Connecticut State Teachers' Retirement System



Actuarial Valuation Report

Prepared as of June 30, 2025



November 25, 2025

Board of Directors Connecticut State Teachers' Retirement System 165 Capitol Ave Hartford, CT 06106

Members of the Board:

The laws governing the operation of the Connecticut State Teachers' Retirement System provide that actuarial valuations of the assets and liabilities of the System shall be made each year. We have conducted the actuarial valuation of the System as of June 30, 2025 and the results of the valuation are contained in the following report.

In performing the valuation, we relied on data supplied by the System and performed limited tests on the data for consistency and reasonableness. The valuation was prepared in accordance with the funding objectives of the System as set forth in Chapter 167a, Section 10-183z of the Connecticut General Statutes as amended by Section 88 of Public Act No. 19-117. The normal cost and accrued liability of the System are developed using the entry age normal cost method. Under this method, the normal cost is the level percent of payroll necessary to fully fund the expected benefits to be earned over the career of each individual active member. The normal cost is partially funded with active member contributions with the remainder funded by employer contributions.

In determining the System's liabilities, future events, such as investment returns, salary increases, deaths, retirements, etc., are anticipated based upon the set of actuarial assumptions as approved by the Board. The assets of the system for valuation purposes are developed using an asset smoothing technique which spreads the recognition of the unexpected portion of market related gains and losses over a period of four years with the goal of dampening the impact of market volatility upon valuation results.

An unfunded accrued liability exists in the amount equal to the excess of accrued liability over valuation assets. The accrued liability contribution was determined in accordance with subsections (b) and (c) of Section 10-183z of the Statutes as amended by Section 88 of Public Act No. 19-117. Based on the current valuation, the expected future contributions together with current assets will be sufficient to provide the planned benefits. Therefore, in our opinion, the System continues to operate on an actuarially sound basis.

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The State of Connecticut uses a biennial budget process. Beginning with the June 30, 2022 valuation, the System began performing annual valuations instead of biennial valuations which had an impact on the State's budgeting process. The June 30, 2022 valuation was used to set the budget appropriation for the first year of the State's budget biennium (FYE 2024) and was also used to produce a forecast for the second year of the biennium (FYE 2025). The June 30, 2023 valuation was then used to set the actual budget appropriation for FYE 2025. This pattern will continue to be repeated in future years with the June 30, 2024 valuation setting the budget appropriation for FYE 2026 and then will be used to provide a forecast for the appropriation for FYE 2027. The actual appropriation for FYE 2027 would then be determined with the June 30, 2025 valuation.

When the actual budget appropriation determined from an odd-year valuation differs from the forecasted amount from the prior even-year valuation, there is a mechanism per Section 4(b) of Public Act 24-81 that permits the Governor, with the approval of the Finance Advisory Committee, to adjust the budget and transfer the necessary funds to ensure that the full actuarially determined contribution is made. This pattern is expected to be a normal part of the valuation process going forward.

In the table below, we present the recommended contribution amounts for fiscal year 2027. For comparison, we also present the contribution amounts for fiscal year 2026 based on the 2024 valuation.

Valuation Date	June 30, 2024	June 30, 2025	
Recommended Contributions for Fiscal Year	2026	2027	
Normal Cost	\$293,607	\$328,073	
Unfunded Actuarial Accrued Liability	<u>\$1,361,514</u>	<u>\$1,403,546</u>	
Actuarially Determined Employer Contribution	\$1,655,121	\$1,731,619	
All dollar amounts are in thousands.			

Actuarial Standard of Practice Number 4 (ASOP 4) requires the disclosure of a reasonable Actuarial Determined Employer Contribution (ADEC). Based on the assumptions and methods used in this report, the ADEC is reasonable with respect to ASOP 4.

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In order to prepare the results in this report, we have utilized actuarial models that were developed to measure liabilities and develop actuarial costs. These models include tools that we have produced and tested, along with commercially available valuation software that we have reviewed to confirm the appropriateness and accuracy of the output. In utilizing these models, we develop and use input parameters and assumptions about future contingent events along with recognized actuarial approaches to develop the needed results. Future actuarial results may differ significantly from the current results presented in this report due to such factors as the following: plan experience differing from that anticipated by the economic or demographic assumptions; changes in economic or demographic assumptions; and changes in plan provisions or applicable law. Since the potential impact of such factors is outside the scope of a normal annual actuarial valuation, an analysis of the range of results is not presented herein.

This actuarial valuation was performed to determine the recommended funding amount for the System. The asset values used to determine unfunded liabilities and funded ratios are not market values but less volatile market related values. A smoothing technique is applied to market values to determine the market related values. The unfunded liability amounts and funded ratios using the market value of assets would be different. The interest rate used for determining liabilities is based on the expected return of assets.

This is to certify that the independent consulting actuary is a member of the American Academy of Actuaries and has experience in performing valuations for public retirement systems, that the valuation was prepared in accordance with principles of practice prescribed by the Actuarial Standards Board, and that the actuarial calculations were performed by qualified actuaries in accordance with accepted actuarial procedures, based on the current provisions of the retirement system and on actuarial assumptions and methods that are internally consistent and reasonable, based on the actual experience of the System.

Respectfully submitted,

Todd B. Green, ASA, EA, FCA, MAAA

President

Ben Mobley ASA, FCA, MAAA

Consulting Actuary



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SECTION 1 - BOARD SUMMARY

The table below summarizes the results of the June 30, 2025 actuarial valuation as compared with the prior valuation.

Table I-1: Comparative Summary	y of Principal Resu	ılts
	June 30, 2024	June 30, 2025
Membership		
Active Members		
Number	53,373	51,971
Annual Payroll	\$5,054,181	\$5,115,026
Retirees and Beneficiaries		
Number	40,034	40,138
Annual Benefits	\$2,385,276	\$2,439,144
Inactive Members		
Vested	2,457	2,841
Non-Vested	8,901	10,032
Assets		
Market Value	\$26,392,634	\$29,131,057
Actuarial Value	\$26,333,611	\$27,900,613
Return on Market Value	11.49%	10.19%
Return on Actuarial Value	8.06%	5.72%
Ratio of Actuarial to Market Value	99.78%	95.78%
Actuarial Information		
Unfunded Actuarial Accrued Liability (UAAL)	\$15,926,345	\$15,915,249
Funded Ratio	62.31%	63.68%
Computed Contribution Rates		
Normal Cost	12.64%	13.20%
UAAL	<u>26.15%</u>	<u>27.44%</u>
Total	38.79%	40.64%
Member	7.00%	7.00%
State	31.79%	33.64%
Actuarially Determined Employer		
Contribution (ADEC) for Fiscal Year Ending June 30, 2026	\$1,655,121	
June 30, 2027	φ1,000,121	\$1,731,619
June 30, 2027 June 30, 2028* (Estimated)		\$1,731,619 \$1,715,682
oune 30, 2020 (Estimateu)		φ1,713,002
All dollar amounts are in thousands.		

^{*} The June 30, 2026 valuation will determine the June 30, 2028 ADEC.





SECTION 1 - BOARD SUMMARY

Summary of Key Findings

The employer contribution rate for the System is used to pay the employer's portion of the normal cost and to amortize the unfunded actuarial accrued liability (UAAL).

The actuarially determined normal cost contribution rate was 12.64% as of June 30, 2024, increasing to 13.20% as of June 30, 2025. The unfunded actuarial accrued liability increased from \$15.926 billion to \$16.493 billion since the last valuation. The unfunded actuarial accrued liability rate increased from 26.15% to 27.44%. We note the following key findings:

- The UAAL increased by \$365.2 million due to changes in assumptions adopted by the board as a result of the Experience Study for the Five-Year Period Ending June 30, 2024. The changes are summarized in Appendix B.
- The UAAL increased by \$1.099 billion due to interest and decreased by \$1.316 billion due to the expected amortization payment since the last valuation.
- Additionally, the assets as of June 30, 2025 recognizes \$578.1 million as a receivable contribution which reflects the discounted value of the \$592.8 million deposited November 17, 2025 after the 2025 fiscal year end. This further decreased the UAAL by \$578.1 million.
- The System experienced an actuarial loss on plan assets of \$307.2 million for fiscal year 2025 because the investment return on the actuarial value of assets was different than the assumed rate. Table III-3 provides the calculation of the investment gains and losses for the year.
- The System experienced a net actuarial loss of \$111.7 million as of June 30, 2025 on plan liabilities due to non-investment related experience. Table IV-2 provides the reconciliation of the UAAL which is summarized as follows:
 - 1. The System provides post-retirement Cost-of-Living Adjustments based upon certain criteria set forth in the statutes. For purposes of the valuation, the benefits paid to eligible retirees and beneficiaries are expected to increase at a rate of 3.00% annually for members retired before September 1992 and 2.00% for members retired on and after September 1, 1992 (1.75% for members hired on or after July 1, 2007). The actual COLAs granted for members retired before September 1, 1992, were 3.0% for members with a January COLA date and 3.0% for members with a July COLA date. The actual COLAs granted for members retired on and after September 1, 1992, were 2.5% (2.5% for members hired on or after July 1, 2007). This resulted in a \$116.3 million loss to the System for the year.
 - 2. In years where the salaries of active members increase more than expected, an actuarial loss occurs. The System experienced a \$17.6 million loss due to salary experience for the year.
 - 3. In addition, there were other gains and losses primarily attributable to the System demographic experience. The gain for the year was \$22.2 million.





SECTION 1 - BOARD SUMMARY

Section 2 of the report provides summarized information on the membership data used in the valuation. Section 3 of the report covers the System's assets and Section 4 of the report covers the System's liabilities. The results of the valuation are provided in Section 5 of the report and the accounting information is in Section 6. The appendices provide additional information on: A) the System members; B) the actuarial assumptions and methods; and C) the summary of plan provisions. In addition, Appendix D provides a glossary of actuarial terminology.





SECTION 2 - MEMBERSHIP DATA

Data regarding the membership of the System for use in the valuation were furnished by the Retirement System. The following table summarizes the membership data as of June 30, 2025 and is compared with that reported for the prior valuation.

Table II-1: Summary of Membership Data			
A ()	June 30, 2024	June 30, 2025	
Active Members			
Total Number of Active Members	53,373	51,971	
Total Annual Compensation	\$5,054,181	\$5,115,026	
Retirees and Beneficiaries			
Number of Service Retirements	37,572	37,699	
Total Annual Benefit Payments	\$2,293,365	\$2,345,470	
Number of Disability Retirements	262	202	
Total Annual Benefit Payments	\$8,063	\$6,564	
Number of Beneficiaries	2,200	2,237	
Total Annual Benefit Payments	\$83,848	\$87,110	
Inactive Members			
Number of Non-vested Inactive Members	8,901	10,032	
Number of Vested Inactive Members	2,457	2,841	
All dollar amounts are in thousands.			





SECTION 3 - SYSTEM ASSETS

The following tables provide information on the System's assets.

Table III-1: Market Value Reconciliation				
	2023 - 2024	2024 - 2025		
Net Market Value as of July 1	\$23,763,127	\$26,392,634		
Additions				
State Contributions	\$1,554,542	\$1,601,407		
Non-State Contributions	<u>\$366,988</u>	<u>\$364,050</u>		
Total Contributions	\$1,921,530	\$1,965,457		
Net Investment Income	\$2,702,753	\$2,663,911		
Receivable Contributions	\$411,051*	\$578,103**		
Total Additions	\$5,035,334	\$5,207,471		
Deductions				
Benefit Payments and Refunds	(\$2,405,827)	(\$2,469,048)		
Other	\$ 0	\$ 0		
Total Deductions	(\$2,405,827)	(\$2,469,048)		
Net Increase	\$2,629,507	\$2,738,423		
Net Market Value as of June 30	\$26,392,634	\$29,131,057		
Rate of Return on Market Value	11.49%	10.19%		
dollar amounts are in thousands.				

^{*} Reflects the additional contributions of \$273.2 million and an expected \$147.2 million received subsequent to FYE 2024 discounted at 6.9% to the valuation date.



^{**} Reflects the additional contributions of \$592.8 million received subsequent to FYE 2025 discounted at 6.9% to the valuation date.



SECTION 3 - SYSTEM ASSETS

Development of Actuarial Value of Assets

The Actuarial Value of Assets represents a "smoothed" value developed with the purpose of dampening the impact of market volatility on the assets used in determining valuation results. The Actuarial Value of Assets has been calculated by spreading the recognition of excess investment income over four years. The amount of excess investment income in each year is the difference between expected investment income on actuarial value and the actual market value investment income. Table III-2 provides the development of the actuarial value of assets since the previous valuation.

	Table III-2: Development of Actuarial Value of Assets						
	June 30, 2024 June 30, 202						
1.	Actuarial Value Beginning of Year	\$24,454,966	\$26,333,611				
2.	Market Value End of Year	\$26,392,634	\$29,131,057				
3.	Market Value Beginning of Year	\$23,763,127	\$26,392,634				
4.	Cash Flow						
	a. Contributions	\$1,921,530	\$1,965,457				
	b. Disbursements	(\$2,405,827)	<u>(\$2,469,048)</u>				
	c. Net: 4a + 4b	(\$484,297)	(\$503,591)				
5.	Receivable Contributions	\$411,051	\$578,103				
6.	Investment Income						
	a. Market Total: 2-3-4c-5	\$2,702,753	\$2,663,911				
	b. Assumed Rate of Return	6.90%	6.90%				
	c. Amount for Immediate Recognition: (3 x 6b) + (4c x 6b x 0.5)	\$1,670,684	\$1,803,718				
	d. Amount for Phased-In Recognition: 6a – 6c	\$1,032,069	\$860,193				
7.	Phased-In Recognition of Investment Income						
	a. Current Year: 6d * .25	\$258,017	\$215,048				
	b. First Prior Year	\$69,265	\$258,017				
	c. Second Prior Year	(\$853,563)	\$69,265				
	d. Third Prior Year	<u>\$807,488</u>	<u>(\$853,558)</u>				
	e. Total Recognized Investment Gain	\$281,207	(\$311,228)				
8.	Total Recognized Investment Return: 6c + 7e	\$1,951,891	\$1,492,490				
9.	Adjustment	0	0				
10.	Actuarial Value End of Year: 1 + 4c + 5 + 8 + 9	\$26,333,611	\$27,900,613				
11.	Difference Between Market & Actuarial Values: 2 – 10	\$59,023	\$1,230,444				
12.	12. Rate of Return on Actuarial Value 8.06% 5.72%						
All do	llar amounts are in thousands.						





SECTION 3 - SYSTEM ASSETS

The actuarial valuation assumes the investment income on the assets of the System is 6.90% annually. This assumption is based upon the reasonable long-term expected return on the assets. In each year, the System will experience actuarial gains and losses due to the actual investment return of the assets.

Table III-3: Calculation of Actuarial Investment Gain/(Loss)				
	June 30, 2024	June 30, 2025		
Actuarial Value of Assets at Beginning of Year	\$24,454,966	\$26,333,611		
2. Total Net Cash Flow	(484,297)	(503,591)		
3. Receivable Contribution	411,051	578,103		
4. Expected Return on Actuarial Value of Assets: (1 x 6.90% + 2 x 6.90% x .5)	\$1,670,684	<u>\$1,799,645</u>		
5. Expected Actuarial Value of Assets at End of Year: (1 + 2 + 3 + 4)	\$26,052,404	\$28,207,768		
6. Actual Actuarial Value of Assets at End of Year	\$26,333,611	<u>\$27,900,613</u>		
7. Actuarial Gain/(Loss) Due to Investment Experience: (6 - 5)	\$281,207	(\$307,155)		
All dollar amounts are in thousands.				





SECTION 4 - SYSTEM LIABILITIES

The present value of benefits is the value as of the valuation date of all future benefits expected to be paid to current members of the System. An actuarial cost method allocates each individual's present value of benefits to past and future years of service. The actuarial accrued liability includes the portion of the active member present value of benefits allocated to past service as well as the entire present value of benefits for retirees, beneficiaries and inactive members. The unfunded actuarial accrued liability (UAAL) is the difference between the actuarial accrued liability and the actuarial value of assets. Table IV-1 shows the allocation of the present value of future benefits into components for future normal cost contributions and actuarial accrued liabilities and the determination of the UAAL as of the valuation date.

Table IV-1: Calculation and Allocation of Present Value of Future Benefits					
	Entry Age Actuarial Cost Method				
		(2)	(3)		
	(1)	Portion	Actuarial		
	Present	Covered By	Accrued		
	Value of	Future Normal	Liabilities		
	Future Benefits	Cost Contributions	(1) - (2)		
Active Members					
Service Retirement	\$23,882,908	\$5,678,741	\$18,204,167		
Disability Retirement	131,861	95,716	36,145		
Survivors' Benefits	184,325	57,446	126,879		
Termination	1,038,340	<u>957,436</u>	80,904		
Total for Active Members	25,237,434	6,789,339	18,448,095		
Inactive Members					
Non-Vested (Refund only)	176,364	0	176,364		
Vested	696,284	0	696,284		
Total for Inactive Members	872,648	0	872,648		
Retirees and Beneficiaries					
Service Retirements	23,724,120	0	23,724,120		
Disability Retirements	91,668	0	91,668		
Beneficiaries	679,331	0	679,331		
Total for Retirees and Beneficiaries	24,495,119	0	24,495,119		
Total	\$50,605,201	\$6,789,339	\$43,815,862		
Actuarial Value of Assets			\$27,900,613		
Unfunded Actuarial Accrued Liability			\$15,915,249		
Funded Ratio			63.68%		
All dollar amounts are in thousands.					





SECTION 4 – SYSTEM LIABILITIES

The funded ratio of the System is the ratio of the actuarial value of assets divided by the actuarial accrued liability as of the valuation date. As of June 30, 2025, the funded ratio of the System is 63.68% as compared to the ratio in the prior valuation of 62.31%. The ratio is a commonly used measure of the funding progress of a System and can be useful in reviewing the historical trend of a System's funding progress. Such a review should also consider the impact to this measure over the historical period due to changes to plan benefits, changes to the actuarial assumptions and methods, and the significant impact that investment experience can have on the ratio over short-term periods. We caution that no single "point in time" measure can provide a universal basis for comparing one System to another.

Although the terminology used to describe the excess of the System's actuarial accrued liability over the System's actuarial value of assets is called the "unfunded" actuarial accrued liability, there is a dedicated source of funding for this liability. The scheduled employer and employee contributions are expected to completely fund the System's liabilities (pay off the UAAL) within a reasonable period based on statutory funding requirements.

The calculation of the System's actuarial liabilities requires the use of several assumptions concerning the future experience of the System and its members. In each valuation, the latest year of actual experience is compared to that expected by the prior valuation. The differences are actuarial gains and losses which decrease or increase the UAAL. Table IV-2 provides for the reconciliation of the UAAL and shows the primary sources of this year's gains and losses due to actuarial experience.





SECTION 4 - SYSTEM LIABILITIES

Table IV-2: Reconciliation of the UAAL					
1.	UAAL as of June 30, 2024	\$15,926,345			
2.	Expected Interest (1 x 6.90%)	1,098,918			
3.	Expected Amortization Payment	<u>(1,315,994)</u>			
4.	Expected End of Year UAAL (1 + 2 + 3)	\$15,709,269			
5.	Actuarial Experience (Gain)/Loss				
	Receivable Contribution	(578,103)			
	Assumption Changes 365,226				
	Asset Experience 307,155				
	COLA	116,274			
	Salary Experience	17,638			
	Post-retirement Mortality (52,355)				
	Retirements	(5,687)			
	Turnover and Other 35,832				
	Total Actuarial (Gain)/Loss	\$205,980			
6.	UAAL as of June 30, 2025 (4 + 5)	\$15,915,249			
All dollar amounts are in thousands.					





SECTION 5 – ACTUARIAL VALUATION RESULTS

Section 4 of this report presented the System's total present value of future benefits allocated between the present value of future normal cost contributions and actuarial accrued liability. The portion of the active members' present value of benefits allocated to future years of service is funded through annual normal cost contributions comprised of both active member and employer contributions. The System's annual normal cost rate is calculated as a percent of covered payroll, which is expected to remain level over all future years of service. The portion of the total normal cost rate in excess of the active member contribution rate is the state normal cost rate. The normal cost rate developed as of the valuation date is presented in Table V-1. Table V-1 also shows the state contribution rates necessary to amortize the UAAL in accordance with the funding requirements in the statutes.

The Actuarial Standards Board recently updated Actuarial Standard of Practice (ASOP) No. 4 to require actuaries to disclose a "reasonable" actuarially determined contribution (ADC), which reflects actuarial methods and assumptions that follow actuarial standards of practice. We believe that the System's current assumptions and actuarial cost method meet the "reasonable" standard for purposes of calculating the ADC under ASOP No. 4.

Table V-1: Actuarially Determined Employer Contribution (ADEC) Rate
Normal Cost Rate of Active Members by Expected Benefit Type	
Service Retirement	11.05%
Termination	1.85%
Disability Retirement	0.19%
Survivors' Benefits	0.12%
Total Normal Cost Rate for Active Members	13.20%
Less: Active Member Contribution Rate	7.00%
State Normal Cost Rate	6.20%
Unfunded Actuarial Accrued Liability (UAAL)	
June 30, 2018 Transitional (23 years)	29.30%
June 30, 2020 Incremental (20 years)	1.95%
June 30, 2022 Incremental (22 years)	(2.43)%
June 30, 2023 Incremental (23 years)	(1.09)%
June 30, 2024 Incremental (24 years)	(0.63)%
June 30, 2025 Incremental (25 years)	<u>0.34%</u>
Total UAAL Rate	27.44%
Actuarially Determined Employer Contribution (ADEC) Rate	33.64%





SECTION 6 – ACCOUNTING INFORMATION

The Governmental Accounting Standards Board has issued Statement No. 67 which replaces Statement No. 25 for plan years beginning after June 15, 2013. The information required under GASB 67 will be issued in a separate report.

We are providing the schedule of funding progress as shown below for informational purposes. This schedule is no longer required under GASB 67.

Table VI-1: Schedule of Funding Progress						
Actuarial Valuation as of June 30	Actuarial Value of Assets (a)	Actuarial Accrued Liability (AAL) (b)	Unfunded AAL (UAAL) (b)-(a)	Funded Ratio (a)/(b)	Covered Payroll (c)	UAAL as a % of Active Member Payroll [(b) - (a)] / (c)
2014	\$15,546.5	\$26,349.2	\$10,802.7	59.0%	\$3,831.6	281.9%
2016	16,712.3	29,860.3	13,148.0	56.0	3,949.9	332.9
2018	17,951.8	34,712.0	16,760.2	51.7	4,075.9	411.2
2020	19,055.1	37,128.0	18,072.9	51.3	4,438.4	407.2
2022	22,729.2	39,860.3	17,131.1	57.0	4,695.7	364.8
2023	24,455.0	40,877.0	16,422.0	59.8	4,904.4	334.8
2024	26,333.6	42,260.0	15,926.4	62.3	5,054.2	315.1
2025	27,900.6	43,815.9	15,915.3	63.7	5,115.0	311.1
All dollar amounts are in millions						





SECTION 6 – ACCOUNTING INFORMATION

The information presented above was determined as part of the actuarial valuation as of June 30, 2025. Additional information as of the latest actuarial valuation follows.

Table VI-2: Additional Information				
Valuation date	June 30, 2025			
Actuarial cost method	Entry Age			
Amortization method	Level dollar amortization method			
Remaining amortization periods				
June 30, 2018 Transitional	23 years			
June 30, 2020 Incremental	20 years			
June 30, 2022 Incremental	22 years			
June 30, 2023 Incremental	23 years			
June 30, 2024 Incremental	24 years			
June 30, 2025 Incremental	25 years			
Asset valuation method	Four-year smoothed market value			
Actuarial assumptions:				
Investment rate of return (includes inflation)	6.90%			
Projected salary increases (includes inflation)	3.00% - 6.00%			
Inflation	2.50%			
Cost-of-living adjustments				
Retirements prior to September 1, 1992	3.00%			
Retirements on or after September 1, 1992				
Hired prior to July 1, 2007	2.10%			
Hired on or after July 1, 2007	1.90%			





Overview

Actuarial Standards of Practice (ASOP) No. 51, issued by the Actuarial Standards Board, provides guidance on assessing and disclosing risks related to pension plan funding. This guidance is binding on all credentialed actuaries practicing in the United States. This standard was issued as final in September 2017 with application to measurement dates on or after November 1, 2018.

The term "risk" frequently has a negative connotation, but from an actuarial perspective, it may be thought of as simply the fact that what actually happens in the real world will not always match what was expected, based on actuarial assumptions. Of course, when actual experience is better than expected, the favorable risk is easily absorbed. The risk of unfavorable experience will likely be unpleasant, and so there is an understandable focus on aspects of risk that are negative.

Risk usually can be reduced or eliminated at some cost. Consumers, for example, buy auto and home insurance to reduce the risk of accidents or catastrophes. Another way to express this concept, however, is that there is generally some reward for assuming risk. Thus, retirement plans invest not just in US Treasury bonds which have almost no risk, but also in equities which are considerably riskier – because they have an expected reward of a higher return that justifies the risk.

Under ASOP 51, the actuary is called on to identify the significant risks to the pension plan and provide information to help those sponsoring and administering the plan understand the implications of these risks. In this section, we identify some of the key risks for the System and provide information to help interested parties better understand these risks.





Investment Risk

The investment return on assets is the most obvious risk – and usually the largest risk – to funding a pension plan. To illustrate the magnitude of this risk, the following chart shows the Asset Volatility Ratio (AVR), defined as the fair value of assets divided by covered payroll.

(\$ in thousands)

Valuation	Market Value of Assets	Covered Payroll	Asset Volatility Ratio
2018	\$17,946,839	\$4,075,939	4.40
2020	\$18,286,419	\$4,438,394	4.12
2022	\$21,574,433	\$4,695,730	4.59
2023	\$23,763,127	\$4,904,426	4.85
2024	\$26,392,634	\$5,054,181	5.22
2025	\$28,552,954	\$5,115,026	5.58

The asset volatility ratio is especially useful to compare across plans or through time. It is also frequently useful to consider how the AVR translates into changes in the Required Contribution Rate (actuarially determined employer contribution rate). For example, in the table below with an AVR of 5.00, if the market value return is 10% below assumed, or negative 3.10% (6.90% minus 10.00%) for the System, there will be an increase in the Required Contribution Rate of 1.06% of payroll in the first year. Without asset smoothing or without returns above the expected return in the next three years, the impact on the Required Contribution Rate would be 4.25%. A higher AVR would produce more volatility in the Required Contribution Rate.

AVR	Uns moothed Amortization	Smoothed Amortization
4.0	3.40%	0.85%
5.0	4.25%	1.06%
6.0	5.10%	1.28%





Mortality Risk

The mortality assumption is a significant assumption for valuation results, second only to the investment assumption in most situations. The System's mortality assumption utilizes a mortality table (with separate rates for males and females, as well as different rates by status) and a projection scale for how the mortality experience is expected to improve through time.

The future, however, is not known, and actual mortality improvements may occur at a faster rate than expected, or at a slower rate than expected (or even decline). Although changes in mortality will affect the benefits paid, this assumption is carefully studied during the regular experience studies that the System conducts so that incremental changes can be made to smoothly reflect emerging experience.

Contribution Risk

The System is primarily funded by member and employer contributions to the trust fund, together with the earnings on those accumulated contributions. Each year in the valuation, the Actuarial Determined Employer Contribution (ADEC) is determined, based on the System's funding policy. This rate is the sum of the rates for the normal cost for the plan, the amortization of the UAAL, and the administrative expenses. There are statutory provisions which mandate the full ADEC is contributed to the Fund each year and, in our opinion, there is no Contribution Risk at this time.





Liquidation Risk

Under the revised Actuarial Standards of Practice (ASOP) No. 4 effective for valuations after February 15, 2023, we must now include a low-default-risk obligation measure of the Fund's liability in our funding valuation report. This is an informational disclosure as described below and would not be appropriate for assessing the funding progress or health of this plan.

This measure uses the unit credit cost method and reflects all the assumptions and provisions of the funding valuation except that the discount rate is derived from considering low-default-risk fixed income securities. We considered the FTSE Pension Discount Curve based on market bond rates published by the Society of Actuaries as of June 30, 2025 and with the 30-year spot rate used for all durations beyond 30. Using these assumptions, we calculate a low-default-risk obligation measure liability of approximately \$45.0 billion.

This amount approximates the termination liability if the plan (or all covered employment) ended on the valuation date and all of the accrued benefits had to be paid with cash-flow matched bonds. This assurance of funded status and benefit security is typically more relevant for corporate plans than for governmental plans since governments rarely have the need or option to completely terminate a plan.





APPENDIX A - MEMBERSHIP DATA

	Table A-1: Schedule of Active Participant Data as of June 30, 2025									
				Years of	Service					
AGE	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 & up	No.	Avg. Pay
Under 25	533								533	54,864
25 to 29	3,133	658	1						3,792	60,709
30 to 34	1,885	2,737	595						5,217	71,336
35 to 39	1,234	1,846	3,149	415	1				6,645	83,645
40 to 44	1,026	1,090	2,087	3,191	738				8,132	96,408
45 to 49	801	750	981	1,857	3,272	567			8,228	103,378
50 to 54	614	590	699	954	1,920	2,621	255		7,653	107,189
55 to 59	376	369	565	798	1,241	1,847	1,237	129	6,562	107,495
60 to 64	200	180	311	498	717	681	477	434	3,498	105,547
65 to 69	48	77	101	189	299	247	120	172	1,253	105,895
70 & up	22	22	22	48	90	91	53	110	458	108,975
Total	9,872	8,319	8,511	7,950	8,278	6,054	2,142	845	51,971	94,274

Table A-2: Comparative Summary of Active Data						
Average Age	June 30, 2024 45.0 years	June 30, 2025 45.4 years				
Average Service	14.5 years	15.0 years				
Average Pay	\$90,684	\$94,274				





APPENDIX A - MEMBERSHIP DATA

Table A-3: Number of Monthly Retirement Allowances Of Benefit Recipients as of June 30, 2025

Payee Type	Number	Monthly Retirement Allowances
Service Retirement		
A (Life Annuity)	1	\$1,934
B (100% Cash Refund)	0	0
C (Period Certain and Life)	478	2,107,353
D (Joint and Survivor)	8,969	50,100,025
N (25% Cash Refund)	28,251	143,246,530
Total	37,699	\$195,455,843
Disability Retirement		
A (Life Annuity)	0	\$0
B (100% Cash Refund)	0	0
C (Period Certain and Life)	0	0
D (Joint and Survivor)	0	0
N (25% Cash Refund)	0	0
W (Disability)	202	547,000
Total	202	\$547,000
Beneficiaries	2,237	\$7,259,129
GRAND TOTAL	40,138	\$203,261,972





Investment Rate of Return

Assumed annual rate of 6.90% net of investment expenses.

Rates of Annual Salary Increase

	nual Salary Increase
Years of Service	sumption
Service 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	6.00% 6.00 6.00 6.00 6.00 6.00 6.00 6.00
20 21+	3.00 3.00





Active Member Decrement Rates

a. Tables below provide a summary of the assumed rates of service retirement.

Annual Rates of Retirement						
		Unred	luced			
Age		35 years of vice		re years of vice*		
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>		
50			35.0%	30.0%		
55			35.0%	30.0%		
60	18.0%	19.0%	30.0%	30.0%		
65	27.0%	33.0%	40.0%	42.0%		
70	27.0%	32.0%	30.0%	33.0%		
75	100.0%	100.0%	100.0%	100.0%		

^{* 100%} assumed rate of retirement for members with 38 or more years of service.

Annual Rates of Retirement						
Age	Prora	atable	Redu	ıced		
	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>		
50			1.20%	1.20%		
52			1.20%	1.20%		
54			1.60%	2.10%		
56			3.20%	3.60%		
58			5.50%	5.20%		
60	5.0%	5.0%				
65	13.0%	16.0%				
70	27.0%	20.0%				
75	20.0%	20.0%				
80	100.0%	100.0%				





b. Table below provides a summary of the assumed rates of disability.

An	nual Rates of Disab	oility
Age	<u>Male</u>	<u>Female</u>
20	0.020%	0.020%
25	0.020%	0.020%
30	0.020%	0.020%
35	0.020%	0.030%
40	0.030%	0.060%
45	0.080%	0.090%
50	0.150%	0.150%
55	0.150%	0.170%
60	0.150%	0.150%

c. Table below provides a summary of the assumed rates of withdrawal for active members prior to eligibility for retirement.

Annual Rates of Withdrawal					
Years of Service	Male	Female			
0	20.00%	19.00%			
1	11.00	10.50			
2	9.25	9.00			
3	7.50	7.75			
4	6.00	7.00			
5	4.50	6.25			
6	3.75	5.75			
7	3.25	5.00			
8	2.75	4.50			
9	2.50	4.00			
10	2.25	3.50			
11	2.00	3.10			
12	2.00	2.60			
13	2.00	2.25			
14	2.00	2.00			
15+	2.00	2.00			





Pre-Retirement Mortality

The PubT-2016 Employee Table projected generationally with MP-2021 is used for both males and females while in active service. Representative values of the assumed annual rates of mortality while in active service are as follows:

Annual Rates of Death*							
<u>Age</u>	<u>Male</u>	<u>Female</u>					
30	0.028%	0.013%					
35	0.035%	0.020%					
40	0.047%	0.032%					
45	0.070%	0.048%					
50	0.109%	0.073%					
55	0.174%	0.107%					
60	0.271%	0.159%					
65	0.410%	0.256%					

^{*} Rates shown are for 2016, the base year of the table.

Post-Retirement Mortality

The PubT-2016 Healthy Retiree Table projected generationally with MP-2021 is used for the period after service retirement. The PubT-2016 Disabled Retiree Table projected generationally with MP-2021 is used for the period after disability retirement. The PubT-2016 Contingent Survivor Table projected generationally with MP-2019 is used for survivors and beneficiaries. Representative values of the assumed annual rates of mortality are as follows:

	Annual Rates of Death*						
	Hea	lthy	Disa	<u>bled</u>	<u>Survivor</u>		
<u>Age</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	<u>Male</u>	<u>Female</u>	
50	0.109%	0.073%	0.865%	0.733%	0.755%	0.286%	
55	0.230%	0.189%	1.321%	1.115%	0.883%	0.405%	
60	0.377%	0.264%	2.016%	1.698%	1.051%	0.575%	
65	0.615%	0.391%	2.406%	1.874%	1.319%	0.840%	
70	1.042%	0.697%	2.831%	2.256%	1.870%	1.290%	
75	1.914%	1.368%	4.084%	3.429%	3.109%	2.071%	
80	3.697%	2.771%	6.446%	5.742%	5.509%	3.562%	
85	7.270%	5.654%	9.789%	8.708%	9.603%	6.444%	
90	13.640%	10.609%	16.429%	13.197%	16.622%	11.522%	

^{*} Rates shown are for 2016, the base year of the tables.





Asset Valuation Method

The actuarial value of assets recognizes a portion of the difference between the actual market value of assets and the expected actuarial value of assets, based on the assumed rate of investment return. The amount recognized each year is 25% of the difference between market value and expected actuarial value.

Actuarial Cost Method

The Entry Age Normal actuarial cost method allocates the plan's actuarial present value of future benefits to various periods based upon service. The portion of the present value of future benefits allocated to years of service prior to the valuation date is the actuarial accrued liability, and the portion allocated to years following the valuation date is the present value of future normal costs. The normal cost is determined for each active member as the level percent of payroll necessary to fully fund the expected benefits to be earned over the career of each individual active member. The normal cost is partially funded with active member contributions with the remainder funded by employer contributions.

The unfunded accrued liability is determined by subtracting the actuarial value of assets from the actuarial accrued liability. The UAAL as of June 30, 2018 is amortized over a closed 25-year period. Each new incremental UAAL beginning with the June 30, 2019 valuation will be amortized utilizing layered 25-year closed amortization bases established at the end of each plan year. Effective with the June 30, 2024 valuation, the remaining and future UAAL balances will be amortized utilizing the level dollar amortization method.

Future Cost-of-living Increases

Members who retired prior to September 1, 1992 are assumed to receive an annual Cost-of-Living Adjustment (COLA) of 3.0%. Members who retired on or after September 1, 1992, and were hired prior to July 1, 2007, are assumed to receive an annual Cost-of-Living Adjustment (COLA) of 2.10%. Members who retired on or after September 1, 1992, and were hired on or after July 1, 2007, are assumed to receive an annual Cost-of-Living Adjustment (COLA) of 1.90%.

Marriage Assumption

85% of males and 75% of females assumed to be married, with female spouses 3 years younger than males.





Plan N Partial Refund Option (Normal Form of Payment)

For any member who retires having earned 10 or more years of service prior to July 1, 2019, upon death, the member's beneficiary will receive a lump sum payment of the member's contributions with interest to the member's date of retirement less 25% of the total payments received to the member's date of death. A 12-year Certain and Life payment form is used to approximate the Plan N option where available data does not allow liabilities to be calculated directly.

For any member who retires having earned less than 10 years of service prior to July 1, 2019, upon death, the member's beneficiary will receive a lump sum payment of the member's contributions with interest to the member's date of retirement less 50% of the total payments received to the member's date of death. A 9-year Certain and Life payment form is used to approximate the Plan N option where available data does not allow liabilities to be calculated directly.

Changes from Prior Valuation

Since the prior valuation, the Board adopted new assumptions in conjunction with the Experience Study for the Five-Year Period Ending June 30, 2024. The changes in assumptions are summarized below:

- 1. Update mortality tables to the PubT-2016 mortality tables with generational mortality using MP-2021
- 2. Minor changes to rates of retirement
- 3. Service-only based table with minor changes to rates of withdrawal
- 4. Small changes to merit salary scale particularly between 10 and 20 years of service
- 5. Small changes to assumed COLA rates





Outlined below are the principal provisions of the system which were reflected in the results shown in this report.

Covered Employees

Any teacher, principal, superintendent or supervisor engaged in service of public schools, plus professional employees at State schools of higher education if they choose to be covered.

Annual Salary

Annual Salary rate for service as a Connecticut teacher during a school year excluding amounts paid for extra duty assignments, coaching, unused sick time, unused vacation or terminal pay.

Average Annual Salary

Average of Annual Salary received during three years of highest salary.

Credited Service

One month for each month of service as a teacher in Connecticut public schools, maximum 10 months for each school year. Ten months of credited service constitutes one year of Credited Service. Certain other types of teaching service, State employment, or war-time military service may be purchased prior to retirement, if the Member pays one-half the cost.

Normal Retirement

Eligibility - Age 60 with 20 years of Credited Service in Connecticut, or 35 years of Credited Service including at least 25 years of service in Connecticut.

Benefit - 2% of Average Annual Salary times years of Credited Service (maximum benefit is 75% of Average Annual Salary)

In addition, amounts derived from the accumulation of mandatory contributions made prior to July 1, 1989 and voluntary contributions by the teacher are payable.

Minimum Benefit: Effective January 1, 1999, Public Act 98-251 provides a minimum monthly retirement benefit of \$1,200 to teachers who retire under the Normal Retirement provisions and who have completed at least 25 years of full time Connecticut service at retirement.





Early Retirement

Eligibility - 25 years of Credited Service including 20 years of Connecticut service, or age 55 with 20 years of Credited Service including 15 years of Connecticut service.

Benefit - Reduced normal retirement benefit. The early retirement factors currently in effect are 6% per year for the first five years by which early retirement precedes the minimum normal retirement age and 4% per year for the next five years by which early retirement precedes the minimum normal retirement age. Effective July 1, 1999, the reduction for individuals with 30 or more years of service is 3% for each year by which early retirement precedes the minimum retirement age.

Proratable Retirement

Eligibility - Age 60 with 10 years of Credited Service.

Benefit - 2% less 0.1% for each year less than 20 years of Average Annual Salary times years of Credited Service in Connecticut, plus 1% of Average Annual Salary times years of additional Credited Service time.

Disability Retirement

Eligibility - 5 years of Credited Service in Connecticut if not incurred in the performance of duty and no service requirement if incurred in the performance of duty.

Benefit - 2% of Average Annual Salary times Credited Service to date of disability, but not less than 15% of Average Annual Salary, nor more than 50% of Average Annual Salary. In addition, disability benefit under this plan (without regard to any cost-of-living adjustments) plus any initial award of Social Security benefits and workers' compensation cannot exceed Average Annual Salary.

Termination of Employment

Less than 5 years of Credited Service - Return mandatory contributions with interest.

5 or more years of Credited Service - Return employee mandatory contributions with interest and 1% contributions made prior to July 1, 1989 without interest.

10 or more years of Credited Service - Member is 100% vested in the accrued benefit based on Credited Service and Average Annual Salary as of the date of termination of covered employment. Benefits are payable at age 60 and early retirement reductions are based on the number of years of service the member would have had if they had continued to work until age 60.

Member may elect return of all contributions plus interest on employee mandatory contributions in lieu of vested benefit.





Pre-Retirement Death Benefits

A lump sum plus one of the following: survivor's benefit, return of all contributions with interest, or surviving spouse's benefit.

- Lump Sum: \$1,000 for the first 5 years of Connecticut service plus \$200 per year thereafter. Maximum benefit: \$2,000.
- Survivor's Benefit: For active teachers who die while in service, the family maximum benefit payable to survivors is \$1,500 per month. Each minor child is entitled to \$300 per month. The surviving spouse's benefit is \$300 per month if the member has 12 or less years of service. For each additional year of service, the surviving spouse's monthly benefit is increased \$25, up to a maximum of \$600.
- Accumulated contributions with interest plus dependent children's benefits as described in the "Survivor's Benefit" paragraph.
- Surviving Spouse's Benefit: An active member who is eligible for immediate retirement and who has named his or her spouse as primary beneficiary will be covered by a 100% Plan D co-participant option in the event of his or her death prior to retirement.

Benefit Options

Normal form: Partial Refund Option – For any member who retires having earned 10 or more years of service prior to July 1, 2019, 75% of total benefit is paid as a life annuity. If 25% of the benefits paid prior to death do not exceed the Member's mandatory contributions plus interest frozen at the date of the benefit commencement, the difference is paid to the Member's beneficiary. For any member who retires having earned less than 10 years of service prior to July 1, 2019, 50% of total benefit is paid as a life annuity. If 50% of the benefits paid prior to death do not exceed the Member's mandatory contributions plus interest frozen at the date of the benefit commencement, the difference is paid to the Member's beneficiary.

Optional Forms: 5-, 10-, 20-, or 25-year certain and life and 33-1/3%, 50%, 66-2/3%, 75%, or 100% co-participant annuity (if co-participant dies first, benefit reverts to unreduced amount). Amounts payable under the optional forms are determined on an actuarially equivalent basis as set by the board.

Cost-of-Living Allowance

For teachers who retired prior to September 1, 1992, pension benefit adjustments are made in accordance with increases in the Consumer Price Index, with a minimum of 3% and a maximum of 5% per annum.

For teachers who were members of the Teachers' Retirement System before July 1, 2007, and retire on or after September 1, 1992, pension benefit adjustments are made that are consistent with those provided for Social Security benefits on January 1 of the year granted, with a maximum of 6% per annum. If the return on assets in the previous year was less than 6.9%, the maximum increase is 1.5%.





For teachers who were members of the Teachers' Retirement System after July 1, 2007, pension benefit adjustments are made that are consistent with those provided for Social Security benefits on January 1 of the year granted, with a maximum of 5% per annum. If the return on assets in the previous year was less than 9.9%, the maximum increase is 3%, and if the return on the assets in the previous year was less than 6.9%, the maximum increase is 1.0%.

Teachers' Mandatory Contribution

Effective July 1, 1992, each teacher is required to contribute 6% of annual salary for the pension benefit. Beginning January 1, 2018, each teacher is required to contribute 7% of annual salary. Beginning July 1, 2019, annual interest credited on mandatory contributions set at 4.0%.

State Contribution

The State's contribution requirement is determined in accordance with Section 10-183z (as amended by Section 88 of Public Act 19-117).

Early Retirement Incentive

A local or regional board of education may establish a retirement incentive plan. The plan shall provide for purchase of additional credited service by a board of education and a member of the System who chooses to participate in the plan, of additional credited service for such member and for payment by the board of education of not less than fifty per cent of the entire cost of such total cost. Any such plan shall specify a maximum number of years to be purchased, not to exceed five. Members must have attained age 50 and be eligible for retirement with the additional purchased service. The amount of service purchased cannot exceed the lesser of five years and one-fifth of the member's credited service.





APPENDIX D - GLOSSARY

Actuarial Accrued Liability - The difference between the actuarial present value of future benefits payments and the actuarial present value of future normal costs. Also referred to as "accrued liability."

Actuarial Assumptions - Estimates of expected future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment income and salary increases. Demographic estimates (rates of mortality, disability, turnover and retirement) are generally based on past experience, modified for projected changes in conditions. Fiscal estimates (salary increases, inflation and real investment return) consist of the underlying rates in an inflation-free environment plus a provision for a long-term average rate of inflation.

Actuarial Cost Method - A mathematical budgeting procedure for allocating the dollar amount of the "actuarial present value of future benefit payments" between future normal cost and actuarial accrued liability.

Actuarial Present Value - The amount of funds currently required to provide a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest and by probabilities of payment. Also referred to as "present value."

Actuarial Value of Assets - The value of current plan assets recognized for valuation purposes.

Amortization - Paying off an interest-discounted amount with periodic payments of interest and principal, as opposed to paying off with a lump sum payment.

Experience Gain (Loss) - A measure of difference between actual experience and that expected based upon a set of actuarial assumptions during the period between two actuarial valuation dates, in accordance with the actuarial cost method being used.

Normal Cost - The annual cost assigned, under the actuarial funding method, to current and subsequent plan years.

Unfunded Actuarial Accrued Liability - The difference between the actuarial accrued liability and actuarial value of assets. Also referred to as "unfunded accrued liability."

