.9% assumed rate of return and does not anticipate any additional supplemental contributions.

As shown in Figure 1, the combined unfunded liability initially rises by 5% and then falls back to FY 2022 levels within four years.   From there, the plans follow a steady path of paying down the unfunded liability until reaching full funding in FY 2047. Employer contributions experience some volatility in the initial years of the projection period- fluctuating above and below 40% of payroll before declining steadily as a percentage of payroll beginning in FY 2028 until the unfunded liability is eliminated in FY 2047.

Figure 1: SERS & TRS Unfunded Liability & Employer Contribution Rate- Baseline
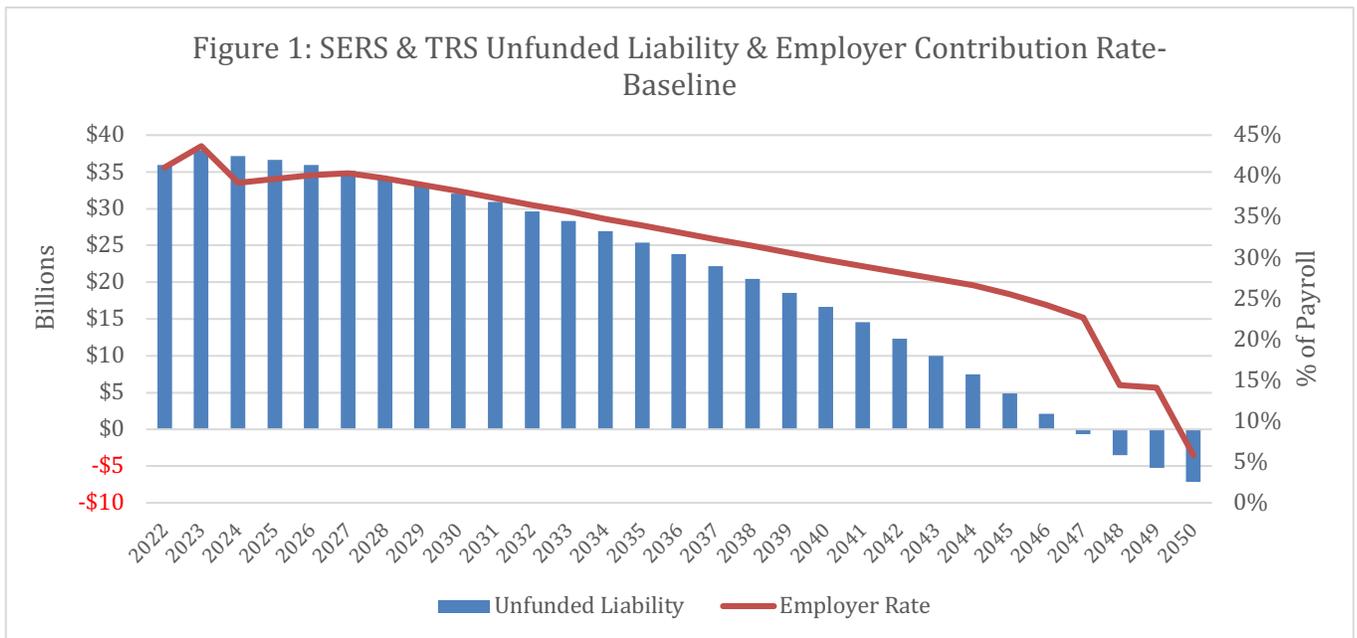
As noted previously, these projections include the recent supplemental payments totaling more than $4B. Had these additional payments not occurred, annual contributions would have been approximately $300 million more each year, on average. Over 28 years, this translates to a savings of more than $8 billion.

Stress Test Analysis

Traditionally, of all aspects of pension funding, investment returns have the largest impact on the plan's funded percentage and contribution requirements. This impact is even more significant if the plan sponsor does not continue make the Actuarially Determined Contribution (ADC).

Scenario #1: Investment Returns Above and Below

Assumptions	Baseline	2% Above	2% Below
Investment Return	6.9%	8.9%	4.9%
Contribution Behavior	Full ADC	Full ADC	Full ADC

Scenario #1 analyzes the sensitivity of pension funding levels and employer contribution requirements to investment returns above and below the 6.9% assumed rate.

Figure 2: Funded Ratio- SERS & TRS
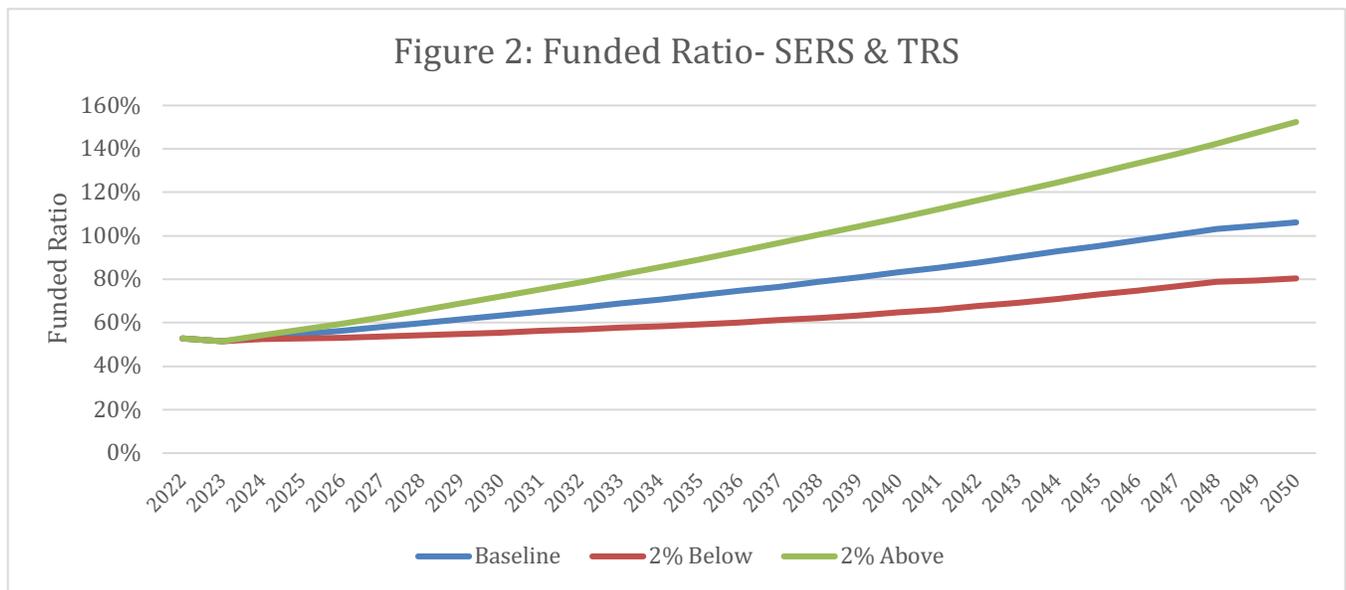
Combined funding levels improve under all three scenarios as asset levels rise when the State continues to make the ADC. The excess investment returns accelerate the full funding date by nine years in the 2% Above scenario while funding peaks at 80% when returns fall short of the assumed rate. This is true even though the ADC is lower under the 2% Above scenario, and higher under the 2% Below scenario, as shown in Figure 3.

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Figure 3: Employer Contribution Rates- SERS & TRS
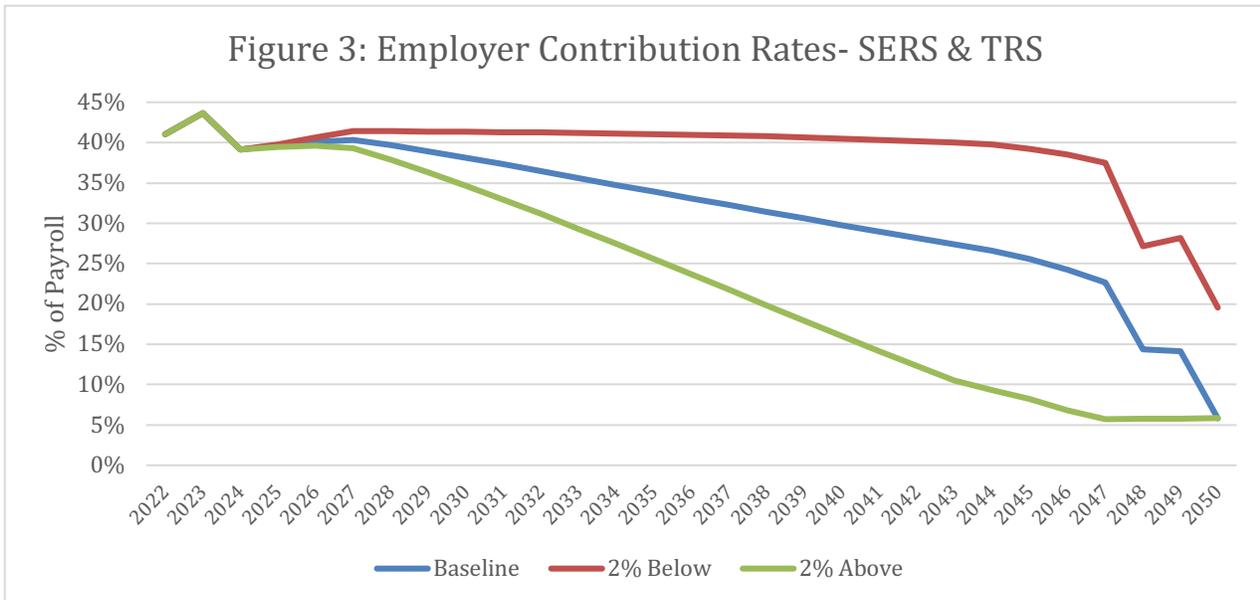
Contribution rates under the baseline and 2% Above scenarios decline from current levels while rates stabilize around 40% when returns fall short. In dollars over the life of the projection period, these rates generate total contributions that range from $71B in the 2% Above scenario to $130B in the 2% Below scenario.

Scenario #2: -20% Asset Shock

Assumptions	Baseline	2% Below	Asset Shock
Investment Return	6.9%	4.9%	FY 23: -20% FY 24-25: 10% FY 25-50: 6.9%
Contribution Behavior	Full ADC	Full ADC	Full ADC

Scenario #2 analyzes the impacts of a large investment loss and recovery period followed by expected returns over the long term.

Figure 4: Funded Ratio- SERS & TRS
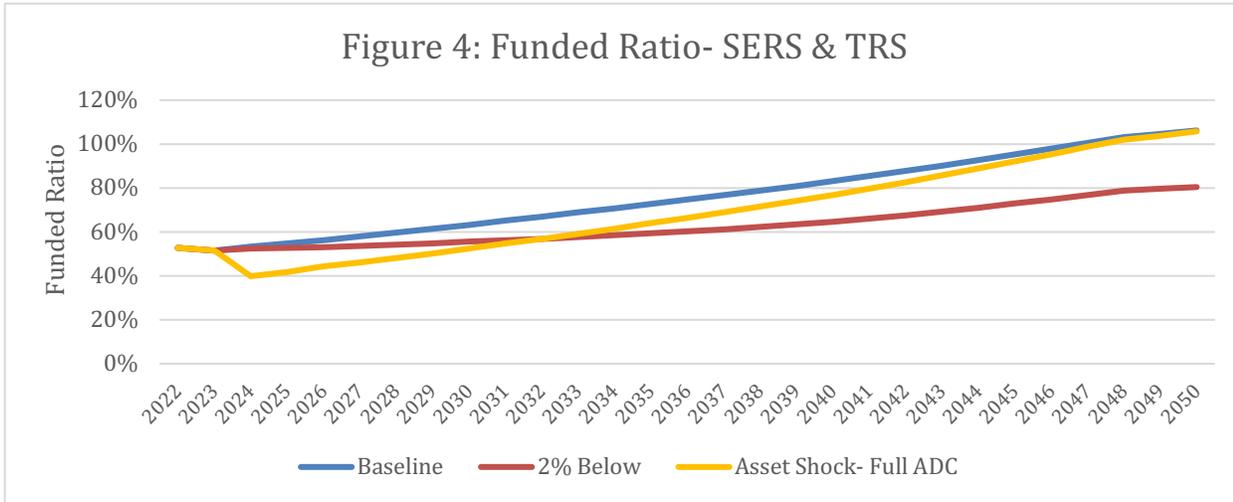
The initial asset loss in FY 2023 drives funding levels down to 40% in FY 24, 13 percentage points below the baseline. Two years of positive 10% returns offset a portion of the initial loss and then funding steadily improves as contribution requirements rise and asset levels recover.

Figure 5: Employer Contribution Rates- SERS & TRS
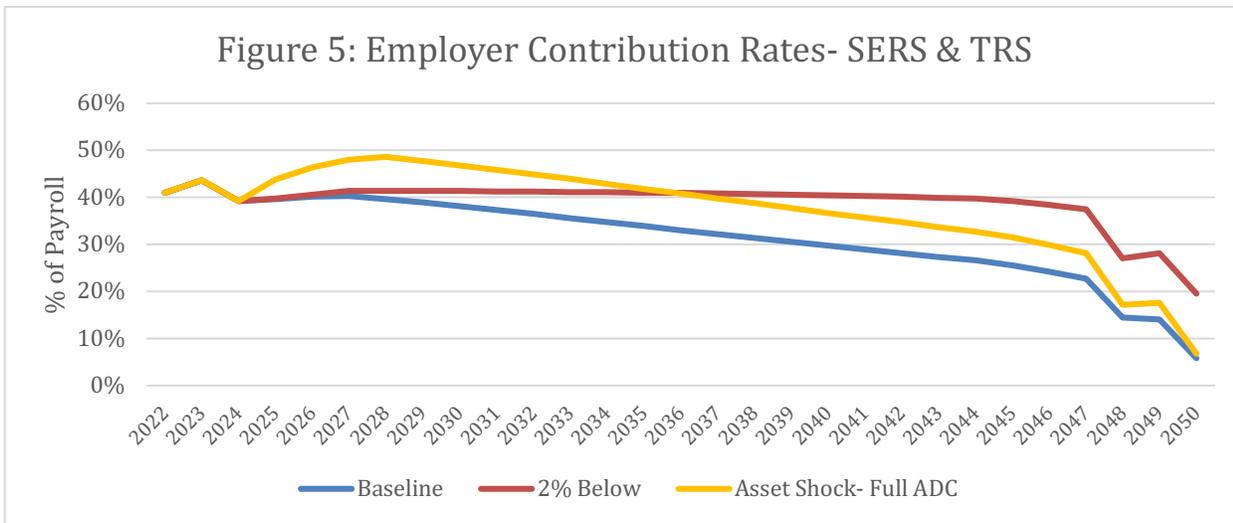
The asset shock causes contribution rates to rise from 39% in FY 24 to 49% in FY 2028 before declining back below 39% by FY 2038. Combined total contributions under the Asset Shock scenario over the full projection period reach $121 B.

Scenario #3: Asset Shock with Contribution Risk

Assumptions	Asset Shock, Full ADC	Asset Shock, Partial ADC
Investment Return	FY 23: -20% FY 24-25: 10% FY 25-50: 6.9%	FY 23: -20% FY 24-25: 10% FY 25-50: 6.9%
Contribution Behavior	Full ADC	Baseline Contributions

Scenario #3 analyzes the impact on plan funding under an asset shock scenario if contributions are held constant at baseline levels instead of rising as required under the funding policy.

Figure 6: Funded Ratio- SERS & TRS
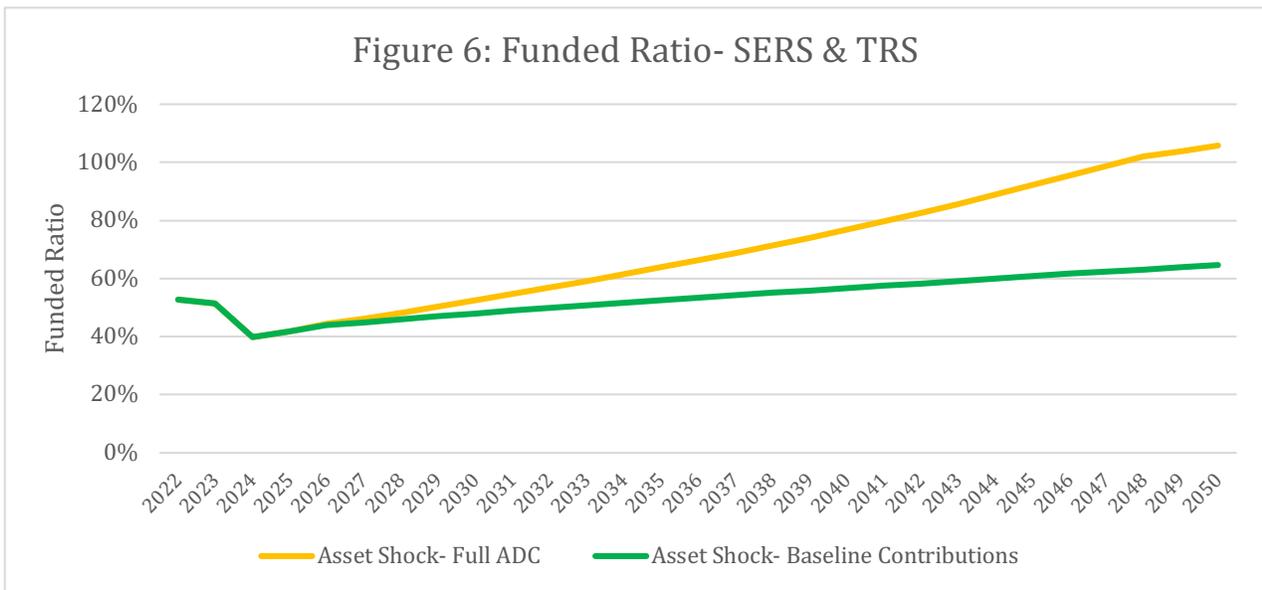
The funded ratio and asset levels grow at a slower pace under the asset shock scenario if contributions do not rise above the baseline amounts, reaching just 65% funded by the end of the projection compared to more than 100% if contributions adjust. This analysis demonstrates the importance of making full payments as the additional contributions are necessary to achieve full funding. For SERS, full contributions also prevent the operating cash flow ratio from reaching -5% in FY 2030 and remaining at or below that level for the duration of the projection period.

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Scenario #4: High Retiree COLAs

Assumptions	Baseline	Max COLA
Annual COLA Amount	Plan Assumptions	FY 23-26: Maximum FY 27 – 50: Plan Assumptions
Investment Return	6.9%	6.9%
Contribution Behavior	Full ADC	Full ADC

Scenario #4 analyzes the impact of multiple years of elevated inflation levels on retiree COLA benefits, plan funding and contribution requirements. As summarized in Table 1, retiree COLA benefits vary by plan and tier, but are generally tied to CPI with a cap. In addition, the two most recent TRS tiers include a second requirement for prior year investment returns to meet certain thresholds. For this scenario assuming 6.9% investment returns, the TRS rules prevent the higher COLA payment from occurring, revealing a meaningful difference between the impact on SERS and TRS.

Table 1: SERS and TRS COLA Provisions

Plan	Tier	Plan Assumption	Maximum
SERS	Pre- 1980	3.25%	5%
	1980-1997	3%	3%
	1997-2011	2.6%	6%
	2011-2022	2.25%	7.5%
	Post 2022	1.95% 30-month COLA moratorium	7.5% 30-month COLA moratorium
TRS	Pre 1992	3%	5%
	1992-2007	2%	• 6% COLA if investment return above 8.5% • 1% COLA if investment return below 8.5%.
	Post 2007	1.75%	• 5% COLA if investment return above 11.5% • 3% COLA if investment return between 8.5%. and 11.5%. • 1% COLA if investment return below 8.5%

Source: SERS and TRS actuarial valuations.

Figure 7: Funded Ratio- SERS & TRS
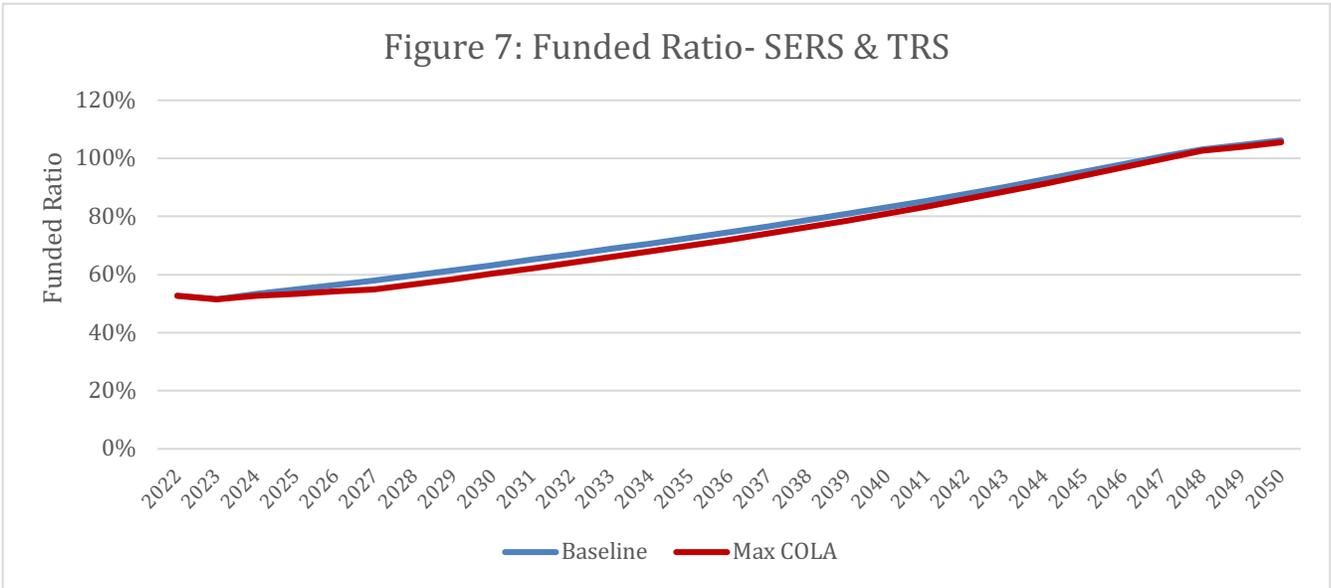
Four years of maximum COLA benefits have three impacts on plan funding relative to the baseline. This includes a higher actuarially accrued liability, higher benefit payments, and lower dollar amount of investment returns due to a smaller asset base. In combination, these factors keep funding levels two percentage points below the baseline on average over the projection period while still achieving full funding by 2047.

Figure 8: Employer Contribution Rates- SERS & TRS
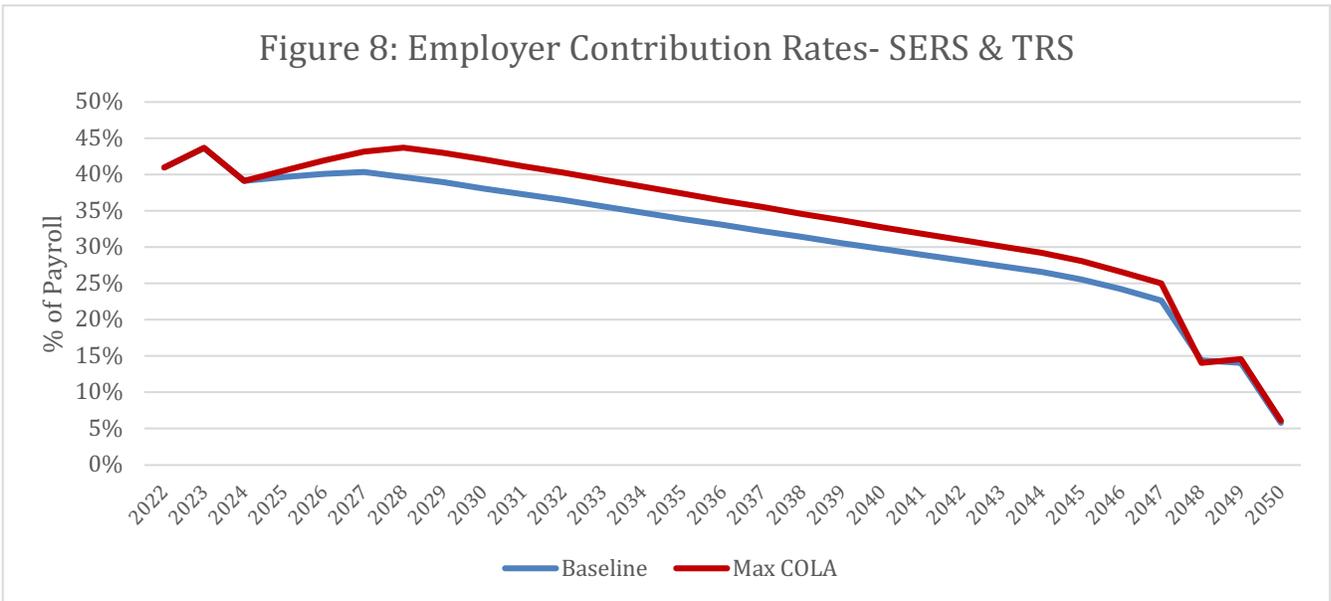
Lower funding levels cause contributions to rise above the baseline, reaching nearly 44% of payroll in 2028 before declining over the duration of the projection. These increases are concentrated in the SERS plan as the TRS COLA rules related to investment performance prevent the higher payments from occurring in this scenario.

Sensitivity Analysis

Table 2 below summarizes the results of the SERS and TRS sensitivity analysis included in each plan's 2021 GASB 67 disclosure. This analysis demonstrates how changes in the plan investment return assumption impact the reported liability and funded ratio. In addition to the three discount rates included in GASB 67, we also include a measure of the liability at 3.5% which serves as an estimate of the Low Default Risk Obligation Measure (LDROM) outlined in the recently update ASOP No. 4.

Table 2:
2021 Net Pension Liability Sensitivity Analysis to Alternative Investment Return Assumptions

$ in Millions	Expected Returns (6.9%)	High Returns (7.9%)	Low Returns (5.9%)	LDROM (3.5%)
SERS				
Assets	$17,081	$17,081	$17,081	$17,081
Liability	$38,344	$34,528	$42,922	$46,118
Net Pension Liability	$21,264	$17,447	$25,841	$29,037
Funded Ratio	45%	49%	40%	37%
TRS				
Assets	$23,117	$23,117	$23,117	$23,117
Liability	$38,043	$34,037	$42,868	$59,475
Net Pension Liability	$14,926	$10,920	$19,751	$36,358
Funded Ratio	61%	68%	54%	39%

Source: SERS 2021 GASB 67. TRS 2021 GASB 67. GovInvest analysis.

Budget Impact Analysis

For budget planning purposes it can be useful to take a closer look at the period of rising contribution rates under the asset shock scenario to understand how those translate to required annual payments. Chart 1 below compares annual employer contributions for SERS and TRS under baseline and asset shock from FY 2023-2028.

Figure 9: Employer Contributions- SERS and TRS
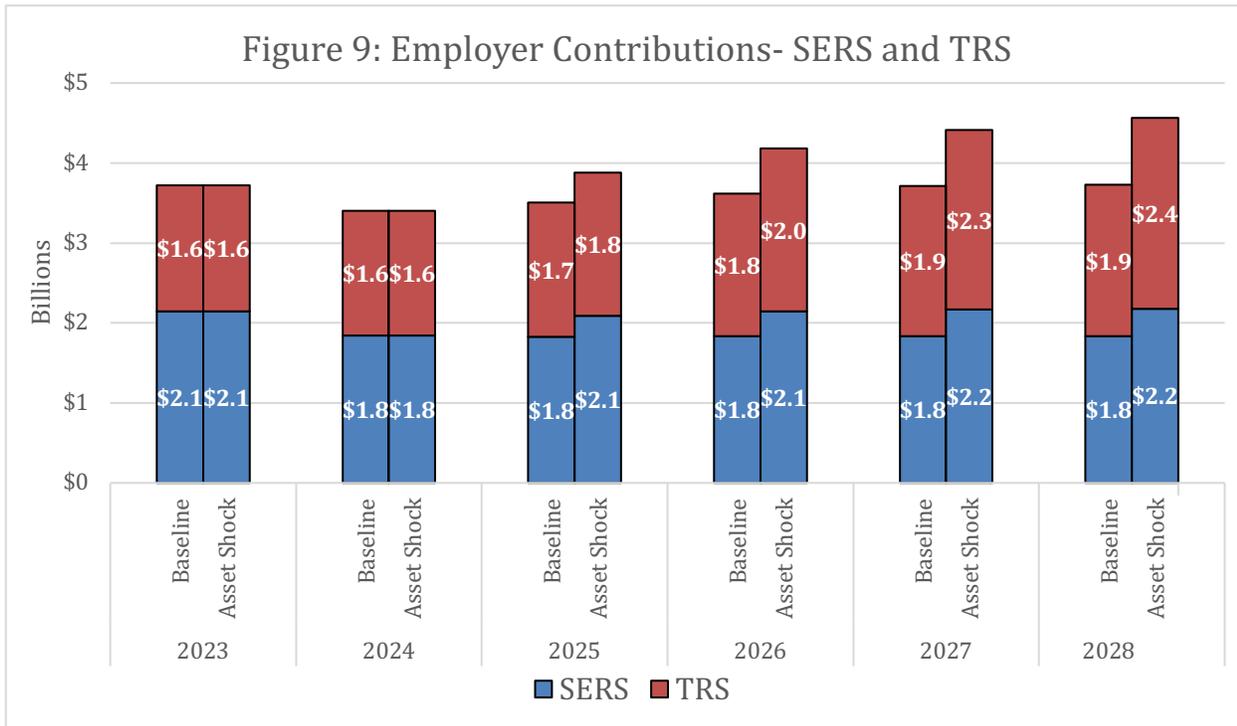
The combined contribution in the baseline totals $21.7 billion over 6 years with annual contributions ranging from $3.4B to $3.7B. Following an initial contribution decline for each individual plan and on a combined basis in FY 2024, SERS payments stabilize at $1.8 B in the baseline while TRS returns to growth. In the asset shock the SERS payments jump by 13% in FY 2025 and then rises by approximately 1% per year through FY 2028 while the average annual contribution increase for TRS accelerates from 5% in the baseline to 9% in the asset shock.

To provide perspective around the scale of these increases and potential impact to the Connecticut budget overall, table 3 presents the combined annual employer contribution as a share of general fund revenue. General fund revenues for FY 2023-2026 reflect the projections included in the 2022 Fiscal Accountability Report published by OPM in November 2022. To extend the projection 2 additional years, GovInvest applied the 2.3% average annual revenue growth rate for FY 23-FY 26 to FY 2027 and 2028.

Table 3: SERS & TRS Pension Costs Compared to General Fund Revenue

	GF Revenue ($B)	Contributions ($B)		Contributions (% of revenue)	
		Baseline	Asset Shock	Baseline	Asset Shock
FY 2023	$23.0	$3.7	$3.7	16.2%	16.2%
FY 2024	$22.3	$3.4	$3.4	15.2%	15.2%
FY 2025	$22.9	$3.5	$3.9	15.3%	17.0%
FY 2026	$23.6	$3.6	$4.2	15.4%	17.7%
FY 2027	$24.1	$3.7	$4.4	15.4%	18.3%
FY 2028	$24.7	$3.7	$4.6	15.1%	18.5%

Source: Connecticut OPM Fiscal Accountability Report FY 2023-2026 and GovInvest analysis.
Note: Assumes 2.3% revenue growth in FY 2027 and 2028.

As shown in Table 3, baseline pension contributions decline in FY 24 and then stabilize around 15% of revenue while they grow to more than 18% in the asset shock.   This highlights a risk of potential budget crowd as contributions would need to rise faster than revenue in order to pay down the additional unfunded liabilities resulting from the 20% loss.

Exhibit 1
Baseline Projections: Connecticut State Employees Retirement System and Connecticut State Teachers' Retirement System

$B

| | | SERS | | | | | | | | | | | TRS | | | | | | | | |
| | | Funding - Market Value | | | | Cash Flow & Investment | | | | Employer Cost | | | Funding - Market Value | | | | Cash Flow & Investment | | | | Employer Cost | |
Fiscal Year	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll
2022	$3.8	$38.4	$17.1	$21.3	44%	$5.4	($2.4)	17.6%	($1.4)	$2.0	52%	$4.5	$37.9	$23.2	$14.7	61%	$2.7	($2.2)	1.9%	($2.0)	$1.4	32%
2023	$3.9	$38.6	$18.7	$19.9	48%	$2.3	($2.4)	-0.5%	$1.3	$2.1	55%	$4.6	$39.6	$21.6	$18.0	55%	$1.9	($2.4)	-2.1%	$1.5	$1.6	34%
2024	$3.9	$39.1	$19.8	$19.2	51%	$2.0	($2.5)	-2.4%	$1.4	$1.8	47%	$4.8	$40.5	$22.6	$17.9	56%	$1.9	($2.4)	-2.4%	$1.5	$1.6	33%
2025	$4.0	$39.5	$20.7	$18.8	52%	$2.0	($2.6)	-2.7%	$1.4	$1.8	46%	$4.9	$41.4	$23.6	$17.8	57%	$2.0	($2.5)	-1.9%	$1.6	$1.7	34%
2026	$4.0	$40.0	$21.6	$18.4	54%	$2.0	($2.7)	-3.0%	$1.5	$1.8	46%	$5.0	$42.3	$24.8	$17.6	59%	$2.1	($2.5)	-1.6%	$1.7	$1.8	36%
2027	$4.1	$40.3	$22.4	$17.9	56%	$2.0	($2.7)	-3.2%	$1.5	$1.8	45%	$5.1	$43.3	$26.1	$17.2	60%	$2.2	($2.6)	-1.4%	$1.8	$1.9	37%
2028	$4.1	$40.6	$23.2	$17.4	57%	$2.0	($2.8)	-3.4%	$1.6	$1.8	45%	$5.3	$44.3	$27.5	$16.8	62%	$2.3	($2.7)	-1.4%	$1.9	$1.9	36%
2029	$4.2	$40.9	$24.0	$16.9	59%	$2.0	($2.9)	-3.6%	$1.6	$1.8	44%	$5.4	$45.3	$29.0	$16.3	64%	$2.3	($2.7)	-1.5%	$2.0	$1.9	35%
2030	$4.2	$41.0	$24.7	$16.3	60%	$2.0	($3.0)	-3.8%	$1.7	$1.8	43%	$5.6	$46.3	$30.5	$15.8	66%	$2.3	($2.8)	-1.6%	$2.1	$1.9	34%
2031	$4.3	$41.2	$25.5	$15.7	62%	$2.1	($3.0)	-3.9%	$1.7	$1.8	43%	$5.7	$47.3	$32.1	$15.2	68%	$2.3	($2.9)	-1.7%	$2.2	$1.9	33%
2032	$4.4	$41.2	$26.2	$15.0	64%	$2.1	($3.1)	-3.9%	$1.8	$1.8	42%	$5.8	$48.4	$33.8	$14.6	70%	$2.3	($2.9)	-1.8%	$2.3	$1.9	33%
2033	$4.5	$41.3	$27.0	$14.3	65%	$2.1	($3.1)	-4.0%	$1.8	$1.8	41%	$6.0	$49.5	$35.5	$14.0	72%	$2.3	($3.0)	-1.9%	$2.4	$1.9	32%
2034	$4.6	$41.2	$27.7	$13.5	67%	$2.1	($3.2)	-4.0%	$1.9	$1.8	40%	$6.2	$50.6	$37.2	$13.4	74%	$2.3	($3.1)	-2.0%	$2.5	$1.9	31%
2035	$4.7	$41.2	$28.5	$12.7	69%	$2.1	($3.2)	-4.1%	$1.9	$1.8	39%	$6.3	$51.7	$39.0	$12.7	75%	$2.4	($3.2)	-2.1%	$2.7	$1.9	30%
2036	$4.8	$41.1	$29.2	$11.9	71%	$2.1	($3.3)	-4.0%	$2.0	$1.8	38%	$6.5	$52.9	$40.9	$12.0	77%	$2.4	($3.2)	-2.1%	$2.8	$1.9	30%
2037	$4.9	$41.0	$30.0	$11.0	73%	$2.1	($3.3)	-4.0%	$2.0	$1.8	37%	$6.7	$54.0	$42.8	$11.2	79%	$2.4	($3.3)	-2.2%	$2.9	$1.9	29%
2038	$5.0	$40.9	$30.9	$10.0	75%	$2.1	($3.3)	-3.9%	$2.1	$1.8	36%	$6.9	$55.2	$44.8	$10.4	81%	$2.4	($3.4)	-2.2%	$3.1	$1.9	28%
2039	$5.1	$40.8	$31.7	$9.0	78%	$2.1	($3.3)	-3.8%	$2.1	$1.8	35%	$7.1	$56.5	$46.9	$9.6	83%	$2.4	($3.5)	-2.2%	$3.2	$1.9	27%
2040	$5.3	$40.6	$32.7	$7.9	80%	$2.1	($3.3)	-3.7%	$2.2	$1.8	34%	$7.3	$57.7	$49.1	$8.7	85%	$2.5	($3.5)	-2.2%	$3.3	$1.9	27%
2041	$5.4	$40.5	$33.7	$6.8	83%	$2.1	($3.3)	-3.6%	$2.3	$1.8	33%	$7.5	$59.0	$51.3	$7.7	87%	$2.5	($3.6)	-2.2%	$3.5	$1.9	26%
2042	$5.6	$40.3	$34.8	$5.6	86%	$2.1	($3.3)	-3.3%	$2.4	$1.8	32%	$7.7	$60.4	$53.7	$6.7	89%	$2.5	($3.7)	-2.2%	$3.7	$2.0	25%
2043	$5.7	$40.3	$36.0	$4.3	89%	$2.1	($3.2)	-3.1%	$2.4	$1.8	31%	$8.0	$61.8	$56.2	$5.7	91%	$2.5	($3.7)	-2.2%	$3.8	$2.0	25%
2044	$5.9	$40.2	$37.3	$2.9	93%	$2.1	($3.2)	-2.9%	$2.5	$1.8	30%	$8.2	$63.3	$58.8	$4.6	93%	$2.6	($3.8)	-2.1%	$4.0	$2.0	24%
2045	$6.1	$40.2	$38.7	$1.5	96%	$2.1	($3.2)	-2.9%	$2.6	$1.7	28%	$8.5	$64.9	$61.5	$3.4	95%	$2.6	($3.9)	-2.1%	$4.2	$2.0	24%
2046	$6.2	$40.2	$40.3	$0.0	100%	$2.0	($3.2)	-2.9%	$2.7	$1.6	26%	$8.7	$66.6	$64.5	$2.1	97%	$2.6	($3.9)	-2.0%	$4.4	$2.0	23%
2047	$6.4	$40.3	$41.8	-$1.5	104%	$1.9	($3.1)	-2.8%	$2.8	$1.6	24%	$9.0	$68.4	$67.6	$0.8	99%	$2.6	($4.0)	-2.1%	$4.6	$1.9	21%
2048	$6.6	$40.5	$43.5	-$3.0	107%	$0.6	($3.1)	-5.7%	$2.9	$0.2	3%	$9.3	$70.3	$70.8	-$0.5	101%	$2.7	($4.0)	-1.8%	$4.8	$2.1	22%
2049	$6.8	$40.7	$43.9	-$3.3	108%	$0.6	($3.1)	-5.5%	$2.9	$0.2	3%	$9.6	$72.4	$74.4	-$2.0	103%	$2.8	($4.1)	-1.8%	$5.1	$2.1	22%
2050	$7.0	$40.9	$44.4	-$3.5	109%	$0.6	($3.0)	-5.3%	$3.0	$0.2	3%	$9.9	$74.5	$78.1	-$3.6	105%	$1.4	($4.2)	-3.5%	$5.3	$0.7	8%

Exhibit 2
2% Below Scenario: Connecticut State Employees Retirement System and Connecticut State Teachers' Retirement System

$B   SERS   TRS

		Funding - Market Value				Cash Flow & Investment				Employer Cost			Funding - Market Value				Cash Flow & Investment				Employer Cost	
Fiscal Year	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll
2022	$3.8	$38.4	$17.1	$21.3	44%	$5.4	($2.4)	17.6%	($1.4)	$2.0	52%	$4.5	$37.9	$23.2	$14.7	61%	$2.7	($2.2)	1.9%	($2.0)	$1.4	32%
2023	$3.9	$38.6	$18.7	$19.9	48%	$2.3	($2.4)	-0.5%	$0.9	$2.1	55%	$4.6	$39.6	$21.6	$18.0	55%	$1.9	($2.4)	-2.1%	$1.0	$1.6	34%
2024	$3.9	$39.1	$19.5	$19.6	50%	$2.0	($2.5)	-2.4%	$0.9	$1.8	47%	$4.8	$40.5	$22.2	$18.3	55%	$1.9	($2.4)	-2.4%	$1.1	$1.6	33%
2025	$4.0	$39.5	$19.9	$19.6	50%	$2.0	($2.6)	-2.8%	$1.0	$1.8	46%	$4.9	$41.4	$22.7	$18.7	55%	$2.0	($2.5)	-2.0%	$1.1	$1.7	35%
2026	$4.0	$40.0	$20.3	$19.6	51%	$2.0	($2.7)	-3.0%	$1.0	$1.9	46%	$5.0	$42.3	$23.4	$19.0	55%	$2.2	($2.5)	-1.6%	$1.1	$1.8	36%
2027	$4.1	$40.3	$20.7	$19.6	51%	$2.1	($2.7)	-3.3%	$1.0	$1.9	46%	$5.1	$43.3	$24.1	$19.1	56%	$2.3	($2.6)	-1.2%	$1.2	$1.9	38%
2028	$4.1	$40.6	$21.0	$19.6	52%	$2.1	($2.8)	-3.5%	$1.0	$1.9	46%	$5.3	$44.3	$25.0	$19.2	57%	$2.4	($2.7)	-1.2%	$1.2	$2.0	38%
2029	$4.2	$40.9	$21.3	$19.6	52%	$2.1	($2.9)	-3.6%	$1.0	$1.9	46%	$5.4	$45.3	$26.0	$19.3	57%	$2.4	($2.7)	-1.1%	$1.3	$2.0	38%
2030	$4.2	$41.0	$21.6	$19.5	53%	$2.2	($3.0)	-3.8%	$1.0	$1.9	46%	$5.6	$46.3	$26.9	$19.4	58%	$2.5	($2.8)	-1.1%	$1.3	$2.1	38%
2031	$4.3	$41.2	$21.8	$19.4	53%	$2.2	($3.0)	-3.9%	$1.0	$2.0	46%	$5.7	$47.3	$27.9	$19.4	59%	$2.5	($2.9)	-1.1%	$1.4	$2.1	38%
2032	$4.4	$41.2	$22.0	$19.3	53%	$2.2	($3.1)	-3.8%	$1.1	$2.0	46%	$5.8	$48.4	$29.0	$19.4	60%	$2.6	($2.9)	-1.1%	$1.4	$2.2	38%
2033	$4.5	$41.3	$22.2	$19.0	54%	$2.3	($3.1)	-3.8%	$1.1	$2.1	46%	$6.0	$49.5	$30.1	$19.4	61%	$2.7	($3.0)	-1.1%	$1.5	$2.3	38%
2034	$4.6	$41.2	$22.4	$18.8	54%	$2.3	($3.2)	-3.8%	$1.1	$2.1	46%	$6.2	$50.6	$31.2	$19.4	62%	$2.7	($3.1)	-1.1%	$1.5	$2.3	38%
2035	$4.7	$41.2	$22.7	$18.5	55%	$2.4	($3.2)	-3.7%	$1.1	$2.1	46%	$6.3	$51.7	$32.4	$19.3	63%	$2.8	($3.2)	-1.0%	$1.6	$2.4	38%
2036	$4.8	$41.1	$22.9	$18.2	56%	$2.4	($3.3)	-3.6%	$1.1	$2.2	45%	$6.5	$52.9	$33.7	$19.2	64%	$2.9	($3.2)	-1.0%	$1.6	$2.4	38%
2037	$4.9	$41.0	$23.2	$17.8	57%	$2.5	($3.3)	-3.4%	$1.1	$2.2	45%	$6.7	$54.0	$35.0	$19.1	65%	$3.0	($3.3)	-1.0%	$1.7	$2.5	38%
2038	$5.0	$40.9	$23.5	$17.4	57%	$2.5	($3.3)	-3.2%	$1.1	$2.3	45%	$6.9	$55.2	$36.4	$18.9	66%	$3.1	($3.4)	-0.9%	$1.8	$2.6	38%
2039	$5.1	$40.8	$23.9	$16.9	59%	$2.6	($3.3)	-3.0%	$1.2	$2.3	45%	$7.1	$56.5	$37.8	$18.7	67%	$3.1	($3.5)	-0.8%	$1.8	$2.7	38%
2040	$5.3	$40.6	$24.3	$16.3	60%	$2.6	($3.3)	-2.7%	$1.2	$2.3	44%	$7.3	$57.7	$39.3	$18.4	68%	$3.2	($3.5)	-0.8%	$1.9	$2.7	38%
2041	$5.4	$40.5	$24.8	$15.6	61%	$2.7	($3.3)	-2.4%	$1.2	$2.4	44%	$7.5	$59.0	$40.9	$18.1	69%	$3.3	($3.6)	-0.7%	$2.0	$2.8	38%
2042	$5.6	$40.3	$25.4	$14.9	63%	$2.8	($3.3)	-1.9%	$1.2	$2.4	44%	$7.7	$60.4	$42.7	$17.7	71%	$3.4	($3.7)	-0.6%	$2.1	$2.9	37%
2043	$5.7	$40.3	$26.2	$14.1	65%	$2.8	($3.2)	-1.6%	$1.3	$2.5	43%	$8.0	$61.8	$44.5	$17.3	72%	$3.5	($3.7)	-0.5%	$2.2	$3.0	37%
2044	$5.9	$40.2	$27.1	$13.2	67%	$2.9	($3.2)	-1.2%	$1.3	$2.5	43%	$8.2	$63.3	$46.5	$16.9	73%	$3.6	($3.8)	-0.3%	$2.3	$3.1	37%
2045	$6.1	$40.2	$28.1	$12.2	70%	$2.9	($3.2)	-1.0%	$1.4	$2.5	42%	$8.5	$64.9	$48.6	$16.3	75%	$3.8	($3.9)	-0.2%	$2.4	$3.2	37%
2046	$6.2	$40.2	$29.1	$11.1	72%	$2.9	($3.2)	-1.0%	$1.4	$2.5	40%	$8.7	$66.6	$50.9	$15.7	76%	$3.9	($3.9)	-0.1%	$2.5	$3.3	37%
2047	$6.4	$40.3	$30.3	$10.1	75%	$2.9	($3.1)	-0.8%	$1.5	$2.5	39%	$9.0	$68.4	$53.3	$15.1	78%	$3.9	($4.0)	-0.1%	$2.6	$3.3	36%
2048	$6.6	$40.5	$31.5	$9.0	78%	$1.2	($3.1)	-6.0%	$1.5	$0.8	12%	$9.3	$70.3	$55.9	$14.4	79%	$4.2	($4.0)	0.3%	$2.7	$3.5	38%
2049	$6.8	$40.7	$31.1	$9.6	76%	$1.4	($3.1)	-5.3%	$1.5	$1.0	15%	$9.6	$72.4	$58.8	$13.6	81%	$4.3	($4.1)	0.3%	$2.9	$3.6	38%
2050	$7.0	$40.9	$30.9	$10.0	76%	$1.5	($3.0)	-4.9%	$1.5	$1.1	16%	$9.9	$74.5	$61.9	$12.6	83%	$2.9	($4.2)	-2.1%	$3.0	$2.2	22%

Exhibit 3
2% Above Scenario: Connecticut State Employees Retirement System and Connecticut State Teachers' Retirement System

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		SERS										TRS									
		Funding - Market Value				Cash Flow & Investment				Employer Cost			Funding- Market Value				Cash Flow & Investment				Employer Cost	
Fiscal Year	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll
2022	$3.8	$38.4	$17.1	$21.3	44%	$5.4	($2.4)	17.6%	($1.4)	$2.0	52%	$4.5	$37.9	$23.2	$14.7	61%	$2.7	($2.2)	1.9%	($2.0)	$1.4	32%
2023	$3.9	$38.6	$18.7	$19.9	48%	$2.3	($2.4)	-0.5%	$1.7	$2.1	55%	$4.6	$39.6	$21.6	$18.0	55%	$1.9	($2.4)	-2.1%	$1.9	$1.6	34%
2024	$3.9	$39.1	$20.2	$18.9	52%	$2.0	($2.5)	-2.3%	$1.8	$1.8	47%	$4.8	$40.5	$23.0	$17.5	57%	$1.9	($2.4)	-2.3%	$2.0	$1.6	33%
2025	$4.0	$39.5	$21.5	$18.0	54%	$2.0	($2.6)	-2.7%	$1.9	$1.8	46%	$4.9	$41.4	$24.5	$16.9	59%	$2.0	($2.5)	-1.9%	$2.2	$1.7	34%
2026	$4.0	$40.0	$22.8	$17.1	57%	$2.0	($2.7)	-2.9%	$2.0	$1.8	45%	$5.0	$42.3	$26.2	$16.1	62%	$2.1	($2.5)	-1.6%	$2.3	$1.8	35%
2027	$4.1	$40.3	$24.2	$16.1	60%	$2.0	($2.7)	-3.1%	$2.1	$1.8	44%	$5.1	$43.3	$28.1	$15.2	65%	$2.2	($2.6)	-1.5%	$2.5	$1.8	35%
2028	$4.1	$40.6	$25.5	$15.1	63%	$2.0	($2.8)	-3.3%	$2.2	$1.8	43%	$5.3	$44.3	$30.2	$14.1	68%	$2.2	($2.7)	-1.7%	$2.7	$1.8	34%
2029	$4.2	$40.9	$26.9	$13.9	66%	$2.0	($2.9)	-3.5%	$2.4	$1.7	42%	$5.4	$45.3	$32.3	$12.9	71%	$2.1	($2.7)	-1.9%	$2.9	$1.7	32%
2030	$4.2	$41.0	$28.3	$12.7	69%	$1.9	($3.0)	-3.7%	$2.5	$1.7	40%	$5.6	$46.3	$34.6	$11.7	75%	$2.1	($2.8)	-2.0%	$3.0	$1.7	30%
2031	$4.3	$41.2	$29.8	$11.4	72%	$1.9	($3.0)	-3.9%	$2.6	$1.7	39%	$5.7	$47.3	$36.9	$10.4	78%	$2.0	($2.9)	-2.2%	$3.3	$1.6	29%
2032	$4.4	$41.2	$31.2	$10.1	76%	$1.8	($3.1)	-4.0%	$2.7	$1.6	37%	$5.8	$48.4	$39.4	$9.0	81%	$2.0	($2.9)	-2.4%	$3.5	$1.6	27%
2033	$4.5	$41.3	$32.7	$8.6	79%	$1.8	($3.1)	-4.1%	$2.8	$1.6	35%	$6.0	$49.5	$41.9	$7.6	85%	$1.9	($3.0)	-2.6%	$3.7	$1.5	25%
2034	$4.6	$41.2	$34.2	$7.1	83%	$1.8	($3.2)	-4.2%	$3.0	$1.5	33%	$6.2	$50.6	$44.5	$6.1	88%	$1.9	($3.1)	-2.7%	$3.9	$1.4	23%
2035	$4.7	$41.2	$35.7	$5.5	87%	$1.7	($3.2)	-4.3%	$3.1	$1.4	31%	$6.3	$51.7	$47.2	$4.6	91%	$1.8	($3.2)	-2.9%	$4.1	$1.4	22%
2036	$4.8	$41.1	$37.3	$3.8	91%	$1.6	($3.3)	-4.3%	$3.3	$1.4	29%	$6.5	$52.9	$49.9	$2.9	94%	$1.7	($3.2)	-3.0%	$4.4	$1.3	20%
2037	$4.9	$41.0	$39.0	$2.0	95%	$1.6	($3.3)	-4.4%	$3.4	$1.3	27%	$6.7	$54.0	$52.8	$1.2	98%	$1.7	($3.3)	-3.1%	$4.6	$1.2	18%
2038	$5.0	$40.9	$40.7	$0.2	99%	$1.5	($3.3)	-4.4%	$3.5	$1.2	25%	$6.9	$55.2	$55.8	-$0.6	101%	$1.6	($3.4)	-3.2%	$4.9	$1.1	16%
2039	$5.1	$40.8	$42.4	-$1.7	104%	$1.4	($3.3)	-4.4%	$3.7	$1.2	23%	$7.1	$56.5	$58.9	-$2.5	104%	$1.5	($3.5)	-3.3%	$5.2	$1.0	15%
2040	$5.3	$40.6	$44.3	-$3.7	109%	$1.4	($3.3)	-4.3%	$3.9	$1.1	20%	$7.3	$57.7	$62.1	-$4.4	108%	$1.4	($3.5)	-3.4%	$5.4	$0.9	13%
2041	$5.4	$40.5	$46.2	-$5.7	114%	$1.3	($3.3)	-4.3%	$4.0	$1.0	18%	$7.5	$59.0	$65.5	-$6.4	111%	$1.4	($3.6)	-3.4%	$5.7	$0.8	11%
2042	$5.6	$40.3	$48.2	-$7.9	120%	$1.2	($3.3)	-4.2%	$4.2	$0.9	16%	$7.7	$60.4	$68.9	-$8.5	114%	$1.3	($3.7)	-3.5%	$6.0	$0.7	9%
2043	$5.7	$40.3	$50.4	-$10.1	125%	$1.1	($3.2)	-4.1%	$4.4	$0.8	14%	$8.0	$61.8	$72.6	-$10.7	117%	$1.2	($3.7)	-3.5%	$6.3	$0.6	8%
2044	$5.9	$40.2	$52.7	-$12.5	131%	$1.1	($3.2)	-4.1%	$4.6	$0.7	12%	$8.2	$63.3	$76.3	-$13.0	121%	$1.2	($3.8)	-3.4%	$6.7	$0.6	7%
2045	$6.1	$40.2	$55.2	-$15.0	137%	$0.9	($3.2)	-4.1%	$4.8	$0.6	9%	$8.5	$64.9	$80.4	-$15.5	124%	$1.2	($3.9)	-3.3%	$7.0	$0.6	7%
2046	$6.2	$40.2	$57.7	-$17.5	143%	$0.7	($3.2)	-4.2%	$5.0	$0.4	6%	$8.7	$66.6	$84.8	-$18.2	127%	$1.3	($3.9)	-3.1%	$7.4	$0.6	7%
2047	$6.4	$40.3	$60.3	-$20.0	150%	$0.6	($3.1)	-4.2%	$5.3	$0.2	3%	$9.0	$68.4	$89.6	-$21.1	131%	$1.3	($4.0)	-3.0%	$7.9	$0.7	7%
2048	$6.6	$40.5	$63.0	-$22.6	156%	$0.6	($3.1)	-3.9%	$5.5	$0.2	3%	$9.3	$70.3	$94.8	-$24.4	135%	$1.3	($4.0)	-2.8%	$8.3	$0.7	7%
2049	$6.8	$40.7	$66.0	-$25.4	162%	$0.6	($3.1)	-3.7%	$5.8	$0.2	3%	$9.6	$72.4	$100.4	-$28.1	139%	$1.4	($4.1)	-2.7%	$8.8	$0.7	8%
2050	$7.0	$40.9	$69.4	-$28.5	170%	$0.6	($3.0)	-3.4%	$6.1	$0.2	3%	$9.9	$74.5	$106.6	-$32.0	143%	$1.4	($4.2)	-2.6%	$9.4	$0.7	8%

Exhibit 4
Asset Shock, Full ADC Scenario: Connecticut State Employees Retirement System and Connecticut State Teachers' Retirement System

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| | | SERS | | | | | | | | | | TRS | | | | | | | | | |
| | | Funding - Market Value | | | | Cash Flow & Investment | | | | Employer Cost | | | Funding- Market Value | | | | Cash Flow & Investment | | | | Employer Cost | |
Fiscal Year	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll
2022	**$3.8**	**$38.4**	**$17.1**	**$21.3**	**44%**	**$5.4**	**($2.4)**	**17.6%**	**($1.4)**	**$2.0**	**52%**	**$4.5**	**$37.9**	**$23.2**	**$14.7**	**61%**	**$2.7**	**($2.2)**	**1.9%**	**($2.0)**	**$1.4**	**32%**
2023	$3.9	$38.6	$18.7	$19.9	48%	$2.3	($2.4)	-0.5%	($3.7)	$2.1	55%	$4.6	$39.6	$21.6	$18.0	55%	$1.9	($2.4)	-2.1%	($4.3)	$1.6	34%
2024	$3.9	$39.1	$14.8	$24.2	38%	$2.0	($2.5)	-3.2%	$1.5	$1.8	47%	$4.8	$40.5	$16.9	$23.6	42%	$1.9	($2.4)	-3.2%	$1.7	$1.6	33%
2025	$4.0	$39.5	$15.8	$23.7	40%	$2.3	($2.6)	-1.9%	$1.6	$2.1	53%	$4.9	$41.4	$18.0	$23.4	43%	$2.1	($2.5)	-1.9%	$1.8	$1.8	37%
2026	$4.0	$40.0	$17.1	$22.9	43%	$2.3	($2.7)	-1.9%	$1.2	$2.1	53%	$5.0	$42.3	$19.4	$22.9	46%	$2.4	($2.5)	-0.8%	$1.3	$2.0	41%
2027	**$4.1**	**$40.3**	**$17.9**	**$22.4**	**44%**	**$2.4**	**($2.7)**	**-2.1%**	**$1.2**	**$2.2**	**53%**	**$5.1**	**$43.3**	**$20.6**	**$22.7**	**48%**	**$2.6**	**($2.6)**	**0.1%**	**$1.4**	**$2.3**	**44%**
2028	$4.1	$40.6	$18.8	$21.9	46%	$2.4	($2.8)	-2.4%	$1.3	$2.2	53%	$5.3	$44.3	$22.1	$22.2	50%	$2.8	($2.7)	0.5%	$1.5	$2.4	45%
2029	$4.2	$40.9	$19.6	$21.3	48%	$2.4	($2.9)	-2.6%	$1.3	$2.2	52%	$5.4	$45.3	$23.7	$21.6	52%	$2.8	($2.7)	0.2%	$1.6	$2.4	44%
2030	$4.2	$41.0	$20.4	$20.6	50%	$2.4	($3.0)	-2.8%	$1.4	$2.2	52%	$5.6	$46.3	$25.4	$20.9	55%	$2.8	($2.8)	0.0%	$1.8	$2.4	43%
2031	$4.3	$41.2	$21.2	$19.9	52%	$2.4	($3.0)	-2.9%	$1.4	$2.2	51%	$5.7	$47.3	$27.1	$20.2	57%	$2.8	($2.9)	-0.3%	$1.9	$2.4	42%
2032	**$4.4**	**$41.2**	**$22.1**	**$19.2**	**54%**	**$2.4**	**($3.1)**	**-2.9%**	**$1.5**	**$2.2**	**50%**	**$5.8**	**$48.4**	**$28.9**	**$19.5**	**60%**	**$2.8**	**($2.9)**	**-0.5%**	**$2.0**	**$2.4**	**41%**
2033	$4.5	$41.3	$22.9	$18.3	56%	$2.4	($3.1)	-3.0%	$1.6	$2.2	49%	$6.0	$49.5	$30.8	$18.7	62%	$2.8	($3.0)	-0.6%	$2.1	$2.4	40%
2034	$4.6	$41.2	$23.8	$17.4	58%	$2.5	($3.2)	-3.0%	$1.6	$2.2	48%	$6.2	$50.6	$32.7	$17.9	65%	$2.8	($3.1)	-0.8%	$2.2	$2.4	39%
2035	$4.7	$41.2	$24.7	$16.5	60%	$2.5	($3.2)	-3.1%	$1.7	$2.2	47%	$6.3	$51.7	$34.7	$17.0	67%	$2.8	($3.2)	-0.9%	$2.4	$2.4	38%
2036	$4.8	$41.1	$25.6	$15.5	62%	$2.5	($3.3)	-3.1%	$1.7	$2.2	46%	$6.5	$52.9	$36.7	$16.1	70%	$2.8	($3.2)	-1.1%	$2.5	$2.4	37%
2037	**$4.9**	**$41.0**	**$26.6**	**$14.5**	**65%**	**$2.5**	**($3.3)**	**-3.0%**	**$1.8**	**$2.2**	**45%**	**$6.7**	**$54.0**	**$38.9**	**$15.2**	**72%**	**$2.9**	**($3.3)**	**-1.2%**	**$2.7**	**$2.4**	**36%**
2038	$5.0	$40.9	$27.6	$13.3	67%	$2.5	($3.3)	-2.9%	$1.9	$2.2	44%	$6.9	$55.2	$41.1	$14.1	74%	$2.9	($3.4)	-1.2%	$2.8	$2.4	35%
2039	$5.1	$40.8	$28.6	$12.1	70%	$2.5	($3.3)	-2.8%	$1.9	$2.2	43%	$7.1	$56.5	$43.4	$13.1	77%	$2.9	($3.5)	-1.3%	$3.0	$2.4	34%
2040	$5.3	$40.6	$29.8	$10.8	73%	$2.5	($3.3)	-2.7%	$2.0	$2.2	42%	$7.3	$57.7	$45.8	$11.9	79%	$2.9	($3.5)	-1.3%	$3.1	$2.4	33%
2041	$5.4	$40.5	$31.0	$9.5	77%	$2.5	($3.3)	-2.6%	$2.1	$2.2	40%	$7.5	$59.0	$48.3	$10.7	82%	$2.9	($3.6)	-1.4%	$3.3	$2.4	32%
2042	**$5.6**	**$40.3**	**$32.3**	**$8.0**	**80%**	**$2.5**	**($3.3)**	**-2.3%**	**$2.2**	**$2.2**	**39%**	**$7.7**	**$60.4**	**$51.0**	**$9.4**	**84%**	**$3.0**	**($3.7)**	**-1.4%**	**$3.5**	**$2.4**	**31%**
2043	$5.7	$40.3	$33.8	$6.5	84%	$2.5	($3.2)	-2.1%	$2.3	$2.2	38%	$8.0	$61.8	$53.8	$8.1	87%	$3.0	($3.7)	-1.4%	$3.7	$2.4	31%
2044	$5.9	$40.2	$35.3	$4.9	88%	$2.5	($3.2)	-1.9%	$2.4	$2.2	37%	$8.2	$63.3	$56.7	$6.7	89%	$3.0	($3.8)	-1.4%	$3.9	$2.4	30%
2045	$6.1	$40.2	$37.1	$3.1	92%	$2.5	($3.2)	-1.9%	$2.5	$2.1	35%	$8.5	$64.9	$59.8	$5.2	92%	$3.0	($3.9)	-1.4%	$4.1	$2.4	29%
2046	$6.2	$40.2	$38.9	$1.4	97%	$2.4	($3.2)	-2.0%	$2.7	$2.0	32%	$8.7	$66.6	$63.1	$3.6	95%	$3.1	($3.9)	-1.3%	$4.3	$2.5	28%
2047	**$6.4**	**$40.3**	**$40.8**	**-$0.5**	**101%**	**$2.3**	**($3.1)**	**-1.9%**	**$2.8**	**$2.0**	**31%**	**$9.0**	**$68.4**	**$66.6**	**$1.9**	**97%**	**$3.0**	**($4.0)**	**-1.4%**	**$4.6**	**$2.4**	**26%**
2048	$6.6	$40.5	$42.8	-$2.3	106%	$0.6	($3.1)	-5.8%	$2.9	$0.2	3%	$9.3	$70.3	$70.2	$0.2	100%	$3.2	($4.0)	-1.2%	$4.8	$2.5	27%
2049	$6.8	$40.7	$43.1	-$2.5	106%	$0.7	($3.1)	-5.4%	$2.9	$0.3	5%	$9.6	$72.4	$74.2	-$1.8	102%	$3.2	($4.1)	-1.2%	$5.1	$2.5	26%
2050	$7.0	$40.9	$43.7	-$2.8	107%	$0.6	($3.0)	-5.4%	$2.9	$0.2	3%	$9.9	$74.5	$78.4	-$3.9	105%	$1.6	($4.2)	-3.3%	$5.3	$0.9	9%

Exhibit 5
Asset Shock, Partial ADC Scenario: Connecticut State Employees Retirement System and Connecticut State Teachers' Retirement System

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		SERS											TRS									
		Funding - Market Value				Cash Flow & Investment				Employer Cost			Funding - Market Value				Cash Flow & Investment				Employer Cost	
Fiscal Year	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll
2022	$3.8	$38.4	$17.1	$21.3	44%	$5.4	($2.4)	17.6%	($1.4)	$2.0	52%	$4.5	$37.9	$23.2	$14.7	61%	$2.7	($2.2)	1.9%	($2.0)	$1.4	32%
2023	$3.9	$38.6	$18.7	$19.9	48%	$2.3	($2.4)	-0.5%	($3.7)	$2.1	55%	$4.6	$39.6	$21.6	$18.0	55%	$1.9	($2.4)	-2.1%	($4.3)	$1.6	34%
2024	$3.9	$39.1	$14.8	$24.2	38%	$2.0	($2.5)	-3.2%	$1.5	$1.8	47%	$4.8	$40.5	$16.9	$23.6	42%	$1.9	($2.4)	-3.2%	$1.7	$1.6	33%
2025	$4.0	$39.5	$15.8	$23.7	40%	$2.0	($2.6)	-3.6%	$1.6	$1.8	46%	$4.9	$41.4	$18.0	$23.4	43%	$2.0	($2.5)	-2.5%	$1.8	$1.7	34%
2026	$4.0	$40.0	$16.8	$23.1	42%	$2.0	($2.7)	-3.8%	$1.1	$1.8	46%	$5.0	$42.3	$19.3	$23.0	46%	$2.1	($2.5)	-2.1%	$1.3	$1.8	36%
2027	$4.1	$40.3	$17.3	$23.0	43%	$2.0	($2.7)	-4.1%	$1.2	$1.8	45%	$5.1	$43.3	$20.2	$23.1	47%	$2.2	($2.6)	-1.8%	$1.4	$1.9	37%
2028	$4.1	$40.6	$17.8	$22.9	44%	$2.0	($2.8)	-4.4%	$1.2	$1.8	45%	$5.3	$44.3	$21.3	$23.0	48%	$2.3	($2.7)	-1.9%	$1.5	$1.9	36%
2029	$4.2	$40.9	$18.2	$22.7	44%	$2.0	($2.9)	-4.8%	$1.2	$1.8	44%	$5.4	$45.3	$22.3	$23.0	49%	$2.3	($2.7)	-2.0%	$1.5	$1.9	35%
2030	$4.2	$41.0	$18.5	$22.5	45%	$2.0	($3.0)	-5.0%	$1.2	$1.8	43%	$5.6	$46.3	$23.4	$22.9	51%	$2.3	($2.8)	-2.1%	$1.6	$1.9	34%
2031	$4.3	$41.2	$18.9	$22.3	46%	$2.1	($3.0)	-5.3%	$1.3	$1.8	43%	$5.7	$47.3	$24.5	$22.8	52%	$2.3	($2.9)	-2.3%	$1.7	$1.9	33%
2032	$4.4	$41.2	$19.1	$22.1	46%	$2.1	($3.1)	-5.4%	$1.3	$1.8	42%	$5.8	$48.4	$25.6	$22.8	53%	$2.3	($2.9)	-2.4%	$1.7	$1.9	33%
2033	$4.5	$41.3	$19.4	$21.9	47%	$2.1	($3.1)	-5.5%	$1.3	$1.8	41%	$6.0	$49.5	$26.7	$22.7	54%	$2.3	($3.0)	-2.5%	$1.8	$1.9	32%
2034	$4.6	$41.2	$19.6	$21.6	48%	$2.1	($3.2)	-5.7%	$1.3	$1.8	40%	$6.2	$50.6	$27.9	$22.7	55%	$2.3	($3.1)	-2.6%	$1.9	$1.9	31%
2035	$4.7	$41.2	$19.8	$21.4	48%	$2.1	($3.2)	-5.8%	$1.3	$1.8	39%	$6.3	$51.7	$29.1	$22.7	56%	$2.4	($3.2)	-2.8%	$2.0	$1.9	30%
2036	$4.8	$41.1	$20.0	$21.1	49%	$2.1	($3.3)	-5.9%	$1.3	$1.8	38%	$6.5	$52.9	$30.2	$22.6	57%	$2.4	($3.2)	-2.9%	$2.1	$1.9	30%
2037	$4.9	$41.0	$20.1	$20.9	49%	$2.1	($3.3)	-6.0%	$1.3	$1.8	37%	$6.7	$54.0	$31.4	$22.6	58%	$2.4	($3.3)	-2.9%	$2.1	$1.9	29%
2038	$5.0	$40.9	$20.3	$20.6	50%	$2.1	($3.3)	-6.0%	$1.4	$1.8	36%	$6.9	$55.2	$32.6	$22.6	59%	$2.4	($3.4)	-3.0%	$2.2	$1.9	28%
2039	$5.1	$40.8	$20.4	$20.3	50%	$2.1	($3.3)	-6.0%	$1.4	$1.8	35%	$7.1	$56.5	$33.9	$22.6	60%	$2.4	($3.5)	-3.1%	$2.3	$1.9	27%
2040	$5.3	$40.6	$20.6	$20.0	51%	$2.1	($3.3)	-5.9%	$1.4	$1.8	34%	$7.3	$57.7	$35.1	$22.6	61%	$2.5	($3.5)	-3.1%	$2.4	$1.9	27%
2041	$5.4	$40.5	$20.7	$19.7	51%	$2.1	($3.3)	-5.8%	$1.4	$1.8	33%	$7.5	$59.0	$36.4	$22.6	62%	$2.5	($3.6)	-3.1%	$2.5	$1.9	26%
2042	$5.6	$40.3	$20.9	$19.4	52%	$2.1	($3.3)	-5.5%	$1.4	$1.8	32%	$7.7	$60.4	$37.8	$22.6	63%	$2.5	($3.7)	-3.1%	$2.6	$2.0	25%
2043	$5.7	$40.3	$21.2	$19.1	53%	$2.1	($3.2)	-5.3%	$1.4	$1.8	31%	$8.0	$61.8	$39.2	$22.7	63%	$2.5	($3.7)	-3.1%	$2.7	$2.0	25%
2044	$5.9	$40.2	$21.5	$18.7	53%	$2.1	($3.2)	-5.1%	$1.4	$1.8	30%	$8.2	$63.3	$40.6	$22.7	64%	$2.6	($3.8)	-3.1%	$2.8	$2.0	24%
2045	$6.1	$40.2	$21.8	$18.4	54%	$2.1	($3.2)	-5.1%	$1.5	$1.7	28%	$8.5	$64.9	$42.1	$22.8	65%	$2.6	($3.9)	-3.0%	$2.9	$2.0	24%
2046	$6.2	$40.2	$22.2	$18.0	55%	$2.0	($3.2)	-5.3%	$1.5	$1.6	26%	$8.7	$66.6	$43.7	$22.9	66%	$2.6	($3.9)	-2.9%	$3.0	$2.0	23%
2047	$6.4	$40.3	$22.5	$17.8	56%	$1.9	($3.1)	-5.2%	$1.5	$1.6	24%	$9.0	$68.4	$45.4	$23.0	66%	$2.6	($4.0)	-3.1%	$3.1	$1.9	21%
2048	$6.6	$40.5	$22.9	$17.6	56%	$1.9	($3.1)	-5.2%	$1.5	$1.5	23%	$9.3	$70.3	$47.1	$23.2	67%	$2.7	($4.0)	-2.7%	$3.2	$2.1	22%
2049	$6.8	$40.7	$23.2	$17.4	57%	$1.9	($3.1)	-5.0%	$1.6	$1.5	22%	$9.6	$72.4	$49.0	$23.4	68%	$2.8	($4.1)	-2.7%	$3.3	$2.1	22%
2050	$7.0	$40.9	$23.6	$17.3	58%	$1.9	($3.0)	-4.8%	$1.6	$1.5	21%	$9.9	$74.5	$51.0	$23.5	68%	$1.4	($4.2)	-5.4%	$3.4	$0.7	8%

Exhibit 6
4 Years Max COLA Scenario: Connecticut State Employees Retirement System and Connecticut State Teachers' Retirement System

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Fiscal Year	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll	Payroll	Liability	Assets	Pension Debt	Funded Ratio	Total Contribution	Benefit Payment	Cash Flow Ratio	Investment Return	$	% Payroll
2022	$3.8	$38.4	$17.1	$21.3	44%	$5.4	($2.4)	17.6%	($1.4)	$2.0	52%	$4.5	$37.9	$23.2	$14.7	61%	$2.7	($2.2)	1.9%	($2.0)	$1.4	32%
2023	$3.9	$38.6	$18.7	$19.9	48%	$2.3	($2.4)	-0.5%	$1.3	$2.1	55%	$4.6	$39.6	$21.6	$18.0	55%	$1.9	($2.4)	-2.1%	$1.5	$1.6	34%
2024	$3.9	$40.1	$19.8	$20.3	49%	$2.0	($2.6)	-2.8%	$1.3	$1.8	47%	$4.8	$40.4	$22.6	$17.8	56%	$1.9	($2.4)	-2.3%	$1.5	$1.6	33%
2025	$4.0	$41.6	$20.6	$21.0	50%	$2.1	($2.7)	-3.1%	$1.4	$1.9	48%	$4.9	$41.2	$23.6	$17.6	57%	$2.0	($2.5)	-1.9%	$1.6	$1.7	34%
2026	$4.0	$43.2	$21.4	$21.8	50%	$2.2	($2.9)	-3.3%	$1.5	$2.0	50%	$5.0	$42.0	$24.8	$17.2	59%	$2.1	($2.5)	-1.6%	$1.7	$1.8	35%
2027	$4.1	$44.9	$22.1	$22.7	49%	$2.3	($3.1)	-3.6%	$1.5	$2.1	52%	$5.1	$42.9	$26.1	$16.8	61%	$2.2	($2.6)	-1.3%	$1.8	$1.8	36%
2028	$4.1	$45.1	$22.8	$22.2	51%	$2.5	($3.2)	-3.3%	$1.6	$2.3	55%	$5.3	$43.9	$27.5	$16.3	63%	$2.2	($2.6)	-1.4%	$1.9	$1.9	35%
2029	$4.2	$45.2	$23.6	$21.6	52%	$2.5	($3.3)	-3.4%	$1.6	$2.3	54%	$5.4	$44.9	$29.0	$15.8	65%	$2.2	($2.7)	-1.5%	$2.0	$1.9	34%
2030	$4.2	$45.3	$24.4	$20.9	54%	$2.5	($3.4)	-3.6%	$1.7	$2.3	53%	$5.6	$45.9	$30.6	$15.3	67%	$2.2	($2.7)	-1.6%	$2.1	$1.9	33%
2031	$4.3	$45.4	$25.2	$20.2	56%	$2.5	($3.4)	-3.7%	$1.7	$2.3	52%	$5.7	$47.0	$32.2	$14.8	68%	$2.3	($2.8)	-1.7%	$2.2	$1.9	33%
2032	$4.4	$45.3	$26.0	$19.4	57%	$2.5	($3.5)	-3.8%	$1.8	$2.3	51%	$5.8	$48.1	$33.8	$14.2	70%	$2.3	($2.9)	-1.8%	$2.3	$1.9	32%
2033	$4.5	$45.2	$26.8	$18.5	59%	$2.5	($3.5)	-3.8%	$1.8	$2.2	50%	$6.0	$49.2	$35.5	$13.6	72%	$2.3	($3.0)	-1.9%	$2.4	$1.9	31%
2034	$4.6	$45.1	$27.5	$17.6	61%	$2.5	($3.6)	-3.9%	$1.9	$2.2	49%	$6.2	$50.3	$37.3	$13.0	74%	$2.3	($3.0)	-2.0%	$2.5	$1.9	30%
2035	$4.7	$44.9	$28.3	$16.6	63%	$2.5	($3.6)	-3.9%	$1.9	$2.2	48%	$6.3	$51.4	$39.1	$12.3	76%	$2.3	($3.1)	-2.1%	$2.7	$1.9	30%
2036	$4.8	$44.7	$29.1	$15.6	65%	$2.5	($3.6)	-3.9%	$2.0	$2.2	47%	$6.5	$52.6	$40.9	$11.6	78%	$2.3	($3.2)	-2.1%	$2.8	$1.9	29%
2037	$4.9	$44.5	$30.0	$14.5	67%	$2.5	($3.6)	-3.8%	$2.0	$2.2	46%	$6.7	$53.8	$42.9	$10.9	80%	$2.3	($3.3)	-2.2%	$2.9	$1.9	28%
2038	$5.0	$44.2	$30.8	$13.4	70%	$2.5	($3.7)	-3.7%	$2.1	$2.2	44%	$6.9	$55.0	$44.9	$10.1	82%	$2.4	($3.4)	-2.2%	$3.1	$1.9	28%
2039	$5.1	$43.9	$31.8	$12.2	72%	$2.5	($3.7)	-3.6%	$2.2	$2.2	43%	$7.1	$56.2	$46.9	$9.3	83%	$2.4	($3.4)	-2.2%	$3.2	$1.9	27%
2040	$5.3	$43.6	$32.8	$10.9	75%	$2.5	($3.7)	-3.5%	$2.2	$2.2	42%	$7.3	$57.5	$49.1	$8.4	85%	$2.4	($3.5)	-2.2%	$3.4	$1.9	26%
2041	$5.4	$43.3	$33.9	$9.5	78%	$2.5	($3.6)	-3.3%	$2.3	$2.2	41%	$7.5	$58.9	$51.4	$7.5	87%	$2.4	($3.6)	-2.2%	$3.5	$1.9	26%
2042	$5.6	$43.1	$35.0	$8.0	81%	$2.5	($3.6)	-3.1%	$2.4	$2.2	39%	$7.7	$60.2	$53.7	$6.5	89%	$2.5	($3.6)	-2.2%	$3.7	$1.9	25%
2043	$5.7	$42.8	$36.3	$6.5	85%	$2.5	($3.5)	-2.8%	$2.5	$2.2	38%	$8.0	$61.7	$56.2	$5.5	91%	$2.5	($3.7)	-2.2%	$3.8	$1.9	24%
2044	$5.9	$42.6	$37.8	$4.9	89%	$2.5	($3.5)	-2.6%	$2.6	$2.2	37%	$8.2	$63.2	$58.8	$4.4	93%	$2.5	($3.8)	-2.1%	$4.0	$1.9	24%
2045	$6.1	$42.5	$39.4	$3.1	93%	$2.5	($3.5)	-2.6%	$2.7	$2.1	35%	$8.5	$64.8	$61.6	$3.2	95%	$2.5	($3.8)	-2.1%	$4.2	$2.0	23%
2046	$6.2	$42.4	$41.0	$1.3	97%	$2.4	($3.4)	-2.6%	$2.8	$2.0	32%	$8.7	$66.5	$64.5	$2.0	97%	$2.6	($3.9)	-2.0%	$4.4	$2.0	22%
2047	$6.4	$42.3	$42.8	-$0.5	101%	$2.3	($3.4)	-2.5%	$2.9	$2.0	31%	$9.0	$68.3	$67.6	$0.7	99%	$2.5	($3.9)	-2.1%	$4.6	$1.9	21%
2048	$6.6	$42.3	$44.6	-$2.4	106%	$0.6	($3.3)	-6.2%	$3.0	$0.2	3%	$9.3	$70.3	$70.8	-$0.5	101%	$2.7	($4.0)	-1.8%	$4.8	$2.0	22%
2049	$6.8	$42.3	$44.9	-$2.5	106%	$0.7	($3.3)	-5.7%	$3.0	$0.3	5%	$9.6	$72.3	$74.3	-$2.0	103%	$2.7	($4.1)	-1.8%	$5.1	$2.1	21%
2050	$7.0	$42.5	$45.3	-$2.8	107%	$0.7	($3.2)	-5.6%	$3.0	$0.3	4%	$9.9	$74.4	$78.1	-$3.6	105%	$1.4	($4.2)	-3.5%	$5.3	$0.7	8%