Connecticut State Employees Retirement System

Report of the Actuary on the Valuation

Prepared as of June 30, 2024

CavMac
Actuarial Consulting Services

November 20, 2024

State of Connecticut
State Employees Retirement Commission
55 Elm Street
Hartford, CT 06106

Members of the Commission:

Connecticut General Statutes Section 5-155a governs the operation of the Connecticut State Employees Retirement System (SERS). The actuary makes periodic valuations of the contingent assets and liabilities of the Retirement System at the direction of the Commission. We are pleased to submit the report giving the results of the actuarial valuation of the Retirement System prepared as of June 30, 2024.

The purpose of the report is to provide a summary of the funded status of SERS as of June 30, 2024 and to recommend an actuarially determined contribution rate for the fiscal year ending June 30, 2026. The report indicates that an annual actuarially determined employer contribution of approximately $ 1.980 billion (at the rate of 44.40% of compensation) for the fiscal year ending June 30, 2026 is sufficient to support the benefits of the System.

In preparing the valuation, the actuary relied on data provided by the Comptroller's Office. While not verifying data at the source, the actuary performed tests for consistency and reasonableness. The valuation results depend on the integrity of the data. If any of the information is inaccurate or incomplete, our results may be different and our calculations may need to be revised. The complete cooperation of the PERS staff in furnishing materials requested is hereby acknowledged with appreciation.

The System is funded on an actuarial reserve basis. The actuarial assumptions recommended by the actuary and adopted by the Commission are reasonably related to the experience under the System and to reasonable expectations of anticipated experience under the System. The funding objective of the System is that contribution amounts will be sufficient to fully fund the liabilities of System over a reasonable funding period. The funding method determines the unfunded actuarial accrued liability (UAAL) as the excess of actuarial accrued liability over the actuarial value of assets. See page 8 of this report for the allocation of the UAAL.

This is to certify 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 that are internally consistent and reasonably based on the actual experience of the System.

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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; increases or decreases expected as part of the natural operation of the methodology used for these measurements (such as the end of an amortization period or additional cost or contribution requirements based on the plan's funded status); 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.

The actuarial computations presented in this report are for purposes of determining the recommended funding amounts for the System. Use of these computations for purposes other than meeting these requirements may not be appropriate.

The undersigned meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

Sincerely yours,

John J. Garrett, ASA, FCA, MAAA
Principal and Consulting Actuary

Edward J. Koebel, FCA, MAAA, EA
Chief Executive Officer

Larry Langer, EA, ASA, FCA, MAAA
Principal and Consulting Actuary

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1. For convenience of reference, the principal results of the current and preceding valuations are summarized below:

Valuation Date	June 30, 2024	June 30, 2023
Number of active members	49,023	47,269
Annual compensation	$ 4,460,206,853	$ 4,168,949,877
Retired members and beneficiaries:		
Number	57,628	57,327
Annual allowances	$ 2,675,602,660	$ 2,619,341,158
Deferred Vested Members:		
Number	3,638	3,417
Annual allowances	$ 52,373,125	$ 45,462,483
Assets:		
Market Value*	$ 23,890,859,768	$ 21,165,596,554
Actuarial Value*	$ 23,683,582,977	$ 21,846,666,981
Unfunded actuarial accrued liability	$ 19,186,215,936	$ 20,134,400,392
Funded Ratio based on Actuarial Assets	55.2%	52.0%
Funded Ratio based on Market Assets	55.7%	50.4%
For Fiscal Year Ending	**June 30, 2026**	**June 30, 2025**
Actuarially Determined Employer Contribution (ADEC):		
Normal	$ 246,515,453	$ 232,596,911
Accrued liability	1,733,888,428	1,781,192,643
Total	$ 1,980,403,881	$ 2,013,789,554
Actuarially Determined Employer Contribution (ADEC) Rate:		
Normal	5.53%	5.58%
Accrued liability	38.87%	42.73%
Total	44.40%	48.31%

* The June 30, 2024 amounts include the transfer of $513,939,722 made subsequent to June 30, 2024. The June 30, 2023 amounts include the transfer of $1,046,548,093 made subsequent to June 30, 2023.

2. Comments on the valuation results are given in Section IV, comments on the experience and actuarial gains and losses during the valuation year are given in Section VII and the rates of contribution payable by employers are given in Section V.

3. The results of the valuation are given in Schedule A.

4. Schedule B of this report presents the development of the actuarial value of assets. We have included an adjustment to both the market and actuarial value of assets of $503,706,378 to reflect the discounted value of the amounts transferred subsequent to June 30, 2024. Without these transfers, the unfunded actuarial accrued liability would be correspondingly larger, the funded ratio would be 54.1% and the ADEC for FYE26 would be approximately $42.8 million larger. Through the 2024 valuation, the accumulated transfers to SERS total $5.61 billion which, in isolation, reflect a $477 million dollar decrease to the annual contributions required.

5. Schedule D details the actuarial assumptions and methods employed. There were no changes to the actuarial assumptions or methods since the last valuation.

6. Schedule F gives a summary of the benefit and contribution provisions of the plan. There were no changes to the plan provisions since the last valuation.

7. The Governmental Accounting Standards Board issued Statement No. 67 (GASB 67) in June 2012 and is effective for plan years beginning after June 15, 2013. A separate GASB 67 report will be prepared for the Commission. We have provided some supplemental disclosure information and tables in Section VI.

8. As shown in the Summary of Principal Results, the funded ratio of 55.2% is the ratio of the actuarial value of assets to the accrued liability and has increased 3.2% since the prior valuation. The funded ratio is an indication of progress in funding the promised benefits using a long-term, stable funding approach. Since the ratio is less than 100%, there is a need for contributions in addition to the plan's normal cost. The funded ratio based on the market value of assets is also provided for informational purposes.

9. The table on the following page provides a history of pertinent census and valuation result figures.

COMPARATIVE SCHEDULE											
	Active Members				Retired Lives				Valuation Results ($ thousands)		
Valuation Date June 30	Number	Payroll ($ 000)	Average Salary	% increase from previous valuation	Number	Active/ Retired Ratio	Annual Benefits ($ 000)	Benefits as % of Payroll	Accrued Liability	Valuation Assets	UAAL
2014	49,976	$3,487,577	$69,785	(0.4)%	45,803	1.09	$1,576,606	45.2%	$25,505,610	$10,584,795	$14,920,815
2016	50,019	3,720,751	74,387	6.6	48,191	1.04	1,745,785	46.9	32,310,335	11,922,966	20,387,369
2018	49,153	3,428,068	69,743	(6.2)	50,441	0.97	1,931,098	56.3	34,214,163	12,990,400	21,223,763
2019	49,429	3,686,365	74,579	6.9	51,745	0.96	2,051,605	55.7	36,087,938	13,795,389	22,292,549
2020	47,662	3,672,443	77,052	3.3	52,498	0.91	2,158,277	58.8	36,971,136	14,242,897	22,728,239
2021	48,014	3,847,146	80,126	4.0	53,699	0.89	2,280,127	59.3	38,344,444	15,946,862	22,397,582
2022	46,661	3,787,016	81,160	1.3	56,778	0.82	2,525,749	66.7	40,656,964	19,726,002	20,930,962
2023	47,269	4,168,950	88,196	8.7	57,327	0.82	2,619,341	62.8	41,981,067	21,846,667	20,134,400
2024	49,023	4,460,207	90,982	3.2	57,628	0.85	2,675,603	60.0	42,869,799	23,683,583	19,186,216

Data regarding the membership of the System for use as a basis for the valuation were furnished by the Comptroller's office. The following tables summarize the membership of the Retirement System as of June 30, 2024 upon which the valuation was based. Detailed tabulations of the data are given in Schedule G.

ACTIVE MEMBERS					
			Group Averages		
Group	**Number**	**Payroll**	**Salary**	**Age***	**Service***
Tier I – Plan B	57	$ 7,339,234	$ 128,758	70.1	42.9
Tier I – Plan C	2	193,866	96,933	71.5	44.5
Tier II – Hazardous	106	13,118,910	123,763	55.6	27.4
Tier II – Hybrid Plan	204	32,001,503	156,870	61.9	29.3
Tier II – Others	4,339	492,800,784	113,575	58.4	31.5
Tier IIA – Hazardous	3,135	366,908,030	117,036	48.4	17.8
Tier IIA – Hybrid Plan	682	90,573,853	132,806	56.0	20.0
Tier IIA – Others	10,733	1,105,774,504	103,026	52.6	19.2
Tier III – Hazardous	2,179	216,170,564	99,206	42.1	10.8
Tier III – Hybrid Plan	508	52,074,955	102,510	48.1	9.9
Tier III – Others	6,269	564,376,262	90,027	47.1	10.3
Tier IV – Hazardous	3,554	289,060,860	81,334	35.8	3.4
Tier IV – Hybrid Plan	1,312	106,322,250	81,038	40.7	2.8
Tier IV – Others	15,943	1,123,491,278	70,469	40.1	2.8
Total	**49,023**	**$4,460,206,853**	**$ 90,982**	**46.1**	**11.8**

*Years

Of the 49,023 active members, 23,976 are vested and 25,047 are non-vested.

RETIRED LIVES				
			Group Averages	
Type of Benefit Payment	**Number**	**Annual Benefits**	**Benefit**	**Age***
Retired – Pre 1980	322	$ 13,692,956	$ 42,525	91.7
Retired – 1980 - 1997	8,692	387,969,892	44,635	84.1
Retired – 1997 - 2011	20,889	1,065,877,745	51,026	74.1
Retired – 2011 - 2022	24,526	1,087,761,703	44,351	66.0
Retired – 2022+	3,199	120,300,364	37,606	62.3
Total Retired Members	**57,628**	**$ 2,675,602,660**	**$ 46,429**	**71.6**
Deferred Vested Members	3,638	$ 52,373,125	$ 14,396	53.0

*Years

1. As of June 30, 2024, the total market value of assets amounted to $23,387,153,390 as reported by the Comptroller's Office. The estimated investment return for the plan year since the last valuation was 11.45%. Subsequent to June 30, 2024, the State deposited two General fund surplus transfer totaling $513,939,722, ($335.0M mid-September and an expected $179.0M in mid-December) and this is treated as a receivable amount for the plan year. For valuation purposes, we discounted this amount using the 6.90% expected return on assets to the valuation date which results in an increase in the plan's assets of $503,706,378 as of June 30, 2024. The June 30, 2024 market value of assets is $23,890,859,768 including this transfer. Schedule C shows receipts and disbursements of the System for the year preceding the valuation date and a reconciliation of the fund balances at market value.

2. The actuarial value of assets used for the current valuation using a smoothed method was $23,683,582,977 (as adjusted for the subsequent transfer). The estimated investment return for the plan year on an actuarial value of assets basis was 7.06%, which can be compared to the investment return assumed over the period of 6.90%. Schedule B shows the development of the actuarial value of assets as of June 30, 2024.

Section IV – Comments on Valuation

1. Schedule A of this report outlines the results of the valuation of the Retirement System as of June 30, 2024. The valuation was prepared in accordance with the actuarial assumptions and methods set forth in Schedule D and the actuarial cost method which is described in Schedule E.

2. The valuation shows that the System has a total actuarial accrued liability of $42,869,798,913, of which $32,925,563,455 is for the benefits payable on account of present retired members, beneficiaries of deceased members, and inactive members entitled to deferred vested benefits, and $9,944,235,459 is for the benefits expected to be payable on account of present active members, based on service to the valuation date. Against these liabilities, the System has total present assets for valuation purposes of $23,683,582,977 as of June 30, 2024. When this amount is deducted from the actuarial accrued liability of $42,869,798,913, there remains $19,186,215,936 as the unfunded actuarial accrued liability (UAAL) which is a $948M decrease from the prior valuation.

3. The employer's contributions to the System consist of normal cost contributions and accrued liability contributions. The normal cost represents the ultimate cost of the benefits, and the accrued liability contribution is an addition (reduction in case of a surplus) due to the amortization of the unfunded accrued liability. The valuation indicates that annual employer normal cost contributions at the rate of 5.53% of active members' compensation are required to provide the currently accruing benefits of the System.

4. The following table provides the components of the total UAAL, and the derivation of the amortization amounts required in accordance with the Memorandum of Understanding (MOU) between the State and SEBAC effective December 8, 2016.

TOTAL UAAL AMORTIZATION SCHEDULE
($ thousands)

	Initial UAAL	Remaining UAAL	Remaining Amortization Period (years)	Amortization Payment*
Statutory Base (1984 UAAL)	$ 4,138,969	$ 3,725,328	22	$ 334,003
2016 Base	16,248,400	15,660,669	22	1,404,096
2018 Base	570,349	521,173	19	50,048
2019 Base	1,014,250	935,004	20	87,573
2020 Base	516,320	482,086	21	44,134
2021 Base	(105,787)	(100,337)	22	(8,996)
2022 Base	(1,101,195)	(1,064,652)	23	(93,644)
2023 Base	(423,584)	(416,790)	24	(36,021)
2024 Base	(556,265)	(556,265)	25	(47,304)
Total UAAL		**$19,186,216**		**$ 1,733,889**
Annual Valuation Payroll				$ 4,460,207
UAAL Amortization Rate				38.87%

* Amortization payment method is level dollar methodology.

5. We have determined that a contribution of 38.87% of payroll is required to amortize the unfunded actuarial accrued liability of $19,186,215,936 over the scheduled amortization periods in accordance with the MOU.

6. Schedule J of this report shows the amortization schedule for the total UAAL.

SECTION V – CONTRIBUTIONS PAYABLE BY EMPLOYER

The following table shows the amount and rate of contribution payable by the employer as determined from the present valuation for the 2025/2026 fiscal year.

Contribution for	Contribution Amount	Contribution Rate
A. Normal Cost:		
Service retirement benefits	$ 434,380,780	9.75%
Disability benefits	26,419,554	0.59%
Survivor benefits	3,706,819	0.08%
Total Normal Cost	$ 464,507,153	10.42%
B. Less Member Contributions	(217,991,700)	(4.89)%
C. Employer Normal Cost	$ 246,515,453	5.53%
D. Unfunded Actuarial Accrued Liabilities (21.6 year weighted average amortization period)	$1,733,888,428	38.87%
E. Total (C. + D.)	$1,980,403,881	44.40%

Section V – Contributions Payable by Employer

The following table shows a breakdown by group of the normal cost amount and rate payable by the employer as determined from the present valuation for the 2025/2026 fiscal year.

Group	Employer Normal Cost	Employer Normal Cost Rate
Tier I – Plan B	$ 333,582	4.55%
Tier I – Plan C	10,020	5.17
Tier II – Hazardous	1,973,961	15.05
Tier II – Hybrid Plan	917,371	2.87
Tier II – Others	22,536,738	4.57
Tier IIA – Hazardous	55,875,639	15.23
Tier IIA – Hybrid Plan	1,458,758	1.61
Tier IIA – Others	49,223,934	4.45
Tier III – Hazardous	29,229,504	13.52
Tier III – Hybrid Plan	922,787	1.77
Tier III – Others	22,553,227	4. 0
Tier IV – Hazardous	28,964,678	10.02
Tier IV – Hybrid Plan	1,106,464	1.04
Tier IV – Others	31,408,790	2.80
Total	**$ 246,515,453**	**5.53%**

SECTION V – CONTRIBUTIONS PAYABLE BY EMPLOYER

The official contribution requirement for the fiscal year ending June 30, 2027 will be determined in the June 30, 2025 valuation. However, we have estimated the contribution requirement for the fiscal year ending June 30, 2027 using standard roll forward techniques from this valuation. These results assume the market value of assets will earn 6.90% and the active member population will remain static.

Projected Contributions Required for Fiscal Year Ending June 30, 2027	Roll Forward of June 30, 2024 Valuation	
	As % of Pay	$ Amount
Employer Normal Cost	5.52%	$ 253,795,000
Unfunded Actuarial Accrued Liabilities	37.66%	1,730,120,000
Total	**43.18%**	**$ 1,983,915,000**

1. The information required under Governmental Accounting Standards Board (GASB) will be issued in separate reports. The following is a distribution of the number of employees by type of membership:

NUMBER OF ACTIVE AND RETIRED MEMBERS AS OF JUNE 30, 2024	
Group	**Number**
Retirees and beneficiaries currently receiving benefits	57,628
Terminated employees entitled to benefits but not yet receiving benefits	3,638
Active plan members	49,023
Total	**110,289**

2. Another such item is the schedule of funding progress as shown below.

SCHEDULE OF FUNDING PROGRESS (Dollar amounts in thousands)						
Actuarial Valuation Date	**Actuarial Value of Assets (a)**	**Actuarial Accrued Liability (AAL) EAN (b)**	**Unfunded AAL (UAAL) (b – a)**	**Funded Ratio (a / b)**	**Covered Payroll (c)**	**UAAL as a Percentage of Covered Payroll ((b – a) / c**
6/30/2016#	$11,922,966	$32,310,335	$20,387,369	36.9%	$3,720,751	547.9%
6/30/2018	12,990,400	34,214,163	21,223,763	38.0	3,428,068	619.1
6/30/2019	13,795,389	36,087,938	22,292,549	38.2	3,686,365	604.7
6/30/2020	14,242,897	36,971,136	22,728,239	38.5	3,672,443	618.9
6/30/2021	15,946,862	38,344,444	22,397,582	41.6	3,847,146	582.2
6/30/2022	19,726,002	40,656,964	20,930,962	48.5	3,787,016	552.7
6/30/2023	21,846,667	41,981,067	20,134,400	52.0	4,168,950	483.0
6/30/2024	23,683,583	42,869,799	19,186,216	55.2	4,460,207	430.2

Reflects change in discount rate.

3. The following shows the schedule of employer contributions (all dollar amounts are in thousands).

Fiscal Year Ending June 30	Valuation Date Ending June 30	Actuarially Determined Contribution	Actual Contribution	Percentage Contributed
2017	2014	$1,569,142	$1,542,298	98.3%
2018	2016	1,443,110	1,444,053	100.1%
2019	2016	1,574,537	1,578,323	100.2%
2020	2018	1,616,312	1,616,312	100.0%
2021*	2019	1,806,708	1,848,524	102.3%
2022*	2020	1,993,151	2,014,154	101.1%
2023	2021	2,143,325	2,215,325	103.4%
2024	2022	2,040,374	2,097,178	102.8%
2025	2023	2,013,790	N/A	N/A
2026	2024	1,980,404	N/A	N/A

* Does not reflect the General Fund surplus transfers.

4. The information presented in the required supplementary schedules was determined as part of the actuarial valuation at June 30, 2024. Additional information as of the latest actuarial valuation follows.

Valuation date	6/30/2024
Actuarial cost method	Entry Age Normal
Amortization method	Level dollar, closed
Weighted amortization period	21.6 years
Asset valuation method	Smoothed market with 20% recognition of investment gains and losses
Actuarial assumptions:	
Investment rate of return*	6.90%
Projected salary increases*	3.00% - 11.50%
Cost-of-living adjustments	1.95% - 3.25%
Social Security Wage Base	3.50%
*Includes assumed price inflation at	2.50%

SECTION VII – EXPERIENCE

Actual experience will never (except by coincidence) coincide exactly with assumed experience. It is assumed that gains and losses will be in balance over a period of years, but sizable year to year fluctuations are common. Detail on the derivation of the experience gain/(loss) for the period ended June 30, 2024 is shown below. Schedule H provides detailed gain/(loss) by source.

		$ Millions
(1)	UAAL* as of June 30, 2023	$ 20,134.4
(2)	Total Normal cost for 2024 fiscal year	433.7
(3)	Actual Employer and Employee contributions	2,355.0
(4)	Interest accrual: [[(1) + (2)] x .069] - [(3) x .0345]	1,337.9
(5)	Expected UAAL as of June 30, 2024: (1) + (2) - (3) + (4)	$ 19,551.0
(6)	Assumption/Method Changes	0.0
(7)	Expected UAAL as of June 30, 2024: (5) + (6)	$ 19,551.0
(8)	Actual UAAL as of June 30, 2024	$ 19,186.2
(9)	Gain/(loss): (7) – (8) (See Schedule H)	$ 364.8
(10)	Gain/(loss) as percent of actuarial accrued liabilities at June 30, 2023 ($41,981.1)	0.9%

*Unfunded actuarial accrued liability.

Valuation Date June 30	Actuarial Gain/(Loss) as a % of Beginning Accrued Liabilities
2022	3.0%
2023	0.4%
2024	0.9%

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, please review the following chart showing the Asset Volatility Ratio (AVR), defined as the market value of assets divided by covered payroll.

($ in thousands)

Valuation Date June 30	Market Value of Assets	Covered Payroll	Asset Volatility Ratio
2022	$18,532,121	$3,787,016	4.89
2023	20,136,795	4,168,950	4.83
2024	23,387,153	4,460,207	5.24

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, the following table demonstrates that with an AVR of 5.00, if the market value return is 10% below assumed, or -3.10% for the System, there will be an increase in the Required Contribution Rate of 0.82% payroll in the first year. Without asset smoothing or without returns above the expected return in the next four years, the impact on the Required Contribution Rate would be 4.11%. A higher AVR would produce more volatility in the Required Contribution Rate.

AVR	Unsmoothed Amortization Increase due to 10% Market Loss	Smoothed Amortization Increase
4.00	3.29%	0.66%
5.00	**4.11%**	**0.82%**
6.00	4.93%	0.99%

Sensitivity Measures

Valuations are generally performed with a single set of assumptions that reflects the best estimate of future conditions, in the opinion of the actuary and typically the governing board. Note that under actuarial standards of practice, the set of economic assumptions used for funding must be consistent. To enhance the understanding of the importance of an assumption, a sensitivity test can be performed where the valuation results are recalculated using a different assumption or set of assumptions.

The following tables contains the key measures for the System using the valuation assumption for investment return of 6.90%, along with the results if the assumption were 5.90% or 7.90%. In this analysis, only the investment return assumption is changed. Consequently, there may be inconsistencies between the investment return and other economic assumptions such as inflation or payroll increases. In addition, simply because the valuation results under alternative assumptions are shown here, it should not be implied that CavMac believes that either assumption (5.90% or 7.90%) would comply with actuarial standards of practice.

($ in thousands)

As of June 30, 2024	-1% Discount Rate (5.90%)	Current Discount Rate (6.90%)	+1 Discount Rate (7.90%)
Accrued Liability	$47,943,349	$42,869,799	$38,636,089
Unfunded Liability	$24,259,766	$19,186,216	$14,952,506
Funded Ratio (AVA)	49.4%	55.3%	61.3%
ADEC Amount	$2,545,330	$1,980,404	$1,520,647

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) with generational projection of future mortality improvement to reflect the future trend in expected experience.

Although the valuation uses a generational improvement approach, the future is unknown, and actual mortality improvements may occur at a faster rate than expected under a generational improvement approach. Periodic studies of the mortality experience will allow for adjustments to the mortality improvement scale to reflect emerging experience and reduce the plan's exposure to mortality risk.

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 is determined, based on the System's funding policy. This amount is the sum of the employer's share of the normal cost for the plan and the amortization of the UAAL. Since the System is obligated to make 100% of the ADEC by agreement, there is little contribution risk.

Low-Default-Risk Obligation Measure

Under the revised Actuarial Standards of Practice (ASOP) No. 4 effective for valuations after February 15, 2023, we are required to include a low-default-risk obligation measure of the system'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 the plan. This measure uses the unit credit cost method and reflects all the assumptions and provisions of the funding valuation (including the assumed COLA paid), 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, 2024 and with the 30-year spot rate used for all durations beyond 30 because this provides an appropriate set of discount rates for this intended purpose.

Using these assumptions, we calculate a liability of approximately $48.0 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. If the plan were funded with the intent of being able to be terminated at any valuation date, contribution requirements may need to increase and would also be more volatile. 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. However, this informational disclosure is required for all plans whether corporate or governmental and care should be taken to ensure the one size fits all metric is not misconstrued.

	JUNE 30, 2024	JUNE 30, 2023
1. ACTUARIAL ACCRUED LIABILITY		
Present value of prospective benefits payable in respect of:		
(a) Present active members		
- Tier I – Plan B	$ 52,852,348	$ 54,898,305
- Tier I – Plan C	1,521,773	2,490,748
- Tier II – Hazardous Duty	104,240,380	110,230,188
- Tier II – Hybrid Plan	132,556,385	135,013,235
- Tier II – All Others	2,460,204,255	2,413,272,799
- Tier IIA – Hazardous Duty	2,053,787,494	1,961,068,666
- Tier IIA – Hybrid Plan	248,850,234	233,530,953
- Tier IIA – All Others	2,999,540,121	2,816,246,300
- Tier III – Hazardous Duty	599,697,771	513,945,091
- Tier III – Hybrid Plan	61,220,383	54,368,670
- Tier III – All Others	674,949,798	597,027,438
- Tier IV – Hazardous Duty	202,241,293	136,799,994
- Tier IV – Hybrid Plan	33,497,211	23,567,838
- Tier IV – All Others	319,076,013	212,325,423
- Total actives	$ 9,944,235,459	$ 9,264,785,648
(b) Present inactive members and members entitled to deferred vested benefits:	562,473,849	466,977,565
(c) Present annuitants and beneficiaries	32,363,089,606	32,249,304,160
(d) Total actuarial accrued liability [1(a) + 1(b) + 1(c)]	$ 42,869,798,913	$ 41,981,067,373
2. ACTUARIAL VALUE OF ASSETS	$ 23,683,582,977	$ 21,846,666,981
3. UNFUNDED ACTUARIAL ACCRUED LIABILITY [1(d) – 2]	$ 19,186,215,936	$ 20,134,400,392

	June 30, 2024
(1) Actuarial Value Beginning of Year*	$21,846,666,981
(2) Market Value End of Year* (Before Adjustment)	23,387,153,390
(3) Market Value Beginning of Year	21,165,596,554
(4) Cash Flow	
(a) Contributions	$ 2,355,040,040
(b) Other	95,433,854
(c) Disbursements	(2,668,965,534)
(d) Net: (4)(a) + (4)(b) + (4)(c)	$ (218,491,640)
(5) Investment Income	
(a) Market Total: (2) – (3) – (4)(d)	$ 2,440,048,476
(b) Assumed Rate	6.90%
(c) Amount for Immediate Recognition: [(1) x (5)(b)] + [(4)(d)] x (5)(b) x 0.5	1,499,882,060
(6) Expected Actuarial Value End of Year (With Adjustment): (1) + (4)(c) + (5)(c) + Adjustment**	$23,631,763,779
(7) Phased-In Recognition of Investment Income	
(a) Difference between Adjusted Market & Expected Actuarial Value: (2) + $503,706,378 – (6)	259,095,989
(b) 20% of Difference: 0.2 x (7)(a)	51,819,198
(8) Preliminary Actuarial Value End of Year: (6) + (7)(b)	23,683,582,977
(9) Final Actuarial Value End of Year Using 20% Corridor: Greater of [(8) and .8 x (2) with adjustment], but no more than 1.2 x (2) with adjustment	23,683,582,977
(10) Difference Between Adjusted Market & Actuarial Values: (2) + Adjustment – (9)	$ 207,276,791

* Before corridor constraints, if applicable.

** Adjustment = $503,706,378 discounted value of subsequent transfer amounts

MARKET VALUE OF ASSETS	Year Ending June 30, 2024
Receipts for the Year	
Contributions:	
Members	$ 257,861,996
State	1,816,840,715
Federal (Net of Transfers)	280,337,329
Subtotal	$ 2,355,040,040
Investment Earnings (net of expenses)	2,440,048,476
Other	95,433,854
TOTAL	$ 4,890,522,370
Disbursements for the Year	
Benefit Payments	$ 2,633,557,339
Refunds to Members	11,643,639
Interest Awarded	2,517,729
Administrative Expense	21,246,827
Other	0
Total	$ 2,668,965,534
Excess of Receipts over Disbursements	$ 2,221,556,836
Reconciliation of Asset Balances	
Asset Balance as of the Beginning of Year	$ 21,165,596,554
Excess of Receipts over Disbursements	2,221,556,836
Asset Balance as of the End of Year	$ 23,387,153,390
Rate of Return	11.45%
Adjusted Market Value of Assets *	$ 23,890,859,768

* Includes $503,706,378 discounted value of subsequent transfer amounts.

Adopted or reaffirmed by the Commission on September 16, 2021 for the June 30, 2021 and later valuations based on the experience investigation report for the five-year period ending June 30, 2020 which can be found at on the Office of the State Comptroller - Retirement Services Division website.

VALUATION INTEREST RATE: 6.90% per annum, compounded annually, net of expenses, comprised of a 2.50% price inflation assumption and a 4.40% real return assumption.

SALARY INCREASES: **T**he assumptions for salary increases are as follows:

Years of Service	Hazardous Rate*	Non-Hazardous Rate*
0	11.50%	10.50%
1	11.50%	10.50%
2	7.50%	7.50%
3	5.50%	5.50%
4	5.25%	5.25%
5	5.00%	5.00%
6	4.75%	4.75%
7	4.75%	4.75%
8	4.75%	4.75%
9	4.75%	4.75%
10	4.50%	4.50%
11	4.50%	4.25%
12	4.25%	4.25%
13	4.25%	4.25%
14	4.00%	4.00%
15	3.50%	3.50%
16	3.50%	3.25%
17	3.50%	3.25%
18	3.25%	3.25%
19	3.25%	3.25%
20+	3.00%	3.00%

*includes Wage Inflation of 3.00%

COST OF LIVING ADJUSTMENTS (COLA):

Group	Rate
Pre July 1, 1980 Retirees	3.25%
July 1, 1980 – June 30, 1997 Retirees	3.00%
July 1, 1997 – October 1, 2011 Retirees	2.60%
October 2, 2011 – June 30, 2022 Retirees	2.25%
Post July 1, 2022 Retirees	1.95%

We have also assumed a COLA moratorium for those retiring on or after July 1, 2022 for the first 30 months of retirement. We assume the first COLA received is increased by 0.15% to reflect the possible additional COLA in the event the annualized rate of increase in the CPI-W is greater than 5.5% during the first 18 months of retirement.

SOCIAL SECURITY WAGE BASE INCREASES: 3.50% per annum.

PAYROLL GROWTH ASSUMPTION: Level dollar amortization method.

SPOUSES: For members who have elected spouse coverage, husbands are assumed to be three years older than their wives.

PERCENT MARRIED: 80% of active members are assumed to be married with an average of two children who are on average age 12.

SEPARATIONS BEFORE SERVICE RETIREMENT: Representative values of the assumed annual rates of separation before service retirement are as follows:

ANNUAL RATES OF WITHDRAWAL								
Age	Years of Service							
	0	1	2	3	4	5	6-9	10+
Hazardous Males								
20	8.00%	4.25%	4.25%	4.00%	3.00%	2.50%	1.25%	1.00%
25	8.00	4.25	4.25	4.00	3.00	2.50	1.25	1.00
30	8.00	4.25	4.25	3.50	2.75	2.50	1.25	1.00
35	8.00	4.00	4.00	3.25	2.75	2.50	1.25	1.00
40	8.00	4.00	4.00	3.00	2.50	2.50	1.25	0.80
45	8.00	4.00	4.00	3.00	2.50	2.50	1.25	0.80
50	8.00	4.00	4.00	3.00	2.50	2.50	1.25	0.80
55+	8.00	4.00	4.00	3.00	2.50	2.50	1.25	0.80
Hazardous Females								
20	11.00%	7.00%	7.00%	7.00%	4.00%	3.30%	2.50%	1.75%
25	11.00	7.00	7.00	7.00	4.00	3.30	2.50	1.75
30	11.00	6.00	6.00	6.00	4.00	3.30	2.50	1.75
35	11.00	5.50	5.50	5.50	4.00	3.30	2.50	1.75
40	11.00	5.50	5.50	5.50	4.00	3.30	2.00	1.00
45	11.00	5.50	5.50	5.50	4.00	3.30	2.00	1.00
50	11.00	5.50	5.50	5.50	4.00	3.30	2.00	1.00
55+	11.00	5.50	5.50	5.50	4.00	3.30	2.00	1.00
Nonhazardous Males								
20	45.00%	35.00%	17.00%	13.00%	11.00%	11.00%	4.50%	4.50%
25	25.00	22.00	17.00	13.00	11.00	11.00	4.50	4.50
30	20.00	15.00	14.00	10.00	7.50	7.50	4.50	4.50
35	17.00	10.00	12.00	9.00	6.50	5.00	4.50	3.00
40	17.00	10.00	10.00	8.00	6.50	5.00	4.00	2.75
45	17.00	10.00	9.00	8.00	6.50	5.00	4.00	2.50
50	17.00	10.00	9.00	8.00	6.50	5.00	3.00	2.50
55+	17.00	10.00	9.00	8.00	6.50	5.00	3.00	2.00
Nonhazardous Females								
20	40.00%	40.00%	40.00%	35.00%	20.00%	20.00%	10.00%	5.00%
25	25.00	22.00	17.00	12.00	10.00	10.00	7.00	5.00
30	18.00	15.00	12.00	10.00	8.00	7.00	5.00	4.50
35	16.00	10.00	11.00	9.00	6.00	5.00	4.00	3.25
40	16.00	10.00	10.00	8.00	6.00	5.00	3.50	2.00
45	16.00	10.00	10.00	7.00	6.00	5.00	3.25	2.00
50	16.00	10.00	10.00	7.00	6.00	4.00	3.25	2.00
55+	16.00	10.00	10.00	7.00	6.00	4.00	3.25	2.00

ANNUAL RATES OF DISABILITY		
Age	**Hazardous**	**Non-Hazardous**
30	0.05%	0.04%
35	0.09	0.05
40	0.15	0.07
45	0.25	0.12
50	0.33	0.22
55	0.42	0.40
60	0.50	0.50
65	0.60	0.50
70	0.80	0.50
75	1.00	0.50

RETIREMENT: The assumed annual rates of retirement are shown below.

ANNUAL RATES OF RETIREMENT						
Hazardous						
	Tier I, II & IIA		**Tier III & IV**			
			Years of Service			
Age	**First Year Eligible**	**All Years After**	**20**	**21 - 24**	**25**	**26+**
40 - 49	45%	25%			45%	25%
50	45	25	45%	45%	45	25
51 - 56	45	25	45	25	25	25
57	60	25	60	25	25	25
58 – 61	60	30	60	30	30	30
62	65	30	65	30	30	30
63	65	30	65	30	30	30
64	65	40	65	40	40	40
65 – 66	75	50	75	50	50	50
67	75	45	75	45	45	45
68	75	40	75	40	40	40
69	75	35	75	35	35	35
70 - 73	75	30	75	30	30	30
74 - 79	100	30	100	30	30	30
80	100	100	100	100	100	100

ANNUAL RATES OF RETIREMENT						
Nonhazardous						
	Tier I		Tier II & IIA		Tier III & IV	
Age	Early	Other Years	Early	Other Years	Early	Other Years
55	12.0%	30.0%	4.0%			
56	12.0	30.0	4.0			
57	12.0	30.0	4.0			
58	12.0	30.0	4.0		4.0%	
59	12.0	30.0	4.0		4.0	
60		30.0	4.0	20.0%	4.0	
61		30.0	4.0	20.0	4.0	
62		30.0		20.0	4.0	
63		30.0		20.0	4.0	25.0%
64		30.0		20.0	4.0	25.0
65		30.0		20.0		25.0
66 - 70		30.0		25.0		25.0
71 - 79		30.0		22.5		25.0
80		100.0		100.0		100.0

MORTALITY: The Pub-2010 Mortality Tables projected generationally with scale MP-2020:

Non-Hazardous
- Service Retirees: General, Above-Median, Healthy Retiree Mortality Table.
- Disabled Retirees: General, Disabled Retiree Mortality Table.
- Beneficiaries: General, Above-Median Contingent Annuitant Mortality Table.
- Active Employees: General, Above-Median, Employee Mortality Table.

Hazardous
- Service Retirees: Public Safety, Above-Median, Healthy Retiree Mortality Table.
- Disabled Retirees: Public Safety, Disabled Retiree Mortality Table.
- Beneficiaries: Public Safety, Above-Median Contingent Annuitant Mortality Table.
- Active Employees: Public Safety, Above-Median, Employee Mortality Table.

In our opinion, the generational projection of the mortality rates with scale MP-2020 provide a sufficient margin in the assumed rates of mortality to allow for additional improvement in mortality experience.

ASSET METHOD: Actuarial Value, as developed in Schedule B. The actuarial value of assets recognizes 20% of the difference between actual market value and expected actuarial value as of the valuation date. In addition, the actuarial value of assets cannot be less than 80% or more than 120% of the market value of assets.

VALUATION METHOD: Entry Age Normal cost method. See Schedule E for a brief description of this method.

IMPACT OF LONGLEY DECISION: Benefits for members retiring from service on or after the *Longley* decision date are assumed to increase by 0.084% as a result of the revised treatment of longevity pay. Retroactive application of *Longley* has been reflected in this valuation to the extent impacted retiree benefits have been recalculated.

OTHER ASSUMPTIONS:

- Pre-Retirement deaths and disabilities assumed to be service related:
  - 30% for non-hazardous duty members
  - 60% for hazardous duty members

- To take into account State Police Supplemental Benefits and the offset of Workers Compensation, Social Security, and Non-Rehabilitation Earnings, the following minimum and maximum benefits as a percent of salary are assumed for disability benefits:

	Minimum	Maximum
Tier I State Police	60%	80%
All Other Members	40%	60%

SCHEDULE E – ACTUARIAL COST METHOD

The valuation is prepared on the projected benefit basis, which is used to determine the present value of each member's expected benefit payable at retirement, disability, or death. The calculations are based on the member's age, years of service, sex, compensation, expected future salary increases, and an assumed future interest earnings rate (currently 6.90%). The calculations consider the probability of a member's death or termination of employment prior to becoming eligible for a benefit and the probability of the member terminating with a service, disability, or survivor's benefit. The present value of the expected benefits payable to active members is added to the present value of the expected future payments to current benefit recipients to obtain the present value of all expected benefits payable to the present group of members and survivors.

The employer contributions required to support the benefits of the System are determined following a level funding approach and consist of a normal contribution and an accrued liability contribution.

Under the entry age normal cost method, the actuarial present value of each member's projected benefits is allocated on a level basis over the member's compensation between the entry age of the member and the assumed exit ages. The portion of the actuarial present value allocated to the valuation year is called the normal cost. The actuarial present value of benefits allocated to prior years of service is called the actuarial accrued liability. The unfunded actuarial accrued liability represents the difference between the actuarial accrued liability and the actuarial value of assets as of the valuation date. The unfunded actuarial accrued liability is determined by subtracting the actuarial value of assets from the actuarial accrued liability. The UAAL is amortized according to the MOU between the State and SEBAC which established separate UAAL bases. The amortization amounts are adjusted with interest to the applicable fiscal year. The employer required contribution amount is the sum of the normal cost contribution and the UAAL amortization payment.

AS INTERPRETED FOR VALUATION PURPOSES

The Connecticut State Employees Retirement System (CT SERS) is a defined benefit pension plan established by the Connecticut General Assembly for the purpose of providing retirement allowances and other benefits for State employees in Connecticut, and their survivors and other beneficiaries.

Eligibility Requirements

Tier I	All State Employees, Elected Officials and their Appointees hired prior to July 1, 1984. Those employees hired between July 1, 1982 and January 1, 1984 could elect to move to Tier II.
Tier II	All State Employees, Elected Officials and their Appointees hired on or after July 1, 1984.
Tier IIA	All State Employees, Elected Officials and their Appointees hired on or after July 1, 1997.
Tier III	All State Employees, Elected Officials and their Appointees hired on or after July 1, 2011.
Tier IV	All State Employees, Elected Officials and their Appointees hired on or after July 1, 2017.

Final Average Earnings (FAE)

Tier I, II, and IIA	Average Salary of the three highest paid years of service. Effective January 1, 1986, no one year's earnings can be greater than 130% of the average of the two preceding years in calculating the Final Average Earnings.
Tier III and IV	Average Salary of the five highest paid years of service. No one year's earnings can be greater than 130% of the average of the two preceding years in calculating the Final Average Earnings.

Normal Retirement Benefit

Eligibility	*<u>Tier I Hazardous</u>* – 20 years of credited service. *<u>Tier I Plans B and C</u>* – Earliest of age 55 with 25 years of service, age 60 with 10 years of service, or age 70 with 5 years of service. *<u>Tier II Hazardous</u>* – 20 years of credited service. *<u>Tier II and IIA</u>* – For those who will be eligible for retirement on or before July 1, 2022, the earliest of age 62 with 10 years of vesting service (effective July 1, 1992), age 60 with 25 years of vesting service, age 70 with 5 years of vesting service, or age 62 with 5 years of actual state service for terminations on or after July 1, 1997. For those who will not be eligible for retirement on or before July 1, 2022, the earliest of age 65 with 10 years of vesting service, age 63 with 25 years of vesting service, age 70 with 5 years of vesting service. *<u>Tier III Hazardous</u>* – Earlier of Age 50 and 20 years of benefit service or 25 years of benefit service. *<u>Tier III and IV</u>* – Age 63 and 25 years of benefit service or Age 65 and 10 years of benefit service. *<u>Tier IV Hazardous</u>* – 25 years of benefit service.
Benefit	*<u>Tier I Hazardous</u>* – 50% of FAE plus 2% for each year of service in excess of 20. *<u>Tier I Plan B</u>* – 2% of FAE times years of service up to age 65. Thereafter, 1% of FAE up to $4,800, plus 2% of FAE in excess of $4,800 times years of service. At age 70, greater of 1.25% of FAE up to $4,800 plus 2.5% of FAE in excess of $4,800 times years of service (maximum 20 years) or 1.0% of FAE up to $4,800 plus 2% of FAE in excess of $4,800 times year of service. Minimum benefit with 25 years is $833.34 per month.

Tier I Plan C – 2% of FAE times years of service. At age 70, greater of 2.5% of FAE times years of service (maximum 20 years) or 2.0% of FAE times years of service. Minimum benefit with 25 years is $833.34 per month.

Tier II, IIA, III and IV Hazardous – 2.5% of FAE times years of service up to 20 years plus 2.0% of FAE times years of service in excess of 20 years, if any. Minimum benefit with 25 years is $360 per month.

Tier II, IIA and III All Others – 1.40% of FAE plus 0.433% of FAE in excess of year's breakpoint*, times years of service from October 1, 1982 up to 35 years plus 1.625% of FAE times years of service in excess of 35 years, if any. Minimum benefit with 25 years if $360 per month.

* $10,700 increased by 6% each year after 1982, rounded to nearest $100 but not greater than Social Security Covered Compensation.

Tier IV All Others – 1.30% of FAE times years of service. Minimum benefit with 25 years if $360 per month.

Early Retirement Benefit

Eligibility

Hazardous – None.

Tier I – Age 55 with 10 years of service.

Tier II and IIA – Age 55 with 10 years of service.

Tier III and IV – Age 58 with 10 years of service.

Benefit

Tier I – Benefit is Normal Retirement Benefit reduced for retirement prior to age 60 with less than 25 years of service.

<u>*Tier II, IIA, III and IV*</u> – Benefit is Normal Retirement Benefit reduced 0.25% (effective July 1, 1991) for each month prior to age 60 if at least 25 years of service or age 62 if at least 10 but less than 25 years of service.

For those who retire on or after October 2, 2011 but prior to meeting the age and service requirements for a normal retirement, will be subject to a benefit reduced by 0.50% for each month prior to Normal Retirement.

Disability Retirement Benefit

Tier I

For non-service disabilities occurring prior to age 60 with at least 5 years of service, benefit is 3% of FAE times years of service; maximum benefit is 1.667% of FAE times year of service projected to age 65.

For service disabilities occurring prior to age 60, benefit is 1.667% of Salary times years of service projected to age 65 (maximum 30 years).

Exception: State Police benefit is equal to the normal retirement benefit if more than 20 years of service. State Police also receives an additional benefit of $360 per month plus $300 to spouse plus $300 to a surviving dependent child.

Tier II, IIA, III and IV

Prior to age 65 for service related disability or at any age with at least 10 years of service, benefit is 1.333% of FAE plus 0.50% of FAE in excess of the year's breakpoint, times service projected to age 65 (maximum 30 years).

Deferred Vested Retirement Benefit

Eligibility

<u>*Tier I*</u> - 10 years of service.

<u>*Tier II and IIA*</u> – Effective July 1, 1997, 5 years of actual state service, 10 years of vesting service, or age 70 with 5 years of service.

<u>*Tier III and IV*</u> – 10 years of benefit service.

Benefit

Tier I – Benefit is payable at Normal Retirement Age or an Early Retirement Benefit is payable at age 55.

Tier II and IIA – Benefit is payable at Normal Retirement Age or an Early Retirement Benefit is payable at age 55.

Tier III and IV – Benefit is payable at Normal Retirement Age or an Early Retirement Benefit is payable at age 58.

Pre-Retirement Spouse's Benefit

Tier I

State Police – Survivor benefits to spouse of $670 per month plus $300 to a surviving dependent child.

If eligible for early or normal retirement, 50% of the average of the Life Benefit and the 50% Joint & Survivor Benefit the member would have received.

If not eligible for retirement but with 25 years of service, the same benefit calculated as though age 55 using service and earnings at death.

If not eligible for retirement, return of contributions (5% interest).

Tier II, IIA, III and IV

If eligible for early or normal retirement, 50% of the 50% Joint & Survivor Benefit the member would have received.

If not eligible for retirement but with 25 years of service, the same benefit calculated as though age 55 using service and earnings at death.

If not eligible for retirement, return of contributions (5% interest).

Tiers I, II, IIA, III and IV

If death is due to employment and there are dependent children under age 18, spouse will be paid $100,000 in 10 annual installments while living and not remarried. In addition, $50 per month will be paid to each child while under age 18.

	If death is due to employment and there are no dependent children under age 18, spouse will be paid $50,000 in not less than 10 annual installments.
Payment Options	50% or 100% Joint and Survivor (Normal Form if married). Straight life annuity (Normal Form if not married). 10 or 20 year certain and life annuity.
Cost of Living Adjustments (COLA)	Annual adjustments each July 1 of up to 5% for retirements prior to July 1, 1980; 3% for retirements after July 1, 1980. For members (and beneficiaries) not covered by Social Security and age 62 and over, the maximum increase is 6%. For employees retiring after June 30, 1999, the annual adjustment will be 60% of the increase in CPI up to 6% and 75% of the increase in the CPI over 6%. This adjustment will be no less than 2.5% and no greater than 6%. Employees retiring between July 1, 1997 and June 30, 1999 made an irrevocable choice between the above formula and a fixed 3% annual adjustment. An employee from Tier IIA must have at least 10 years of actual state service or directly make the transition into retirement in order to be eligible for annual adjustments. For employees retiring on or after October 2, 2011, the minimum COLA shall be 2.0% and the maximum COLA shall be 7.5%.

For employees retiring on or after July 1, 2022, the annual rate of increase will be the CPI-W from 0.00% to 2.00%, plus 60% of the annual rate of increase in CPI-W from 3.33% to 6.00%, plus 75% of the annual rate of increase in CPI-W above 6.00%, with a cap on the COLA rate of 7.50%. In addition, a COLA moratorium for those retiring on or after July 1, 2022 will be on the first 30 months of retirement. If rate of increase in CPI-W exceeds an annualized rate of 5.5% during the initial 18 month period of receiving retirement benefits, the COLA provided beginning with the 31st monthly benefit includes an additional adjustment based on the annual COLA rate as determined above using the annualized rate over the 18 month period. The COLA rate applied would but reduced by 2.5% and then multiplied by 1.5 to reflect the 18 month period.

Member Contributions*

Tier I – Hazardous	6% of earnings up to Social Security Taxable Wage Base plus 7% of earnings above that level.
Tier I – Plan B	4% of earnings up to Social Security Taxable Wage Base plus 7% of earnings above that level.
Tier I – Plan C	7% of earnings.
Tier II – Hazardous	6% of earnings.
Tier II – All Others	2% of earnings.
Tier IIA & III – Hazardous	7% of earnings.
Tier IIA & III – All Others	4% of earnings.
Tier IV – Hazardous	8% of earnings.
Tier IV – All Others	5% of earnings.

* In years where asset losses require further increases in contributions, Tier IV employees' contributions may increase by half the necessary increase in rates (up to 2.0%). Finally, all Tier IV employees must contribute 1% to the Defined Contributions (DC) portion of the Hybrid Plan and may elect additional contribution of up to 3% of salary to the DC portion.

Hybrid Defined Benefit/Defined Contribution Plan for Employees of Higher Learning

Individuals hired on or after July 1, 2011 otherwise eligible for the Alternate Retirement Plan (“ARP”) shall be eligible to be members of the new Hybrid Plan in addition to their existing choices. Individuals who are currently members of the ARP shall be eligible to join the Hybrid Plan on a one time option at the full actuarial cost. The Hybrid Plan shall have defined benefits identical to Tier II/IIA and Tier III for individuals hired on or after July 1, 2011 but shall require employee contributions 3% higher than the contribution required from the Applicable Tier II/IIA/III Plan. An employee shall have the option, upon leaving state service, of accepting the defined benefit amount, or electing to receive a return of his/her contributions to the Hybrid Plan, plus a 5% employer match, plus 4% interest (“cash out option”). In the event the employee elects the cash out option, he/she shall permanently waive any entitlement they may have to health insurance as a retired state employee unless they convert the cash out option to a periodic payment as would be required under the current ARP Plan.

RECONCILIATION OF ACTIVE MEMBERS	
STATUS	TOTAL
As of June 30, 2023	47,269
Retirements	(645)
Disability	(102)
Terminated	(2,193)
Deaths	(43)
Rehires	419
New Participants	4,763
Refunds	(445)
As of June 30, 2024	49,023

RECONCILIATION OF RETIRED MEMBERS				
STATUS	RETIREE	DISABILITY	SURVIVOR	TOTAL
As of June 30, 2023	47,580	4,234	5,513	57,327
Retirements	42	(42)		0
Disability	(2)	2		0
Survivors	(326)	(47)	373	0
Deaths with no Survivors	(635)	(88)	(234)	(957)
Rehires	(5)	(1)		(6)
Refunds				0
Certain Period Ended		(2)	(20)	(22)
Data Corrections	184	46	149	379
From Term Deferred	131	14	3	148
From Active	645	102	12	759
As of June 30, 2024	47,614	4,218	5,796	57,628

TIER I – PLAN B									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34									0
35 to 39									0
40 to 44									0
45 to 49									0
50 to 54									0
55 to 59									
60 to 64					1	2	5	8	719,281
65 to 69							24	24	2,543,166
70 & Up							25	25	4,076,787
Total					1	2	54	57	$ 7,339,234

Average Age: 70.1
Average Service: 42.9

Average Salary: $128,758

TIER I – PLAN C									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	**0 to 4**	**5 to 9**	**10 to 14**	**15 to 19**	**20 to 24**	**25 to 30**	**30 & Up**	**No.**	**Payroll**
Under 25									$ 0
25 to 29									0
30 to 34									0
35 to 39									0
40 to 44									0
45 to 49									0
50 to 54									0
55 to 59									0
60 to 64									0
65 to 69							1	1	118,741
70 & Up							1	1	75,125
Total							2	2	$ 193,866

Average Age: 71.5
Average Service: 44.5

Average Salary: $96,933

TIER II – HAZARDOUS DUTY									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34									0
35 to 39			1					1	118,551
40 to 44		1	2	1				4	216,784
45 to 49					1	2		3	615,370
50 to 54	1			3	1	20	8	33	3,999,185
55 to 59	1			3	6	9	27	46	5,752,432
60 to 64			1	1		5	8	15	1,879,487
65 to 69						3		3	416,003
70 & Up							1	1	121,098
Total	2	1	4	8	8	39	44	106	$ 13,118,910

Average Age: 55.6
Average Service: 27.4

Average Salary: $123,763

TIER II – HYBRID PLAN									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	**0 to 4**	**5 to 9**	**10 to 14**	**15 to 19**	**20 to 24**	**25 to 30**	**30 & Up**	**No.**	**Payroll**
Under 25									$ 0
25 to 29									0
30 to 34									0
35 to 39									0
40 to 44									0
45 to 49						1		1	142,850
50 to 54	1			2	3	12	4	22	3,565,671
55 to 59				4	6	23	20	53	7,095,722
60 to 64			1	2	5	24	38	70	10,288,468
65 to 69				5	2	9	14	30	5,906,380
70 & Up				5		2	21	28	5,002,412
Total	1		1	18	16	71	97	204	$ 32,001,503

Average Age: 61.9
Average Service: 29.3

Average Salary: $156,870

TIER II – ALL OTHERS									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34									0
35 to 39					1			1	66,396
40 to 44		1	1	1	7			10	782,114
45 to 49	1				18	34	4	57	5,548,333
50 to 54	4	4	10	16	65	373	229	701	78,031,801
55 to 59	9	8	14	30	54	486	1,449	2,050	228,284,286
60 to 64	6	5	10	15	34	206	864	1,140	135,793,637
65 to 69		2	8	12	10	56	183	271	31,285,743
70 & Up	1	1	3	10	8	13	73	109	13,008,474
Total	21	21	46	84	197	1,168	2,802	4,339	$ 492,800,784

Average Age: 58.4
Average Service: 31.5

Average Salary: $113,575

TIER IIA – HAZARDOUD DUTY									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34			2	2				4	431,934
35 to 39	1	1	105	126	7			240	28,069,879
40 to 44	6	4	152	664	75			901	105,081,979
45 to 49	6	3	76	540	142	16		783	95,026,061
50 to 54	4	3	56	399	101	30		593	69,154,634
55 to 59	2	1	47	197	52	9		308	35,144,965
60 to 64			24	148	30	7		209	23,712,914
65 to 69			8	54	13	5		80	8,774,842
70 & Up			2	11	4			17	1,510,822
Total	19	12	472	2,141	424	67		3,135	$ 366,908,030

Average Age: 48.4
Average Service: 17.8

Average Salary: $117,036

TIER IIA – HYBRID PLAN									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34									0
35 to 39			3					3	304,581
40 to 44		2	7	15	6	1		31	3,334,497
45 to 49		3	12	41	29	7		92	10,991,148
50 to 54		5	24	72	49	14		164	22,010,663
55 to 59		3	11	54	79	28		175	24,442,293
60 to 64		1	13	36	64	31		145	19,613,546
65 to 69		2	3	18	17	9	1	50	6,743,299
70 & Up			7	6	8	1		22	3,133,826
Total		16	80	242	252	91	1	682	$ 90,573,853

Average Age: 56.0
Average Service: 20.0

Average Salary: $132,806

TIER IIA – ALL OTHERS									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34	2	3	15	6				26	1,876,385
35 to 39	8	24	168	206	10			416	38,634,140
40 to 44	26	39	252	815	243	7		1,382	137,151,953
45 to 49	29	32	236	939	690	193	1	2,120	218,071,271
50 to 54	31	26	206	920	781	444	3	2,411	254,949,920
55 to 59	17	27	226	833	677	379	25	2,184	229,651,903
60 to 64	10	19	204	622	459	227	30	1,571	160,084,467
65 to 69	5	10	75	211	118	54	2	475	50,033,925
70 & Up	5	17	27	53	28	17	1	148	15,320,540
Total	133	197	1,409	4,605	3,006	1,321	62	10,733	$ 1,105,774,504

Average Age: 52.6
Average Service: 19.2

Average Salary: $103,026

TIER III – HAZARDOUS DUTY									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29	1	4						5	434,220
30 to 34	3	166	120	5				294	28,109,870
35 to 39	2	219	451	60	4	1		737	73,226,201
40 to 44	3	117	329	22	21			492	49,220,213
45 to 49	3	73	169	9	3			257	25,408,490
50 to 54	4	66	92	7	2			171	17,070,370
55 to 59	3	48	80	2				133	13,546,765
60 to 64		22	43	2				67	6,879,327
65 to 69		8	8	1				17	1,718,191
70 & Up		4	2					6	556,917
Total	19	727	1,294	108	30	1		2,179	$ 216,170,564

Average Age: 42.1
Average Service: 10.8

Average Salary: $99,206

TIER III – HYBRID PLAN									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25									$ 0
25 to 29									0
30 to 34	3	26	7	1				37	2,963,535
35 to 39	4	30	31	9	1			75	6,709,160
40 to 44	12	39	48	1	1			101	10,295,842
45 to 49	4	33	39	5				81	8,650,264
50 to 54	5	33	33	4				75	8,361,594
55 to 59	3	21	32	1				57	6,813,148
60 to 64	3	16	26	1	2	1		49	5,107,449
65 to 69	2	8	13					23	2,188,178
70 & Up	1	3	6					10	985,785
Total	37	209	235	22	4	1		508	$ 52,074,955

Average Age: 48.1
Average Service: 9.9

Average Salary: $102,510

TIER III – ALL OTHERS

The Number and Average Compensation of Active Employees
By Age and Service as of June 30, 2024

	Years of Service							Total	
Age	**0 to 4**	**5 to 9**	**10 to 14**	**15 to 19**	**20 to 24**	**25 to 30**	**30 & Up**	**No.**	**Payroll**
Under 25		1						1	$ 11,723
25 to 29	14	41	7					62	3,771,696
30 to 34	48	318	208	13				587	49,408,479
35 to 39	47	466	534	143	10			1,200	105,483,303
40 to 44	26	453	490	52	74	1		1,096	101,103,748
45 to 49	33	367	402	25	22			849	81,023,046
50 to 54	26	351	379	11	7	2		776	71,868,100
55 to 59	19	339	369	11	5	1		744	67,609,610
60 to 64	14	234	319	9	4		1	581	52,072,949
65 to 69	11	112	144	7	1		1	276	23,744,506
70 & Up	4	38	54	1				97	8,279,102
Total	242	2,720	2,906	272	123	4	2	6,269	$ 564,376,262

Average Age: 47.1
Average Service: 10.3

Average Salary: $90,027

TIER IV – HAZARDOUS DUTY									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25	156							156	$ 9,856,145
25 to 29	718	80	1					799	60,944,298
30 to 34	726	237	5	1				969	77,394,553
35 to 39	462	200	4	2	1			669	55,641,210
40 to 44	249	131						380	31,907,577
45 to 49	155	57						212	18,259,824
50 to 54	129	50						179	15,989,607
55 to 59	95	27	3					125	12,481,004
60 to 64	32	16	1					49	4,397,334
65 to 69	10	2		1				13	1,731,458
70 & Up	3							3	457,850
Total	2,735	800	14	4	1			3,554	$ 289,060,860

Average Age: 35.8
Average Service: 3.4

Average Salary: $81,334

TIER IV – HYBRID PLAN									
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024									
	Years of Service							Total	
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.	Payroll
Under 25	49							49	$ 2,866,440
25 to 29	163	7						170	10,960,010
30 to 34	204	36	1					241	17,367,199
35 to 39	179	25	1					205	17,546,333
40 to 44	167	33						200	17,658,954
45 to 49	128	28						156	12,904,084
50 to 54	95	27	1					123	11,815,218
55 to 59	63	17						80	6,301,490
60 to 64	41	13	1					55	5,288,228
65 to 69	15	11						26	3,348,314
70 & Up	7							7	265,980
Total	1,111	197	4					1,312	$ 106,322,250

Average Age: 40.7
Average Service: 2.8

Average Salary: $81,038

TIER IV – ALL OTHERS										
The Number and Average Compensation of Active Employees By Age and Service as of June 30, 2024										
	Years of Service							Total		
Age	0 to 4	5 to 9	10 to 14	15 to 19	20 to 24	25 to 30	30 & Up	No.		Payroll
Under 25	1,122	14						1,136	$	38,925,627
25 to 29	2,081	167	3					2,251		140,872,396
30 to 34	2,097	500	19					2,616		186,601,911
35 to 39	1,947	475	10	14	1			2,447		182,541,026
40 to 44	1,651	396	2	10	5			2,064		159,485,213
45 to 49	1,371	299	5	1				1,676		130,267,979
50 to 54	1,215	241	2	6		1		1,465		111,232,218
55 to 59	979	225	3	4			2	1,213		92,599,593
60 to 64	562	173	4	2			2	743		56,423,368
65 to 69	208	60		1	1			270		20,626,279
70 & Up	49	13						62		3,915,668
Total	13,282	2,563	48	38	7	1	4	15,943	$	1,123,491,278

Average Age: 40.1
Average Service: 2.8

Average Salary: $70,469

NUMBER OF RETIRED MEMBERS AND THEIR BENEFITS BY AGE			
Age	**Number**	**Total Annual Benefits**	**Average Annual Benefits**
Under 50	690	$ 38,953,212	$ 56,454
50 – 54	1,556	96,906,183	62,279
55 – 59	3,392	179,055,088	52,787
60 – 64	7,344	349,137,896	47,541
65 – 69	10,246	469,692,694	45,842
70 – 74	10,171	493,538,883	48,524
75 – 79	8,486	412,828,285	48,648
80 – 84	5,245	252,240,228	48,092
85 – 89	2,845	131,751,835	46,310
90 – 94	1,355	56,837,355	41,946
95 & Over	502	18,061,938	35,980
Total	**51,832**	**$ 2,499,003,597**	**$ 48,214**

NUMBER OF BENEFICIARIES AND THEIR BENEFITS BY AGE			
Age	**Number**	**Total Annual Benefits**	**Average Annual Benefits**
Under 50	263	$ 6,811,974	$ 25,901
50 – 54	89	2,819,855	31,684
55 – 59	184	6,134,298	33,339
60 – 64	322	9,982,574	31,002
65 – 69	545	16,860,932	30,937
70 – 74	759	25,416,556	33,487
75 – 79	975	30,327,747	31,105
80 – 84	1,015	30,557,772	30,106
85 – 89	846	24,695,452	29,191
90 – 94	543	16,005,849	29,477
95 & Over	255	6,986,055	27,396
Total	**5,796**	**$ 176,599,064**	**$ 30,469**

NUMBER OF DEFERRED VESTED MEMBERS AND THEIR BENEFITS BY AGE			
Age	**Number**	**Total Annual Benefits**	**Average Annual Benefits**
Under 50	1,465	$ 16,760,602	$ 11,441
50 – 54	626	10,546,775	16,848
55 – 59	621	12,435,417	20,025
60 – 64	389	6,512,806	16,742
65 & Over	537	6,117,527	11,392
Total	**3,638**	**$ 52,373,127**	**$ 14,396**

GAINS & LOSSES IN ACCRUED LIABILITIES Resulting from Differences Between Assumed Experience & Actual Experience ($ Millions)	
Type of Activity	**$ Gain or (Loss) for One-Year Period Ending 6/30/2024**
Age & Service Retirements. If members retire at older ages, there is a gain. If younger ages, a loss.	$ 17.6
Disability Retirements. If disability claims are less than assumed, there is a gain. If more claims, a loss.	(20.0)
Death-in Service Benefits. If survivor claims are less than assumed, there is a gain. If more claims, there is a loss.	(10.9)
Withdrawal From Employment. If more liabilities are released by withdrawals than assumed, there is a gain. If smaller releases, a loss.	(25.9)
Pay Increases. If there are smaller pay increases than assumed, there is a gain. If greater increases, a loss.	(99.1)
New Members. Additional unfunded accrued liability will produce a loss.	(29.5)
Investment Income. If there is a greater investment income than assumed, there is a gain. If less income, a loss.	51.8
Death After Retirement. If retirants live longer than assumed, there is a loss. If not as long, a gain.	(76.4)
Cost of Living Adjustments: If COLA increase more than expected there is a loss.	50.8
Other. Miscellaneous gains and losses resulting from changes in valuation software, data or asset adjustments, timing of financial transactions, etc.	2.7
Gain (or Loss) During Year From Financial Experience	$ (138.9)
Receivable Transfer Amounts: Discounted value of amounts transferred subsequent to the end of the fiscal year.	503.7
Composite Gain (or Loss) During Year	$ 364.8

Schedule I – Actuarial Surplus Test

Section 5-162(h) of the General Statutes of Connecticut provides that the Retirement Commission may grant additional Cost-of-Living Adjustments (COLAs) for retired members if an actuarial surplus exists. An actuarial surplus is deemed to exist if three criteria are met.

I. ***Investment Income:*** The actual rate of return for the Fiscal Year ending on the valuation date must exceed the actuarial interest rate assumption.

Market Value of Assets on June 30, 2023: (A)	\$21,165,596,554
Market Value of Assets on June 30, 2024: (B)	\$23,890,859,768
Investment Income for FY 2023-2024: (I)	\$2,440,048,476
Actual Rate of Return for FY 2023-2024: 2I / (A + B – I)	11.45%
Actuarial Interest Rate Assumption:	6.90%

Actual return of 11.45% is more than the assumed 6.90%, so the first criterion is met.

II. ***Assets vs. Liabilities:*** Market value of assets must exceed 50% of specified liabilities.

Adjusted Market Value of Assets on June 30, 2024:	\$23,890,859,768
Specified Liabilities on June 30, 2024:	
Liability for Retired Members	\$32,363,089,606
Liability for Terminated Vested Members	\$562,473,848
Liability for Member Contributions with Interest	\$2,087,183,351
Total	\$35,012,746,805
50% of Specified Liabilities	\$17,506,373,402

Market Value exceeds 50% of specified liabilities so the second criterion is met.

III. ***Unfunded Liability***: Actual unfunded liability must be less than the projected unfunded liability five years from the determination date.

Actual Unfunded Liability on June 30, 2024:	\$19,186,215,936
Projected Unfunded Liability on June 30, 2029 (see next page):	\$ 3,054,742,000

Actual Unfunded Liability is not less than Projected Unfunded Liability, so the third criterion is not met and therefore, no actuarial surplus exists.

ACTUARIAL SURPLUS TEST
PROJECTION OF UNFUNDED LIABILITY

Section 5-162-h(b)(2) of the General Statutes of Connecticut specifies the means of calculating the Projected Unfunded Liability used in the third criterion of the Actuarial Surplus Test. The projection reflects the actual unfunded liability as of December 31, 1983 adjusted for changes in actuarial assumptions and cost methods through the determination date. No provision is made in the Statute for reflecting the impact of plan changes. The projection below reflects the following changes: data correction (June 30, 1987); change in actuarial assumptions (June 30, 1987); change in actuarial cost method (June 30, 1988); change in actuarial assumptions - interest rate only (June 30, 1989); change in actuarial cost method – amortization period only (June 30, 1992); change in actuarial assumptions (June 30, 1993); change in actuarial cost method – level percent amortization (June 30, 1997); change in actuarial methods and assumptions (June 30, 2000); change in actuarial assumptions (June 30, 2004); change in actuarial assumptions (June 30, 2008); change in actuarial assumptions (June 30, 2012); change in actuarial assumptions (June 30, 2016); change in actuarial assumptions (June 30, 2021).

Year	($000) June 30 Unfunded Liability	Year	($000) June 30 Unfunded Liability	Year	($000) June 30 Unfunded Liability
1987	$2,524,556	2002	$2,360,589	2017	$9,951,987
1988	1,954,257	2003	2,429,273	2018	9,659,917
1989	1,432,333	2004	2,502,591	2019	9,424,079
1990	1,939,758	2005	2,569,504	2020	9,140,386
1991	1,930,524	2006	2,634,814	2021	8,756,187
1992	1,920,505	2007	2,698,021	2022	8,198,476
1993	1,794,192	2008	2,823,251	2023	7,602,282
1994	1,787,586	2009	2,861,884	2024	6,964,951
1995	1,780,419	2010	2,895,933	2025	6,283,644
1996	1,772,643	2011	2,924,709	2026	5,555,326
1997	1,764,205	2012	4,160,465	2027	4,776,755
1998	1,835,087	2013	4,172,971	2028	3,944,463
1999	1,907,249	2014	4,174,465	2029	3,054,742
2000	2,222,296	2015	4,163,616	2030	2,103,631
2001	2,291,494	2016	10,057,733	2031	1,086,893
				2032	0

SCHEDULE J – PROJECTION OF UNFUNDED

An amortization payment schedule of the June 30, 2024 Unfunded Accrued Liability is provided in the table below. No future gains and losses are included in this table.

Valuation Year	Unfunded Accrued Liability ($ in thousands)	Amortization Payment ($ in thousands)
2024	19,186,216	1,733,888
2025	18,776,176	1,733,888
2026	18,337,844	1,733,888
2027	17,869,267	1,733,888
2028	17,368,358	1,733,888
2029	16,832,886	1,733,888
2030	16,260,467	1,733,888
2031	15,648,551	1,733,888
2032	14,994,412	1,733,888
2033	14,295,138	1,733,888
2034	13,547,614	1,733,888
2035	12,748,511	1,733,888
2036	11,894,270	1,733,888
2037	10,981,086	1,733,888
2038	10,004,893	1,733,888
2039	8,961,342	1,733,888
2040	7,845,786	1,733,888
2041	6,653,257	1,733,888
2042	5,378,444	1,733,888
2043	4,015,668	1,683,841
2044	2,608,908	1,596,268
2045	1,192,655	1,552,134
2046	(277,186)	(176,970)
2047	(119,342)	(83,325)
2048	(44,251)	(47,304)
2049	0	0